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FORUM ON HEALTH AND NATIONAL SECURITY

FINANCIAL STRESS AND BEHAVIORAL
HEALTH IN MILITARY SERVICEMEMBERS:
RISK, RESILIENCE, MECHANISMS AND
TARGETS FOR INTERVENTION

CONFERENCE REPORT



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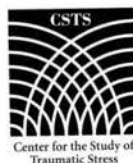
FORUM ON HEALTH AND NATIONAL SECURITY

FINANCIAL STRESS AND BEHAVIORAL
HEALTH IN MILITARY SERVICEMEMBERS:
RISK, RESILIENCE, MECHANISMS AND TARGETS
FOR INTERVENTION STRESS, RESILIENCE,
AND WELL-BEING

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Center for the Study of Traumatic Stress
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From the Conference Series:

FORUM ON HEALTH AND NATIONAL SECURITY

FINANCIAL STRESS AND BEHAVIORAL HEALTH IN
MILITARY SERVICEMEMBERS:

RISK, RESILIENCE, MECHANISMS AND TARGETS FOR INTERVENTION
STRESS, RESILIENCE, AND WELL-BEING

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First Edition

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PREFACE

The goal of this Forum on Health and National Security was to address financial stress in the lives of servicemembers and identify knowledge gaps and opportunities for gaining new knowledge that can lead to new and improved intervention programs. Financial stress directly and indirectly affects servicemembers' mental and behavioral health as well as servicemember and family functioning. Understanding financial stress can aid in developing effective programs to mitigate this stress and help servicemembers and families in need. The Forum reviewed the complexity of defining financial stress and the interplay of financial stress in the "web" of life stressors that impact servicemembers and their families.

The Forum brought together military and civilian leaders and scientists with expertise in risk and resilience, behavioral health, economics, models of stress behavior, and suicide to address the financial challenges faced by servicemembers and their families. Participants were challenged to develop new perspectives by synthesizing knowledge across diverse disciplines to better understand the complex issues of financial stress and associated life stressors, and risk and resilience factors moderating this stress. The Forum attendees also reviewed critical literature assembled from detailed searches, contributions by attendees as well as case studies and illustrations of the interactions of financial stress with life stressors and events. The Forum succeeded in identifying gaps in our knowledge and research recommendations to better understand financial stress and inform programmatic interventions for military servicemembers and their families.

*Financial stress
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EXECUTIVE SUMMARY AND RECOMMENDATIONS

The Services and the Department of Defense (DOD) have extensive programs designed to ameliorate servicemembers' financial stress. However the key dynamics surrounding financial stress as a stressor by itself or in combination with other factors are not well understood. Financial stress impacts mental and behavioral health as well as servicemember and family function. Financial stress is usually embedded in a "web" of life stressors and adversities (e.g. change in station, loss of job of a spouse, deployment, school needs for children, and illness of a relative) that vary with the servicemember's age, family structure, career phase and life context and transitions. The challenges faced by servicemembers as a result of financial stress are modified by pre-existing risk and protective factors, present context and expectations of the future. This dynamic interplay can contribute to altered health, mental health, and individual and family functioning including risk for suicide.

Understanding the sources and types of financial stress and the web of interactions in which financial stress is embedded in the military member and family's life course, can inform scientific knowledge and planning for actionable programs for mitigating negative effects of financial stress on health and performance. Financial stress can be conceptualized in multiple ways: the actual dollar amount of financial stress, the servicemember's perception of financial stress and also the servicemember's experience of "comparative" financial stress (e.g. compared to others) can each influence health and behavior. Financial stress can also be conceptualized as financial "hardship" (absence of enough) or as time varying availability (cash flow problems). Indebtedness is another type of financial stress and common in younger servicemembers in particular. Those who are using (or qualify for but do not use) available financial support programs, e.g., school lunches, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), comprise another class/type of financial stress. Lack of financial resources can lead to poor nutrition and cutting back on other health related activities. Housing ownership, foreclosure, unanticipated costs for fuel/air conditioning/repairs, being "in over our heads" are an aspect of financial stress usually later in the career and often associated with family conflict.

These types of financial stress (and others) also interact with economic issues occurring across the nation during any particular time. This occurs within a specific family and community setting and has a developmental component. A future time

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perspective is necessary to plan financially and is itself affected by one's present life context and events. Lack of or loss of future time perspective influences the ability to execute financial planning, and maintain financial well-being.

The Forum brought together Department of Defense and civilian leaders along with scientists with expertise in behavioral health, risk and resilience, economics, models of stress behavior, and suicide who understand the challenges faced by military servicemembers and their families. The participants were challenged to consider broad and creative perspectives ("out-of-the-box thinking") and to synthesize disparate knowledge to aid in the understanding of knowledge gaps on financial stress and servicemember's health and performance.

The Forum succeeded in its task. The Forum identified gaps in our knowledge and developed recommendations for research to better understand financial stress and to inform programmatic and intervention considerations for military servicemembers and their families.

RECOMMENDATIONS

Knowledge Gaps

- Studies should examine financial stress as part of a matrix of stressors including: pre-existing risk factors prior to entering the military, predisposing factors (debts, dependents), acute and precipitating, sustaining, modifying and mitigating factors and events (injury, career transitions, deployment, support).
- Financial stress needs to be operationalized in multiple ways. For example: absolute dollar of need; financial change over time; perspective of financial challenges compared to others; anticipated financial needs; financial limitations that are affecting life choices; financial loss/need associated with self-esteem/well-being; and others.
- Research studies and reviews need to examine the multiple adverse outcomes associated with various types of financial stress including: mental, behavioral and physical health (e.g., distress, increased substance/alcohol use and abuse, depression, suicidality, family violence), and functioning at home and work.
- To better identify interventions research should examine the various classes/types of financial stress and their associated multiple outcomes across time. Consideration of the type/class of financial stress, their differential trajectories across career and family time and the risk and protective factors for the various classes.
- Design research to also understand the cumulative effects of multiple stressors (i.e., load) on behavioral and health outcomes associated with various types of financial stress. High cumulative risk can overload the capacity of individuals and families and impair the ability to plan for the future and make optimal use of financial planning and supportive resources.
- Transitions are very important. Studies should identify critical transition times/risk points across the military career that are associated with increased risk of financial stress to servicemembers and families, such as basic training, deployment, PCS, demotion/promotion.
- Financial "shock" is often a part of leaving the military. This transition time is

particularly important and is a high risk time for a number of mental illnesses as well as suicidality.

- The perception of financial stress is itself a target for study. Research is needed to examine the perception and the relative experience of financial stress and its influence on health and behavior.
- Loss of reward — rather than financial impairment — is an additional perspective on financial stress that highlights changes in expectations. The literature on reward loss highlights the influence of context, the contextual factors of the loss and not just the loss itself, on subsequent outcomes. Contexts which are changing/unstable situations increase the influence of the environment on choices. Such a perspective can inform the effect of easy credit environments on particular individuals and timing of the effects. A better understanding of time periods which are heavily influenced by environmental contingencies can inform “the wrong person in the wrong place at the wrong time.”
- Some literature supports that losses are more potent on mental and behavioral health and performance than are gains. Financial loss may be one of a group of losses occurring at a particular time.
- Animal models can clarify and inform elements of the financial stress response in humans. Reward acquisition and loss in animal models has implications for understanding control and lack of control over financial gain and loss in humans and related issues of self-efficacy and power over ones future. Reward loss can induce stress-like behaviors such as aggression that are dependent on the context in which the loss of reward has occurred.
- Financial stress rarely operates “in a vacuum.” Identifying moderators, mediators, duration and joint effects are important research questions to identify risk and resilience factors and aid intervention development.
- Cumulative financial stress (i.e. across time) as load or strain may have additional effects beyond time limited financial stress. Understanding health effects associated with the buildup of financial stress and recovery from (“things are now back to manageable”) is important for identifying sustainment and recovery factors for financial stress.
- Understanding momentary time and context effects on financial choices requires additional research designs that focus on detailed data in smaller samples of servicemembers (e.g., intensive case control design). Such research is important to identify unique individual characteristics that are transient and require close assessment.
- DOD and the services can leverage existing military historical and administrative health and behavioral databases. Cross-linked data will facilitate analyses using “big data” to address factors related to financial stress. Defining types of financial stress is important to aligning queries of big data and to enable predictive analytics.
- Large data studies offer unique opportunities for understanding and developing decision support tools for leadership to identify those at increased risk of various types of financial stress and test interventions to mitigate risk. Developing and implementing across the services universal, centralized outcome variables

Animal models can clarify and inform elements of the financial stress response in humans.

An important aspect of gaining new knowledge is having a mechanism to pass this knowledge to those who can develop and test “tools” for intervention as well as mechanisms for implementation.

which are collected administratively as part of usual personnel data is valuable to this effort. Such large data across time will enhance understanding of risk and resilience/protective factors as well as program effectiveness.

- An important aspect of gaining new knowledge is having a mechanism to pass this knowledge to those who can develop and test “tools” for intervention as well as mechanisms for implementation. Without this mechanism new knowledge is lost or rejected because it is experienced as a burden on those who are working diligently to implement present programs and do not have the new knowledge in a useable manner. This is a critical step for moving from filling knowledge gaps to programs, interventions and implementation. Consideration of this system’s step is central to the effort to effectively move further knowledge of financial stress to successful action.

Programs, Interventions and Implementation

- Planning and inclusion of ongoing quality assessment and continuous quality improvement is needed in programs prior to program roll-out. Fidelity of measurements changes over time and should be monitored on a continuous basis to ensure accurate measures of program effectiveness. Understanding who does not use a program and what percent of people who need the program do not use it is important to developing effective programs.
- Continuous Quality Improvement (CQI) — addressing improving quality with evidence — when well implemented is a research strategy to develop effective programs. This quality management process requires close collaboration of researcher/SME and leadership to continuously ask the questions, “How are we doing?” and “Can we do it better?”
- Programs can be evaluated best when leadership and evaluation research is aligned. “Pragmatic trials” can be part of program roll outs. Often one can embed experiments into routine clinical or personnel programs to enable comparing usual care/programs with trial care or programs initiated in a staged roll out. This is possible in the military because of the amount of data the military collects routinely. Leadership support is critical to this type of design.
- The complexity of financial stress and its web highlight the value of wrap around (i.e., broad based) programs which can show effectiveness across multiple outcomes and with multiple stressors. Universal interventions (those that target more than one outcome) are valuable for their efficiency. Identifying, testing and evaluating universal training (active skills training) and prevention programs should be part of planned financial management and planning education across the career and family life cycle.
- Program evaluation is critical to efficient operations and providing effective interventions. Identifying programs that are effective is intrinsic to sustaining useful and cost effective interventions.
- Financial education programs require close integration into the military culture. This can increase their being experienced as a routine part of training and education and is important to engaging servicemembers and families. Consideration of differences between services and within the services can enhance program effectiveness.

- Innovative involvement of leadership can help make programs uniquely effective and enhance unit cohesion. Such programs require close attention to possible stigma and to ensuring equity across servicemembers.
- Enhancing the systematic coordination of financial education programs to target critical time points may increase their impact. Such programs hold promise of reaching the greatest number of servicemembers and families during times in their careers when they are at greatest risk of the negative effects of financial stress.
- Not all those who can use the present programs do so. Studies need to assess program utilization and identify why people who need services are not using the available services and why others seek help. For example, do servicemembers and families know what programs exist and are they able to easily access programs? It is important to address the actual availability (as well as utilization) of resources compared to the perception of available resources.
- The perception of financial stress and how a servicemember evaluates their financial stress compared to others will change over career and family time. These changes can identify opportunities for education and intervention.
- Financial stress as related to perceived wealth relative to others often has an accompanying lack of self-efficacy and decreased self-esteem that may result. The possible value of financial programs that foster skills that build self-confidence to handle current and future financial stress may alter this particular type of financial stress.
- Financial stress can be a result of impulsiveness and lack of planning. Research can inform who is at risk of this type of financial stress and when. For these servicemembers and families (and at the times of this risk) financial programs which can assist financial self-monitoring may be most helpful. Electronic apps and tools may appeal to some for this task.
- The use of new mobile and online technology can be helpful to some as part of changing financial stress. These should be part of a program to foster a sense of self-sufficiency in the management of finances.
- Easy access to credit (i.e., “Pay Day Lender”) is a contextual contributor to higher rates of financial stress for some. Knowing who is at most risk in this context is important. Understanding the when, where, and who of this risk can better suggest intervention needs.
- Linking older and younger adults is a frequently used intervention for decreasing stigma and increasing coping skills for multiple types of stressors and adversities. Increased use of this often informal mechanism can strengthen programs.

Studies need to assess program utilization and identify why people who need services are not using the available services and why others seek help.

OPENING REMARKS

*Speakers: Robert J. Ursano, MD, Anthony J. Stamilio, MBA,
John A. Fedrigo, Kimberly J. Elenberg, DNP, MS*

DR. MCCARROLL: Good morning and welcome to the Forum on Financial Stress and Behavioral Health in Military Servicemembers. Mr. Fedrigo, Mr. Stamilio, Ms. Thomas, Dr. Schoomaker, welcome. We are here to explore risks, resilience, mechanisms, and targets for intervention. We will hear diverse presentations ranging from the problems that servicemembers have; to the financial agencies; to animal models that help us think about rewards, lack of rewards, and how they affect behavior.

Financial stress is an event and a process; it is seldom an isolated condition. It can be acute or chronic. It can be affected by many circumstances including: economic, behavioral, psychiatric, substance abuse, and cultural background, to name a few. We will hear about barriers to seeking help such as shame and hopelessness, as well as factors that promote resilience and recovery. We will learn about the many problems that servicemembers bring to financial aid agencies. We look forward to hearing from the panel members and to lively discussions with a high level of participation by all. I want to thank the staff of the Walter Reed Army Institute of Research for their support.

MS. DICHTEL: I would like to thank the planning committee for working so hard to put this Forum together. Thank you Dr. Ursano, Dr. McCarroll, and Dr. Fullerton for your guidance and support and to our Forum organizing committee, Dr. Eric Meyer, Nikki Benevides, Michelle Herman, Joey Piemontese, Sergeant Hastings, and Sergeant Henderson.

DR. MCCARROLL: It gives me great pleasure to introduce Dr. Robert Ursano, Chair of the Department of Psychiatry at the Uniformed Services University (USU) and the Director of the Center for the Study of Traumatic Stress (CSTS). Dr. Ursano will moderate, discuss, and develop the issues brought forth by the panelists and the participants.

DR. URSANO: Welcome and thank you to our planning group. This is a wonderful opportunity to bring together this diverse group. I want to provide you with some sense of what we are about so that you will keep that in mind as we go forward. The Forum, you will notice, is called the Forum on Health and National Security. We have held these events since the mid-1980s. I want to tell you about the first Forum so that you will understand why we are here.

Financial stress is an event and a process; it is seldom an isolated condition. It can be acute or chronic. It can be affected by many circumstances including: economic, behavioral, psychiatric, substance abuse, and cultural background.

Our primary goal is to develop ways of asking new questions to better understand the problem of financial stress.

First, this is not a place to come to learn. It is a place to come to think. You have been brought here because you are thinkers and this is an opportunity to share your thinking. In the mid-1980s, the Air Force was particularly concerned, as was much of the Department of Defense (DOD), about the question of chemical and biological attacks that might occur in Europe. At that time, SCUPS Units, Survivable Collective Protection Systems, were buried throughout Europe. SCUPS Units were like large sewer pipes. Our forces and our medical care delivery were to take place in SCUPS Units. The Air Force wondered how people would live in these environments. Would people be willing to leave their families behind to go to these environments? How could we be sure that people would show up? The Air Force asked us to think about that with them.

We held a series of Forums at that time to think through the behavioral and mental health issues of surviving a chemical or biological warfare attack living in a large sewer pipe. It is very important to understand whom we invited to that meeting. Of course, we invited people with expertise in chemical and biological warfare, but you might be surprised to know we invited people from NASA. We also invited people from our submarine community. We invited people with special expertise in living in contained and isolated environments, for example, prisoners of war. By bringing together people who had thought through different parts of the problem, but who may never actually have talked together, we hoped to generate new knowledge, new thoughts, and new ways of thinking about the problem.

Similarly today, as we have done six or eight times over the past several decades, we have brought all of you together because you have a wide range of expertise and perspectives to share from very different vantage points. We have Jim Barrett, who is a distinguished behavioral psychopharmacologist in the world of neuroscience, one of the founders of the Neuroscience Program at USU, and a distinguished professor at Drexel University who brings animal models to the table. We have an outstanding group of DOD and service component leadership who think through the policy issues involved. We have those who provide the financial care for our servicemembers and the organizations they represent, and we have those who have thought about the psychological models of behavioral response to adversities and financial stress, and we also have those who operationalize these problems in practical ways. We have distinguished experts that span from our leadership to members of the Institute of Medicine, the National Academy of Sciences, a MacArthur Fellow, and the mother of a MacArthur Fellow. It is a pleasure to bring together such diverse people to think together.

Our goal is to have everyone talk and think among yourselves with us facilitating the process. Our panel members have the opportunity to present a particular perspective that each brings and how each defines particular sets of terms. I encourage you to keep in mind that when you hear a term that sounds absolutely logical and easy to understand, to recognize what that means from that particular vantage point, such as financial stress or hardship or financial hardship, or debt or family debt, may all be quite different, or the question of rewards and loss of rewards or incentives and changes in incentives.

These are all terms we bring to this topic and yet each of us from the discipline that we represent may have a slightly different definition. Understanding the differences in our definitions can be an important part of our identifying new ways to understand this problem.

Our primary goal is to develop ways of asking new questions to better under-

stand the problem of financial stress. By better understanding the problem of financial stress, and in particular its behavioral and mental health results, we will be better able to intervene and help servicemembers and their families. It is a long distance from understanding to changing practice and changing actual behaviors, but it has to begin with the understanding and thinking of a thoughtful group of people who can begin to ask the questions in a different way.

Barbara Thompson, Shelley MacDermid Wadsworth and I were talking earlier about the difficulty of finding space in one's schedule to pause and think. In our present-day world time is spent saying, "Which email should I be reading, how can I delete this one, and, oh, I forgot the one from yesterday." I was reminded by a colleague a short while back that we live in a world of continuous partial attention. Today we have tried to carve out a space to take you away from continuous partial attention and to allow you to think with us on this particular topic in a way that can be creative and thoughtful. What it requires of you is to be willing to speak and volunteer ideas, to recognize no one has the answer and that we are not looking for the answer. We are looking for your vantage point and your perspective.

From the Forum proceedings, we will develop a conference report and an executive summary. When the reports are completed you will each receive a copy. Now I would like to invite several of our leaders to speak to us and to provide us with some perspective from their vantage point. It is a pleasure to have Mr. Stamilio, Mr. Fedrigo, and Captain Elenberg, who will speak for Mr. Feehan, give us some perspectives of the major leadership within DOD.

First, I would like to introduce Mr. Stamilio, who was one of the leaders who charged us at our most recent Forum on Military Families in Transition. Mr. Stamilio is the Deputy Assistant Secretary of the Army for Civilian Personnel and Quality of Life. Much of our leadership here today, I think of as the COOs of our operation. They are the people who actually keep things moving forward – the fundamental parts and pieces of what keeps us moving.

MR. STAMILIO: I would like to thank all of you for taking your time to help us think about this important issue. I think that Dr. Ursano has it right — we have to approach this from many different angles because we do not have any really good solutions. We have many challenges, but nothing that we can put our finger on and say, "Well, if we just did this." I think this problem needs a multi-dimensional approach and that is why you are all here. I would like to bring up a comment that Bob Ursano made about continuous partial attention. When I think about my contribution to a group like this, continuous partial attention is about the peak for me. Generally, I am at continuous intermittent attention.

I did some thinking about this topic while I was running yesterday and the thoughts went something like this: What has changed? What has not changed? What have we done? What can we do? If I had to ask four questions for you to come back with, it would be those four questions. If this were a discussion about the evolution of military thinking or the evolution of warfare, we could certainly have multiple discussions about what has gone on since the Cold War and even long beyond that to the Desert Shield/Desert Storm era to the last 15 years of war. We could trace technology, we could trace tactics, and we could trace strategy. However, when we talk about financial stress and its impact on behavioral health, that lineage or the threads of, "Here is how we got to be where we are," do not exist.

I would like to illustrate my point and charge you. I have been around this institution since 1974 and my first memory of the financial business inside the Army

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What has not changed?

What have we done?

What can we do?

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was payday, which was when a young Lieutenant had a footlocker full of cash, and a gun, and a jeep. He drove around to about half a dozen sites on his first permanent duty station, set up a little table, and dished out every soldier's monthly paycheck. What happened after that? If payday was on a Friday, you know what happened because Friday and Saturday night most soldiers would be out doing what soldiers do, buying cars, buying booze, etc. Come Monday morning, they would all be in formation because they ran out of money. The behavior was patterned, predictable, and something that you could wrap your arms around and make sure that it worked okay. It was much less predictable on the family side because often soldiers would take that cash, maybe gave their wife \$20, did what they were going to do, and spouses were left with whatever was left. That created all manner of stress on the family side that we have been dealing with for many years.

Zoom forward seven or eight years and we have a young Captain who is sitting in his company and now everybody is getting checks to deposit in the bank. Nobody gets a footlocker full of money, nobody even gets a stack of checks to dish out, but soldiers have more money in their pockets. Friday and Saturday nights look much like they did before. The dream is to buy that motorcycle or pickup truck, just as it was seven or eight years earlier, but soldiers have become more savvy. In addition, we are on the cusp of improving the finances and improving pay for soldiers.

I was sitting in my office in Hawaii, an extremely high cost of living area with an interest rate of about 15 percent. Two young soldiers came to me and said, "Sir, we want to buy a condo." Three times they came to me and three times they got the same supportive chain of command answer, "Get out." It was not until the Inspector General from the installation called me and said, "Stamilio, you can't tell them they can't buy a condo. If they've got the money, they can buy a condo." So, I followed instructions and the two young men bought a condo. Believe it or not, I have maintained contact with that group and these two men are now significant real estate investors, so they figured it out. They were two out of two hundred. The other 198 had the same pattern of Friday night, Saturday night, and the spouse gets a \$20 bill.

Zoom forward several more years. There are field grade officer discussions, professional development discussions, and sometimes you bump into an investor or an investment counselor who wants to provide information. And so the leadership starts getting more and more involved in investments. So now what happens on Friday and Saturday nights with many junior soldier families, and some relatively senior soldier families, is the \$20 bill on payday.

Now zoom forward to the most recent period of conflict, these last 15 years. If you tracked the pay that servicemembers receive, we are doing pretty well by them in terms of dollars. Over the course of multiple deployments, servicemembers receive hazardous duty pay and a number of different pays that go with it. The level of compensation is fairly robust. Is it all they deserved in these times of war? Yes, absolutely, that is why Congress does it. Has it changed anything else? I think when we hear from the panels from the service relief organizations, we are probably going to hear the same stories that we heard in 1974, we ran out of the \$20 and now we need some money to get by on.

My point is, in this world of finances not much has changed, but in this world of warfare a great deal has changed. In the economic world and in the world that we live in right now, a great deal has changed in the economic psychology business. Any major corporation who does marketing has a bunch of brainiacs on their

team who know exactly how to push the right buttons to elicit the right kind of consumerism they want.

What has changed? What has not changed? What have we done? What can we do? We have this situation. It clearly exists and we clearly have to do something more. I do not know what that is and I am hoping through your discussions today, you can help lead us down the path to some policy and programmatic solutions to the challenges that we face. Thank you all for being here, and, Bob, thank you very much for allowing me to speak.

DR. URSANO: It is a pleasure to invite Mr. Fedrigo, Deputy Assistant Secretary of the Air Force for Reserve Affairs and Airmen Readiness, to speak and provide us with some perspectives. Both Mr. Stamilio and Mr. Fedrigo share a background that touches the FBI and appropriate security forces so they have a particular perspective on all of these issues. Mr. Fedrigo has shared some issues about the question of suicide among security forces that has great relevance to some of our other topics.

MR. FEDRIGO: I am going to take a different tack than Tony Stamilio did. I thought the four questions he posed provide a great opportunity for discussion during the coming days. Tony made good points about the level of compensation, where our servicemembers are today, what they have in their pockets and in their checking accounts today, the post-deployment surge of brand new pickup trucks in the dormitory parking lots, and all the things that go along with having a little bit more and having the responsibility to manage that little bit more in a responsible way.

Military compensation in the last 20 years, and the rate of pay and benefits, compares favorably to the civilian counterpart. If we look at an E5 today and we look at what their total compensation package is, they are competitive with almost every college graduate today and have a far better retirement and medical compensation package on top of their base pay. Why then do we still have the level of financial stress that we have? We educate our young troops. Everybody that comes into any of our services receives significant financial training. They are monitored almost every day, so if an E3 pulls into the parking lot with a brand new Corvette they are going to be questioned about that purchase and everybody in the unit knows they were questioned. There are role models in our units, and if somebody is leading a life that is not financially responsible it is very apparent. Everybody knows what everybody else makes. Everybody knows what everybody else's spouse makes. Everybody knows who is missing meals. Everybody knows who had to go back on a meal card because they could not feed themselves on separate rations. There are really no secrets in our units when it comes to financial health.

When we connect this to the broader aspects of our comprehensive airmen fitness program and then eventually to the most destructive result, suicide, we see what remains are relationship, financial, and legal issues. These are the same three primary reasons our airmen committed suicide 25 years ago. I think this is consistent across all the services. People will always have relationship and legal issues, but with financial issues we have made significant progress in improving the pay and compensation packages for our airmen. We would think that financial stress would no longer remain a primary driver for suicide, but it is. It literally is holding the same place in that trifecta of why people commit suicide as it held when our compensation packages were significantly lower.

What I hope, and I think many of us here today hope, is to have a conversation about responsible community-based living, living a military life. How do we do

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that? How do we teach our young people that? It is not by sitting down and getting an hour's worth of financial training. It needs the "it takes a village" approach. We have started to use the term, "lead an Air Force life." Everybody in the Air Force knows our core values: integrity first, service before self, excellence in all we do. We drill that into our airmen. Every airman can tell you what their core values are. But if you ask that same airman if they are living an Air Force life, what does that mean? Are you living either in a dormitory or with other airmen? Are you eating with other airmen at the dining facility? Are you recreating with other airmen by playing sports on Air Force sports teams? Are you attending dining-outs? Are you participating in unit activities? If you have a family, are you living in base housing? Do your children use the Child Development Center and the youth centers? In other words, are you surrounding yourself on a daily basis with other airmen? Do you see examples of senior NCOs and officers that are leading an Air Force life and who are successful? They are living a good life, their families are happy; their children are going off to college.

The people that are the generation ahead of our airmen have done well. If you are shopping for groceries, are you in a commissary interacting with the generation ahead of you that are now retired? When you are in an aisle in the commissary and somebody needs help getting something off the top shelf, that drives a conversation between the previous generation and the current generation. Are you playing on the golf team where you happen to be playing the retiree team? When you are standing on the tee box, one of those retirees asks, "What are you going to do with your life?" and you tell them you have all these great plans. Then you play that same team three months later and that same retiree remembers that they talked to you, that young airman, and says, "Hey, you told me three months ago you were going to be taking classes. Are you taking them?" "Well, no, I can't. I can't afford my 25% of the tuition assistance." "Why not?" "Because I'm out every Friday and Saturday night."

This is the conversation that we believe, leading that Air Force life, that Army life, that Marine Corps life, Navy life, Coast Guard life, we do not train it into people; we grow it into people. Over time, people understand not to spend their entire deployment tax-free windfall on a new truck when their current vehicle is only three years old; that family comes first, long-term financial health comes second, and current desires, not needs, come third.

The concept of delayed gratification is important and it is important not only to our financial health, but it is important to make sure that we are living that Air Force life that is going to make us successful in our career. That is my pitch. It is a similar pitch that I gave at our suicide summit several weeks ago. Our numbers are not good. They are the worst they have been in many years. We are really concerned about that. We are hoping, that with this collective group, we can formulate some strategies to reduce those numbers.

DR. URSANO: Mr. Feehan was unable to be here this morning. He is the Principal Deputy Assistant Secretary of Defense for Readiness in the Office of the Under Secretary of Defense. Captain Kimberly Elenberg, who is in the Office of the Under Secretary and who is associated with population health, will make some comments for Mr. Feehan.

CAPT. ELENBERG: I am delighted to be here on behalf of Mr. Feehan and to be speaking with such an esteemed group of colleagues. Dr. Ursano stated that today is not about learning, it is about sharing and thinking. It is always so valuable to take time and pause. I wanted to take a moment to help set the table in terms of

the opportunities and challenges that we have in the Department of Defense. I am speaking on behalf of Personnel and Readiness because in addition to health affairs, I also work with the Joint Staff doing a capabilities-based assessment on total force fitness. In Personnel and Readiness we think that the eight domains, the mind and the body, are very much impacted by finance. That is one of the reasons we are here. We want to capture that gap and be part of the thinking process for the end solutions.

Recently we have been to many installations and there is evidence that income impacts the health, the resiliency, and the readiness of our beneficiaries. In general, we know that many factors come together to affect the health of individuals and communities. Whether people are healthy or not is dependent on their circumstances and dependent on their environment. I think that is what makes us a little unique from the rest of the country. We change environments every couple of years. We are moving every few years from one installation to another or we are deploying. We face unique challenges. We do not have the roots of our community. Many of our spouses have careers that are dependent on certifications, whether they are lawyers or allied health professionals or cosmetologists, that require re-certification when they move from state to state. These are some things that are unique and we have to put them into context when we think about the challenges we face.

Understanding who faces financial stress is important. We have to be careful not to assume it is our youngest or lower-ranking servicemembers who are at risk. We need more data to truly know who is at risk. My brother is currently the General Counsel for Carlisle Barracks in Pennsylvania. He just came back from NATO, but he still needed to go on the WIC (Women, Infants, and Children) Program and on SNAP (Supplementary Nutrition Assistance Program). Why? He was in law school; he was a reservist and he was called to Afghanistan. His wife was pregnant and working. He came home and had lost a year of law school. He had to go back and restudy for the boards. He was coming back onto active duty. His wife had their baby, the baby had some medical difficulties, and she had to stay home to take care of the baby. They did not have the income needed to take care of their infant. They depended on WIC and on SNAP. My brother was highly educated, he was a First Lieutenant, and he had been to war. As the Office of General Counsel for Carlisle Barracks, he no longer needs that assistance.

The point is that we cannot make assumptions that it is our enlisted or that it is our youngest servicemembers who have financial stress. Everybody across the board at different times can face challenges that put them in a position of financial stress. I think gaining that understanding is something we need to be able to do. We need to look at total household income in relation to the total number of individuals dependent upon that income to understand risk. We cannot just look at the pay of the active servicemember; we have to look at the total household income and the dependents in the household.

One of the data points we pulled, to get an idea of how many people are eligible for assistance and who are financially stressed, is from the DoDEA (Department of Defense Education Activity) statewide schools. In 2014–2015, 46% of students in the DoDEA schools were eligible for free and reduced price meals. We were not able to pull the numbers for WIC because that information was not collected, however it has been added to the new national survey of WIC participants, so we will have a better idea in the future. The national level data from the American Community Survey in 2014 showed that approximately 2% of active duty military in the U.S. and the territories participated in SNAP. If we have 46% in the DoDEA schools

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qualifying for free or reduced lunch programs, that is an objective number based on total household income of need. Only 2%, though, are participating in SNAP. There is a gap. Why, if we have 46% eligible here, are only 2% taking advantage of SNAP? I think we have to ask that question. We do not have the answers, but what does that mean?

The Defense Commissary Agency was another place where we looked. If we have 2,000 people using SNAP and some percentage of folks using WIC, what does that translate to? What it translated to was nearly \$104 million dollars worth of nutrition assistance redeemed at military commissaries in Fiscal Year 2013. At that time, they were also on track to sell \$31.2 million dollars in goods under the WIC Program. We have some objective numbers, but I do not think we have a very clear picture yet.

We went to places where we saw patterns in purchasing products like fruits, vegetables, and proteins. We looked at sales data and patterns of behavior. When we went to talk with some of these family members, what we learned was many of them do not feel right about receiving assistance. It reminded me that my brother fought my sister-in-law tooth and nail about taking advantage of SNAP and WIC. The attitude is, "I am educated. I should not need help." Going down to that office, producing the documents, asking for help in the middle of the day, missing different classes or opportunities to do that, was difficult and embarrassing for him.

The Esposas Militares Hispanas U.S. Armed Forces and Military Spouse Advocacy Network shared feedback that their members feel embarrassed and often stigmatized. Working with financial counselors is not easy. Working with the chain of command often creates reluctance. People are often told they are not managing their money well. That is not necessarily the whole picture, with folks jumping to conclusions. There are other surveys with less objective data so we have to be careful how we interpret them. In 2014, it was reported that 20% of households served by the Feeding America Network included someone who was a veteran or who had served in the military. It looks like their requests have tripled since 2009. I believe from these numbers we can say that financial stress is preventing some of our families from purchasing healthy foods.

In a nutshell, we need better clarity on who is at financial risk and what is contributing to that risk. We need to know because military families facing financial risk seem to have a harder time with health issues and are struggling more to achieve total force fitness. There is some evidence suggesting that low income has detrimental health effects. We know that from the articles that were provided in preparation for this Forum.

Prior to traveling to installations on the Western Pacific, we had to ask why there is a behavior pattern in what was purchased in the Western Pacific commissaries versus what was purchased in commissaries here in the Continental United States. We give COLA, cost of living adjustments, to people who are overseas, so if the commissary has great fruits and vegetables and prices are pretty reasonable, why is there a change in pattern? When we met with spouses they said, "Many of us find it very difficult to get employment, so the COLA goes to our total household income. While our spouses may have gotten more money, we have become dependent on our COLA for that food budget. Our COLA has gone down by \$200-\$800 because as the dollar gets stronger, cost of living adjustment also goes down, or up depending on the dollar." Therefore, they are dependent on something that is a little inconsistent. These are the folks who spoke to us, so I am not attributing this to everyone. I am not sharing it as fact; I am only sharing this as our experience.

In 2012, the American Community Survey data showed that military spouses make an average of 38% less total personal income and are 30% more likely to be unemployed than their civilian counterparts. In 2013, the Military Officers Association's Military Spouse Study found that 90% of responding female spouses of active duty servicemembers are underemployed. The survey also reported a 30% unemployment rate among spouses of active duty members who are 18–24 years old. That seemed higher in the overseas families because of the difficulty getting working visas and the length of time it takes to secure employment. I can tell you that the number of DoDEA schools over there needing teachers is huge. The number of well educated, PhD, master's level spouses wanting to work in the DoDEA schools becomes a challenge, a barrier. I think there are things we can do there.

Over 55% of the respondents to the Military Spouse Study indicated that they needed to work, and 90% indicated that they wanted to work. However, active duty military spouses are more likely to have moved within states, across states, and abroad. Again, compared to their civilian and veteran counterparts, this is a big challenge that impacts total family income. The impact is not only reflected in the food that is purchased. When we talked to these spouses, the other things that they shared with us included, "You built us a great indoor playground over here because our climate is bad. We want to be able to go out and socialize and make relationships so that we have girlfriends or other relationships to help us watch our children so we can get to the gym or so we can go to work. But when they charge us \$2 a child to go to the playground and we have three kids, that is \$6 a day to go to the indoor playground; a playground that has been built for us so that we can get out and be social and integrate and build relationships. Now it becomes a choice between paying for those types of activities and paying for food." This impacts what participation we have in programs as well. Many of the spouses said that this leads to feelings of sadness, "I was told my education is important, I have worked hard, I want a job but it is really difficult for me to get hired, so I am focusing on my family, but my income is less. I cannot feed my family the same level of nutritional food that I would like to, and I feel like I am not contributing to my family in the way I want to and it is putting a strain on my marriage."

I am sharing these stories to show that we do not necessarily have a great vision of the true financial stress our families are facing, and when they do face financial stress, it affects many things from how they feel about themselves, to their relationships with their spouses, to the food that they are putting on their tables. The context of people's lives significantly shapes their health. We need to continue to support the families of our servicemembers who have to be ready to fight tonight.

We have acknowledged, and I agree wholeheartedly, that personal behavior, personal choices, and personal coping skills play a huge role in what we do. We all have to make choices. Somebody cannot be our babysitter; they cannot tell us how to manage our money. We can offer classes, we can offer training, and we can offer mentorship. Yes, a huge role, a primary role, belongs with the individual, but we can optimize the infrastructure and policies in place that support those individual efforts. I think that is why we are here today. Are there gaps? Is there anything that we can do to further support the families? The financial stress impact is real on our families.

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I

PANEL I: FINANCIAL STRESS IN MILITARY SERVICEMEMBERS AND FAMILIES

*Speakers: Hollister K. Petraeus, Cheri Nylén, C. Eldon Mullis,
Linda F. Egentowich*

DR. URSANO: We have begun to hear dialogue addressing some of the key questions. What is the problem? How does our system facilitate cures for the problem or how does the system create the problem? Are there particular groups at increased risk? Captain Elenberg's comments also highlight the questions of barriers to assistance, even when assistance is present. How do we understand these barriers and how do we understand the interactions among them? How we define these elements is a key part of our work.

We have asked the service relief societies to tell us about their programs and the problems they see. It is also an honor to have Holly Petraeus head the panel and make comments. Holly is the Assistant Director of the Consumer Financial Protection Bureau (CFPB). I look forward to hearing about the CFPB, how it came to be and how it has addressed some of the issues of financial problems and indebtedness of our servicemembers.

MS. PETRAEUS: I appreciate the opportunity to participate in this Forum. I am convinced that financial problems are inextricably intertwined with many of the behavioral health and family issues that the military has struggled to address in recent years. When Dr. David Chu was the Undersecretary of Defense of Personnel and Readiness, I remember hearing him talk about a 2005 Department of Defense (DOD) survey where servicemembers rated finances as more stress-inducing than deployments, health concerns, life events, and even personal relationships. He rightfully took that as a message to equate financial readiness with mission readiness.

In 2003, at the beginning of the Iraq War, I was at Fort Campbell, Kentucky when the entire 101st Airborne Division deployed to combat. I saw the financial challenges that followed deployment. For example, families that qualified for public assistance had their benefits reduced because there was one less person living in the household after a deployment. Some National Guard and Reserve families that had never experienced a deployment came to our Family Assistance Center because they were not receiving pay and they did not know where else to turn. There were young spouses who had serious difficulties handling financial responsibility and

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Debt collection complaints constitute the largest category of complaints from the military community.

some servicemembers who had to return from deployment because their finances were severely impacted by identity theft. The efforts I made to work on those issues with post officials, local leaders, and state and national legislators directly led to my being offered the job of running the Better Business Bureau's (BBB) National BBB Military Line Program, a partner in the DOD Financial Readiness Campaign. My six years at the BBB led to my current job at the Consumer Financial Protection Bureau.

The CFPB looks at finances through the lens of consumer protection, but there are also a variety of ways that we protect consumers and ensure that the financial markets work for them. This includes supervising companies, rule writing, enforcement actions, and educating consumers to understand their financial rights and to know where to go for tools and resources. My office is part of the CFPB's Division of Consumer Education and Engagement. In addition to my office, the division includes offices for special populations such as students, older Americans, and the economically vulnerable. We also have an Office of Financial Education; and an Office of Consumer Engagement that oversee our internet and social media outreach.

My office has a statutory mission that servicemembers and their families receive the financial education they need to make informed consumer decisions, to monitor and respond to servicemember complaints to the Bureau, and to work with other federal and state agencies on consumer protection measures for the military. I would like to focus today on what we have heard through our complaint monitoring, since I think it is very pertinent to this Forum.

When people submit a complaint to CFPB, we ask them to self-identify if they are military, a veteran, or a dependent. My office has two staff members who are dedicated to provide military subject-matter expertise. We issue a military complaint snapshot twice a year that is posted on our website. From July 2011 through December 2014, the CFPB received 29,500 complaints from servicemembers, veterans, and their family members. Debt collection complaints constitute the largest category of complaints from the military community. The number of complaints in this category continues to rise and now makes up 39% of the total complaints. We often hear that debt collection practices are a significant source of stress. Servicemembers tell us that debt collectors' tactics have included contacting the servicemember's military chain of command to get payment and putting a clause in the loan contract that the servicemember must grant the debt collector the right to contact the chain of command. Servicemembers report that debt collectors threaten punishment under the Uniform Code of Military Justice, to have the servicemember reduced in rank, and to have the servicemember's security clearance revoked. We also hear that debt collectors have contacted a spouse after deployment of the servicemember and pressured the spouse to repay immediately without the benefit of communicating with the servicemember. In one instance, debt collectors demanded that the surviving spouse of a servicemember killed in combat pay them immediately from the death gratuity.

Credit reporting is also a top category of concern. Seventy-two percent of these complaints deal with incorrect information on credit reports. This is a significant issue for the military community because a negative credit report can impact the ability to obtain credit and to retain security clearance. Student loans are another major concern. Fifty-eight percent of these complaints focus on problems dealing with the lender or servicer.

We continue to see long-standing trends, such as servicemembers complaining that they have not received the relief and protection provided by the Servicemembers Civil Relief Act. I pulled some examples and quotes from recent complaints that

servicemembers have allowed us to share, illustrating how stressful financial issues can be on military personnel and their families. One example highlights a servicemember's concern about the impact that financial trouble or an incorrect report of financial trouble can have on their job: "As a military member with a security clearance, this has been a complete nightmare for me. In addition to having to report this to my security personnel, I now have to disclose this as a financial responsibility issue from now on. I will now have to be reviewed to determine my suitability for access to special programs. I have attached a sample copy of the form I now have to complete where I am now grouped with people with garnished wages and bankruptcy, despite my high credit score." Another said, "When they garnished my wages, I was unable to pay my rent and bills. My landlord contacted my commanding officer at my work. Now I am facing disciplinary actions at my job and possible eviction." Finally, a soldier wrote to us to get help resolving his issues with his student loan servicer. He was about to deploy and was struggling to receive his benefits under the Servicemembers Civil Relief Act. He said, "I fear that their delaying tactics will continue past the time I have stateside. I am on orders to deploy this month and I need help. I can't continue to fight this when my attention should be on matters that will literally involve life or death decisions."

My office regularly hears about the impact that financial stress can have on our military members and their families. I am glad that the people attending this Forum are looking at this in a holistic way and as an overall health issue, and not just as a financial problem. I look forward to hearing from all the experts here, starting with those on this panel.

Let me begin by introducing Cheri Nysten, who is the Director of the Navy-Marine Corps Relief Society Case Work Division.

MS. NYLEN: Financial stress is a very personal issue for me. When I was a young Ensign's wife we qualified for food stamps, but we did not use them. My husband said it did not matter if we ate beans and rice. Food stamps were limited and were for enlisted personnel, not officers. During that same time, I became a mother and received a call from a visiting nurse from the Navy-Marine Corps Relief Society (NMCRS) who offered a home visit but I was concerned that I could not afford the service. The nurse explained that the NMCRS did not accept money and that she would be delighted to come to my home to check on me and my newborn.

The Navy-Marine Corps Relief Society is unique among the aid societies for several reasons. First, we are one of the few non-profits that was created using eight thousand dollars in gate proceeds from the 1903 Army-Navy game. Our organization was founded in January, 1904 by a group of volunteers and was created to provide assistance to orphans and widows of marines who were killed in the line of duty. At that time, there were no benefits, no life insurance, or other financial means to provide for orphans and widows. The group of founding volunteers heard every single case and made every decision. The first employee was a visiting nurse who was hired in 1922. Our organization has now moved into a dual-purpose mission. We provide direct financial assistance while educating to make people self-sufficient.

The Navy-Marine Corps Relief Society has eligibility criteria that covers most of the people you would expect including: active duty personnel; sailors, marines, and their immediate family members; retirees and their eligible dependents who have DOD ID cards; reservists on Title X orders or those activated for more than 30 days; surviving spouses and their orphans; spouses who meet the 20/20/20 rule (spouses who were married to an active duty servicemember for more than 20 years

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and whose marriage was concurrent with at least 20 years of service); and parents who were dependent upon a servicemember who was killed in the line of duty. We also reserve the right to make decisions on a case-by-case basis for an individual who has specific needs or who does not fit into one of the established categories. Our field offices bring cases to us and we make a determination based on need. The types of assistance that we provide are: financial assistance through loans, loan-grant combinations, and grants based on our assessment of individual circumstances. We also have 160 ships that have active duty representatives on board. If a sailor or marine is at sea, they can receive money to help with an emergency.

We also provide short-term financial and budget counseling, but we do not duplicate services offered by the federal government. There are times when an installation may be short-staffed and the program manager that would normally offer the personal finance management is not available. There are also times, such as sequestration, when government employees are not available. Because we use our own staff and volunteers who we have trained, we may be able to step into that role as needed.

The NMCRS offers education loans and grants. Although this is not a primary mission, we have accepted private donations for educational programs. For example, we offer a workshop, Budget for Baby, for prospective parents to teach them about the costs associated with having children. We incentivize participation by offering servicemembers a “baby-care package” that includes towels, onesies, socks, and crib sheets. We also offer a special gift that helps young families understand that they are part of a tradition within our sea service, and that family engagement in our community is important. We have a special gift for these newborns that is hand-knitted and is made by our crafters, many of whom are former volunteers or are elderly members of our community. It is a way for us to connect the older members of our community within the Marine Corps and the Navy culture with our younger members. It helps everyone understand that our sea services support a holistic community. We often tie a note to the gift so that the young families can connect with the older volunteers. Any marine or sailor who is remote can also participate. Servicemembers can also participate in the Bundles for Babies program offered by the Air Force Aid Society.

We have twenty-seven thrift shops primarily for active duty members; however, the thrift shops are also open to retirees if an installation can support it. We also try to support a uniform locker if we cannot offer a thrift shop. The uniform locker is free or available at a nominal cost for servicemembers who cannot afford to purchase the uniform items.

The Society Visiting Nurse Program has been supporting Navy and Marine Corps families since 1922. The program offers newborn weigh-ins and confidence building visits for moms as well as medication management for elderly clients. Sometimes our nurses will work with the healthcare team to let them know how a patient is doing between visits. An anxious spouse, whose servicemember is at sea, can request a visiting nurse to accompany them to a doctor’s appointment. We also have a Combat Casualty Program which is unique because even our marines and sailors who are not medically retired, but are simply separated, will always be followed. For the rest of their lives, visiting nurses will follow up with them, will contact them, and will support them. These nurses will fly to them and they will support their surviving family members.

Our relief society uses an all volunteer workforce and a “train the trainer” philosophy. For example, many of our volunteers come to us and they themselves

are not good money managers. We use this opportunity to immerse individuals in a community of sound financial managers. Many of our volunteers are with us for as much as 100 hours and when they leave us they feel bad that they were only able to participate for four or five months. We just smile and thank them for their service. During their time with us volunteers learn how to budget, read a leave and earnings statement, and fill out a budget form. Before they leave us, they will understand pay and tax tables. Using the “train the trainer” philosophy, we have the opportunity to expose spouse volunteers to the military culture and how military pay and benefits are structured. This training allows volunteers to teach others how the financial resources within the military work and what resources are available.

The NMCRS has three different financial programs. The first program, Quick Assist Loan, was established in 2007 specifically to combat payday lenders and is a self-defined needs program. Any active duty servicemember may borrow up to five hundred dollars interest free by defining one of five categories for which they will use the funds. Loans are processed in minutes and servicemembers leave the office with a check.

The second financial program is our Traditional Needs Program. This program is open to every retired and active duty sailor or marine and their eligible family members. Assistance may be in the form of loans, grants or combinations based on our assessment and based on the budget completed during the interview process. Although there is a list of what types of things servicemembers can request, we will assess any need. Our field offices have the authority to approve any requests for things that are listed. If the director at the field office receives a request for something that is not listed and feels that there is a compelling reason for the case to be considered, the request is sent to headquarters. If the headquarters staff on my team cannot consider the request, then it sent to the president of our organization for review.

The third program is our Monthly Supplement Program. We have an application process to provide money to supplement income on a monthly basis for our indigent clients who are usually widows, medically retired individuals who are in school, or retirees that are well below the poverty line. This program ensures that these individuals have a lifestyle that is appropriate for their needs. The NMCRS feels that we owe this to our sailors and marines.

The Navy-Marine Corps Relief Society has worked hand in hand with their peers since 1998. Between our ships at sea, our emergency service offices, local service offices, and our full service offices, we have a total of 235 locations. The three service aid societies (Navy-Marine, Army, and Air Force) cover the vast majority of the world. The American Red Cross also picks up any clients who are more than 50 miles from a society office. Eligible servicemembers can apply for assistance through the American Red Cross 24 hours a day. Our partnerships provide a safety net underlying every DoD ID card holder, 24 hours a day, seven days a week.

Many servicemembers do not have a fundamental awareness of personal finance because they were never taught at home or at school. For example, a young servicemember calls on a Friday night to tell me that they were in our office on Tuesday but the money they expected is not in their bank account. After a few questions, they realize they have a paper check in their hand that they were supposed to deposit. They are surprised that the money does not automatically appear in their bank account.

We also have challenges with the mobile military lifestyle. For example, government credit cards may be mailed to a servicemember's home of record where

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the servicemember no longer lives. Parents sometimes use the card and run up the balance; however, the servicemember is still responsible for paying the monthly bill. Other challenges include: changes of home port, longer deployments, short notice for permanent change of station (PCS), extended family members' demands on servicemembers who are the single source of income in the family, car emergencies, pet emergencies, not being prepared for a PCS, unexpectedly becoming an absentee landlord, and issues with predatory lenders.

Even though the Servicemembers Civil Relief Act and the Military Lending Act are a source of protection, servicemembers do not always know how to access their benefits. We can provide safety nets but young servicemembers need to know how to ask for help.

MS. PETRAEUS: Our second panelist is Retired Army Colonel Eldon Mullis, Deputy Director and Chief Operating Officer of Army Emergency Relief.

MR. MULLIS: Army Emergency Relief (AER) wants our soldiers to be mission ready and to understand that there are many financial distractions that can impact mission readiness. When I looked through the readings posted on the Forum's website, I found a 2013 Financial Industry Regulatory Agency (FINRA) publication that discussed military capabilities. The publication reported that 19% of the military had problems paying their bills each month. Some servicemembers were spending more money than they were taking in. I was surprised to read that the numbers included all military ranks: 21% for junior enlisted personnel, 20% for junior non-commissioned officers, 18% for senior enlisted officers, and 14% for commissioned officers. Clearly, servicemembers have financial problems regardless of their rank. Army Emergency Relief is a place that senior leaders, commanders, and command sergeant majors can refer their soldiers for financial help.

In 2014, we distributed approximately sixty-five million dollars to 47,000 soldiers, retirees, and their dependents. This year, the numbers decreased significantly compared to previous years. For example, in 2008 we distributed eighty million dollars to 60,000 people. We are very concerned about this trend. To address this concern, AER sent a retired Sergeant Major from our Assistance Section to 21 Army installations. He spoke to 2,000 soldiers who consistently told him that they would feel stigmatized by their leadership if they used our services.

Our data shows that approximately 68% of soldiers who come to AER only come once. This tells us that they come to us not because they have mismanaged their money, but because they had a one-time issue or life event like an unexpected car repair or an unexpected medical debt. We hope servicemembers will choose AER for financial assistance because we can offer them interest free loans or grants. We do not want soldiers to go to payday lenders, pawn shops, or other organizations that may take advantage of them. One FINRA report states that the average interest rates and fees of predatory lenders can total 338% over the life of a loan.

Recently, I helped a Warrant Officer who was transferred from Korea to Fort Hood, Texas. The pay system incorrectly listed him as leaving the Army instead of making a transfer. His income stopped and he arrived at his new duty station without pay. During the transfer, he had two family financial events. His grandmother died and his sister came to live with him. He paid for everything, including his grandmother's funeral expenses and, in the process, incurred three thousand dollars in debt. Instead of coming to AER, he went to a payday lender where he got a loan that he planned to pay back in four months. Fortunately, the soldier was referred to us and I reviewed his payment plan from the payday lender. In the four month period,

he was going to pay back eight thousand dollars. AER was able to extract him from this situation and he quickly returned to being a productive soldier.

The biggest challenge for AER is awareness. Many people do not realize who is eligible for assistance. There is a misconception that AER is only for active duty soldiers. Eligibility extends to soldier's family members, retired soldiers and their dependents. Each year, we send out letters to all Army retirees to remind them that they are still eligible for AER assistance. We can tell when the letters arrive because phone calls to AER increase dramatically.

Reservists, the National Guard, and their dependents are also eligible for assistance once they have been on active duty orders for at least thirty days. Retired National Guard and Reservists are also eligible for assistance from AER. All widows and children of servicemembers who died while retired or on active duty are eligible for AER assistance. This group is eligible for grant money that they do not have to pay back.

How do we decide whether to give a soldier a grant or a loan? The answer depends on their budget. If a review of their budget shows that they can afford to pay back money over 12 to 36 months, we issue a loan. If the budget review worksheet shows that they have no surplus, we offer them a grant. That is our business model and that is how we sustain our programs. We re-cycle money. When one soldier makes a payment, we take that money and we give it to another soldier in the form of a loan or a grant.

A soldier can access AER at any Army installation and any place in the world. We have reciprocal agreements with all the relief societies. An Army soldier can go to the Navy-Marine Corps Relief Society, or any Navy, Air Force, or Coast Guard base for AER assistance. If a sailor, marine, or an airman comes to an Army base, AER will process the appropriate loan for them. Any soldier can also call the American Red Cross for financial assistance. As part of our reciprocal agreement, all the aid societies reimburse each other when they provide assistance across services. We also reimburse the Red Cross when they help our soldiers.

There are many categories of assistance for soldiers. Assistance is available for emergency leave, rent/mortgage payments, car repairs, funeral expenses, food, medical expenses, non receipt of pay, cranial helmets for children, essential furniture, car seats, and rental cars. In April 2011, there was a government budget impasse and the military issued the soldiers' pay vouchers. During that time, AER provided additional money where it was needed.

We also have several programs in place to help soldiers. The Commander's Referral Program may authorize a fifteen hundred dollar loan to a soldier. The Wounded Warrior Comfort Grant is a five hundred dollar grant given to wounded combat soldiers while they are recovering in the hospital. The Army Wounded Warrior Special Access Program helps soldiers who are medically retired. Sometimes Veterans Administration (VA) benefits for medically retired soldiers do not begin right away. When that happens, AER will transfer funds into a soldier's bank account electronically until their VA benefits begin. The Survivor Assistance Program helps widows and orphans. Currently, we have nine elderly widows that receive monthly stipends to supplement their social security payments.

Army Emergency Relief also provides scholarships to children and spouses. The Major General James Ursano Scholarship Program awards scholarships to children. MG Ursano was the Director of AER thirty years ago and AER named the children's program in his honor. Scholarships are need based and children are eligible if they

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What is the Air Force Aid Society? We are a private, non-profit, charitable organization and we are the official charity of the United States Air Force.

attend school full-time. We awarded 3,165 scholarships last year, with an average award of approximately twenty-three hundred dollars. Last year we also awarded thirty-five scholarships to children of fallen soldiers for a total amount of one hundred twenty-three thousand dollars. In 2014, we awarded 1,000 scholarships to spouses with an average award of seventeen hundred dollars. Unlike the children's scholarship program, the program for spouses allows them the flexibility to attend school part-time. We are very proud of our scholarship programs and all the services Army Relief Society provides.

MS. PETRAEUS: Our third panel member is retired U.S. Air Force Colonel Linda Egentowich, who is the Chief Operating Officer of the Air Force Aid Society.

MS. EGENTOWICH: I served twenty-eight years in the Air Force and I am still serving airmen. What is the Air Force Aid Society? We are a private, non-profit, charitable organization and we are the official charity of the United States Air Force. The Society was created by General and Mrs. Grant during World War II when we were part of the Army Air Corps. General and Mrs. Grant recognized that the Air Corps air cadets would suffer the greatest losses during World War II, so they created education programs to help the surviving children.

From our humble beginnings of airmen helping airmen, we have continued to carry the mission forward. The Air Force Aid Society is headquartered in Arlington, Virginia, and we have a staff of twenty-one people. We have a presence at every Air Force installation through our Airman and Family Readiness Centers. The Centers are provided as compliments of the Air Force. The Air Force provides the space and the staff to deliver the programs for the centers.

Oversight of the Air Force Aid Society programs is managed by a volunteer staff of trustees drawn from within the Air Force and civilian communities. The Secretary of the Air Force, Chief of Staff of the Air Force, and the Chief Master Sergeant of the Air Force are the senior Air Force leaders who serve on our Board. We brief them once a year and send them quarterly updates about current activities and how our programs are working or not working.

The Air Force Aid Society, like the other service aid programs, supports eligible airmen. Our active duty members and their families are our first priority. Wounded warriors are also eligible and are given a comfort grant of five hundred dollars. Air National Guard and Air Reserve members on Title X orders for fifteen days or more are entitled to assistance. Typically, activated Guard and Reserve members request financial assistance due to emergency financial situations as a result of their activation. We also support retirees and their families, as well as widows, widowers, and their dependents.

Our mission is very straightforward. We support the Air Force mission by taking care of airmen. Officers are also included but the majority of our assistance goes to enlisted personnel. We support the Air Force's mission by helping airmen in one of three ways: through emergency financial assistance, providing free access to community programs funded by the Air Force Aid Society, and funding needs-based education grants as well as merit-based scholarships.

Assistance for financial emergencies is in the form of no interest loans, grants, or a combination. Emergency assistance is the highest priority. My boss always says that if he had an extra dollar to give, he would give it to emergency assistance. Emergency assistance is the first pillar of support. Banks are envious of our default rate which is less than 1% for loans. Most of our emergency assistance goes to personnel who are E3 through E5. They are at the age or the grade where funds, relationships,

kids, and financial demands collide. Their demands tend to be higher in this grade structure. Also in this grade structure, we find that marriages, divorces, remarriages, blended families under one roof or blended families with children under other roofs all contribute to financial demands.

Types of emergency assistance include emergency travel, vehicle expenses, basic living expenses, funeral expenses, as well as other needs. Emergency travel includes travel to the bedside or the graveside of an immediate family member. In August 2014, the Air Force Aid Society recognized that some servicemembers were not prepared when a parent passed away. They did not have any emergency funds set aside for travel and other costs. When an active duty servicemember loses an immediate family member, whether it is a mother, father, brother, or sister, spouse, or in loco parentis grandparents, the Air Force Aid Society funds that servicemember's travel and associated costs with a grant. This program has been very well received. Vehicle expenses include repairs, vehicle insurance, and sometimes car payments. Basic living expenses (BLE) includes rent, utilities, home deposits, and funeral expenses. I often get questions about funeral expenses since servicemembers receive insurance for this purpose. Insurance takes time to process. Meanwhile, there is a funeral to plan. The Air Force Aid Society will step up when a funeral home is not willing to wait for the insurance to pay out.

The Air Force Aid Society uses a case-by-case approach for each assistance request that we receive. We offer many programs. The first question we ask a servicemember is, "What is your emergency?" We look for ways to say yes. Our Airmen and Family Readiness Center staff are wonderful people but they do not have the authority to say no to an assistance request. If they determine that the servicemember's request fits the eligibility criteria, we help them. If they think a request does not meet the eligibility policy, they have an educational handbook to use as a reference. If they have any questions, they call the headquarters of Air Force Aid Society. Only the headquarters of Air Force Aid Society can say no to an assistance request.

The second pillar of support is our community programs. Community programs are offered in concert with the Air Force and we rely on the Air Force to help build them. Programs focused on child care, readiness, parenting, and support for spouses were created during Desert Shield and Desert Storm. We frequently refer to our Air Force counterparts to determine if the programs are still relevant and valuable to airmen. Are they being used and how much are they being used? The Air Force Aid Society funds the community programs even though the Air Force may create them and offer them. Community programs are offered at no cost to airmen and their families.

Our community programs are designed to improve the quality of life for Air Force airmen and their families. Programs are not transferrable to servicemembers outside of the Air Force. The one exception is the Bundles for Babies program. Our relief society peers work very hard with us to make sure that our servicemembers understand who is eligible to participate. Community programs are offered to all Air Force personnel at Air Force installations through the Airmen and Family Readiness Centers. They may also be offered at a joint base that is led by an Air Force leader. The programs that are offered vary based on the installation's population and their demographics. For example, if you have a base that has more senior officers, they may not participate in some of the Bundles for Babies classes. The programs are based on the needs of the airmen, the enthusiasm and the marketing prowess of the Airman and Family Readiness Center personnel, and what space is available. In the

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Of all the stressors within the Air Force Aid Society, it seems that operations tempo and personnel turbulence are the leading causes for airmen to seek Air Force Aid Society emergency financial assistance.

case of the child care programs, the Child Development Center's ability to take on additional children depends on whether or not the community has a family childcare provider available to provide assistance.

The third pillar of support is our flagship program, the Education Assistance Program that was started by General Henry Arnold. Each year, The Air Force Aid Society sets aside six million dollars for need-based education grants for eligible dependents. Post-9/11, the GI Bill has been very generous. Since its inception in 2009, there was a rapid drop in our scholarship application rates. The good news is the individuals who needed assistance received it. Everyone who applied was awarded a two thousand dollar education grant.

This year, for the first time, we are rolling out a slightly different model. We will offer a range of education assistance grants between five hundred to four thousand dollars. The amount of the award will be based on percentage of need. Everyone will receive assistance based on percentage of need as opposed to a two thousand dollar flat rate.

Most of the financial assistance, in the form of education grants, has gone to the active duty E7s, eligible Air National Guard and Reserve E6s and E8s, O4s and O5s, retired E6s and E8s, and retired O4s and O5s. Dependents of retired O4s and O5s represent the largest application group. This makes sense when you examine the demographics of those receiving assistance. These airmen are more likely to have college-aged children or spouses. If you know of any airmen that have children or spouses who want to attend post-secondary education to obtain their degree, please refer them to our Air Force Aid Society website and we will reach out to them. In addition to the needs-based education grant, the Air Force Aid Society sets aside fifty thousand dollars for ten incoming freshmen who have a 4.0 GPA. It is possible for a student to receive a merit-based scholarship in addition to an education grant.

A previously successful program that has waned in participation on base communities is the Youth Employment Skills (YES) Program. YES is a program where high school teens can earn dollar credits towards their post-secondary education by volunteering on installations. We are trying to capture a sense of community within an installation through the YES program. Despite the Air Force's promotion of this program, high school teenagers seem to want cash in their pockets today. They are not willing to put the money they earn in the bank for post secondary education. It seems airmen and spouses are more impressed and supportive of this program than the teenagers.

Of all the stressors within the Air Force Aid Society, it seems that operations tempo and personnel turbulence are the leading causes for airmen to seek Air Force Aid Society emergency financial assistance. The time spent away from the family to train up for deployments, the time spent away while deployed, or post-deployment and reintegration stressors may result in financial and emotional stress. Sometimes family separations can lead to additional financial stress if more than one household has to be maintained. Force reduction drills increase stress for the airmen at work which can impact the family at home.

Unexpected medical retirements are another source of stress. For example, a wounded warrior who is no longer able to perform his duty is forced to retire unexpectedly. Retirement at this time was not the plan. The plan was to work for ten more years to save, however, retirement is staring them in the face today. Other life events occur that create financial stressors. These include vacating a residence only to learn that a scheduled deployment was canceled, divorce, and visitation costs for

children who may live far away. Financial stress is also increased when an airmen is paying for another home in addition to their primary residence. Sometimes when servicemembers have a permanent change of station (PCS) they do not sell their homes. They find themselves a homeowner at their last duty station in addition to their current duty station. They may not be able to sell their home due to the housing market downturn from years ago or they may be upside down in their current mortgage. They may try to rent their home, but rental situations do not always work out.

When servicemembers PCS to a remote tour they want to make sure the family they are leaving behind has a structure around them. The family might go to live with mom and dad who cannot absorb all the costs of feeding and housing extra people. Servicemembers send funds to help with additional costs which increases their financial burden since they are now supporting two homes. Recently we have seen increased out-of-pocket expenses and co-pays for dental services. This can happen when yearly allowances are met and a dependent still has an immediate need for extensive dental care prior to a PCS.

Because the servicemember may have the most dependable and reliable financial stream, they might be the breadwinner for an entire extended family. For example, the airmen that we see are sometimes expected to pay for parents' and in-laws' funerals because no one else in the family has the funds. Because the airmen are sending money home to family members who have financial issues, they come to us and say that they cannot put food on their own tables. Finally, our retirees and widows who live with their children or grandchildren may find that their pension is the only income for the family. They use their pension, social security benefits, or survivor benefits to provide for everyone in the extended household. In these difficult situations, the widow or retiree ends up having nothing for themselves.

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PANEL 1 DISCUSSION

Moderator: Hollister K. Petraeus

CAPT. ELENBERG: It seems like, in general, there is a no wrong door approach for the aid societies. Regardless of service, people can use any of the relief societies since they offer similar programs. As an alternative, servicemembers can call the American Red Cross if they are not located near an installation. The one thing I did not hear about is the community programs. Do you have to be part of the Air Force to participate in their community programs?

MS. EGENTOWICH: The Air Force Aid Society, in concert with the Air Force, has created community programs. Programs are offered at the installations and funding is provided by the Air Force Aid Society, for airmen and their families.

MS. PETRAEUS: I have seen some flexibility at joint bases or at bases that have all services represented. When we were at MacDill Air Force Base, the Airmen and Family Readiness Center would not automatically deny services to someone from another service that came for help. They found ways to make it work.

DR. KESSLER: What an extraordinary set of services. It is incredible. Cheri, I noticed that you talked a great deal about programs to teach people how to better manage their money. Do the Army and the Air Force also have programs that teach people how to prevent financial difficulties?

MR. MULLIS: That is a great question. The same question came up about ten years ago when we were briefing Army leaders about our efforts. They asked us what we were doing on the prevention side. We took their question to heart and set up the Personal Financial Management Course. Initially it was a pilot study at several Army installations, however, in 2008 it was established across all Army installations. All soldiers (E1-E3) in basic training received eight hours of personal financial management courses. They also received platform instruction on topics like how to read a Leave and Earnings Statement, how to buy a car, how to maintain good credit, and how to interpret a FICO score. Army Emergency Relief financed the contract for 1.2 million dollars each year up until 2012, when the Army took over the program.

MS. NYLEN: The Navy-Marine Corps Relief Society is separate from the Department of the Navy. The Navy and the Marine Corps both have a Personal Financial Manager Program and Command Financial Specialists Programs. The Navy-Marine Corps Relief Society has the opportunity to help one-on-one when we have clients in our office. If a married couple comes to us we talk to them together about their issues. If it is a retiree or the retired couple, we talk to them in the same

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way. Sometimes it is just the spouse who comes to our office. We provide one-on-one financial counseling, education, recommendations, and additional resources to everyone who comes to our office.

MS. EGENTOWICH: In the Air Force, the Airmen and Family Readiness Center is a resource center which houses financial counselors, the sexual assault victims' office, and readiness NCOs. When the Air Force Aid Society works one-on-one with a client and realizes they have a problem with their budget, we refer them to the financial counselor's office for remedial training. The Air Force has the responsibility of making sure airmen receive the education and the training to read and create a budget that will get them through different points in their career.

MR. MULLIS: In the readings section on the Forum's website there is a paper by LTC William Skimmyhorn at West Point. Dr. Skimmyhorn studied soldiers who went through the Personal Financial Management training. In his paper, he talks about the positive outcomes of the program, and the benefits. It was a good study that assessed soldiers who went through the program and whether they were more successful at managing their money than soldiers who did not have the training.

DR. SCHOOMAKER: I am most familiar with the AER program since I am retired Army. The array of services you provide for servicemembers is impressive. Although the emphasis might be subtly different, there are no major gaps between the programs each of the services provide. Am I correct?

MS. NYLEN: Navy-Marine Corps Relief Society is completely confidential. We are completely separate from the Navy and the Marine Corps. When a client comes to us, there is no engagement of military authorities. The only time that we would ever report back to a command without a servicemember's concurrence would be for criminal misconduct, a breach of good order and discipline, a threat to the command, or threat to self or others.

DR. SCHOOMAKER: That sounds like an important issue. However, in terms of actual services provided, it sounds like they are duplicated or triplicated across the societies. Is that correct?

MR. MULLIS: That is correct. The basic services are very similar. However, each organization has their own programs. We are each separate, private, non-profit organizations. Soldiers donate to AER, airmen donate to Air Force Aid, and sailors and marines donate to the Navy-Marine Corps. Our pots of money are different and distinct from each other, but the services that we provide are basically the same.

DR. SCHOOMAKER: I have made two observations, which might not be addressed now but might be addressed throughout the day. First, the discussion seems to be input and output oriented without any focus on real outcomes. Going back to what Ron Kessler said earlier, we know how much money goes into these programs. We know how much contact they have with individuals. What do we know about impact down the road? Second, if it is correct that financial need is a risk factor for suicide, then the clients that you serve should be at high risk. I am curious to know whether you are linked to mental health programs because of that or are suicides are occurring within a different sector of people who are equally in need financially, but who are not seeking care.

DR. URSANO: We have brought questions to the floor that are honing in on issues concerning the mental health impacts of these events, how we classify and understand the different resources, as well as their outcomes and effects on people.

DR. NOCK: Eric Schoomaker and I were talking about financial stress and suicide. Is it simply that people who have financial stress are at an elevated risk of

suicide? We talked about the fact that the suicide rate is much lower than the rate at which people experience financial stress. What interaction of factors might put people at risk? What is the role of mental disorders? What is the role of phase in career, stage in life, or transition point? Understanding this constellation of factors will be difficult.

DR. SCHOOMAKER: Matt and I agree that these programs are terrific. We know how thoroughly they cover the gaps in financial support for soldiers, sailors, airmen, marines and their families. Is it possible that those who seek help are not the population that is at greatest risk? Is there a separate sequestered group that is at greater risk for suicide? The “at risk” group may not be people that are as financially stressed as the junior enlisted or the young officer. Matt, did you mention some data on that?

DR. NOCK: I did mention data that I will discuss later in my talk. I do not want to ruin the surprise.

MS. EGENTOWICH: In the Air Force, we tend to look at the Airmen and Family Readiness Center as a resource available to help airmen and their families. When an airman has a financial emergency and they are able to say they have a problem by asking for help from the Center, we define that airman as a resilient airman. One of our frustrations is that we cannot identify the airmen in need who have not come to us. We also do not know why some airmen do not come to us. Are they concerned about career damage? Do they know about us? Did they come in the past but we were not able to help them? We do not know the answers. We have no way of surveying airmen through Air Force channels or through their .mil domain email addresses to ask, “Do you know us?” We have no way of asking airmen why they do not use our resources, how we can better help them, and how we can make our programs more beneficial and useful. These issues are our frustrations.

DR. NOCK: I agree. The programs are absolutely amazing. I was struck by the fact that people are not using them more. They seem underutilized. Then again, mental health services are underutilized as well, because of stigma. We have safety nets, but how do you get those who are at the most risk to use them? It seems there are similar challenges in both financial assistance programs and mental health services.

MR. FEDRIGO: The three primary drivers of suicide in the Air Force for the past twenty-five years are relational problems, financial problems, and legal problems. Eighty percent of suicides that we have examined were due to relationship issues. A combination of the last 20% consists of legal and financial problems. In many cases, these two issues are linked. These are people who have defaulted on home loans and have legal judgments against them for various activities. These are not people that have a short-term, small financial need. If it is a financial issue, then they have lost their home and their cars. They have a judgment against them that they do not know how they are going to pay. These are very significant types of financial issues.

CAPT. ELENBERG: As we see a smaller active duty force and increased dependence on the National Guard and the Reserves, why do we have less of a pulse on them than we have on the active duty servicemember? There is not necessarily an answer to this question. When we have a surge-up, are individuals in need making connections? How are we communicating the availability of assistance to them when they need it? Who are the civilian counterparts that help them? Who are the equivalents, at the state level, to the wonderful aid societies to help the National Guard and the Reserve components?

DR. MOTTOLA: Yesterday Princeton researchers published a paper showing

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that death rates have generally declined across all demographic and age groups. However, they found that for the white middle-aged population, the death rate has increased over the last three or four years. They reported why they believe this is the case. Some of the reasons are similar to what has been discussed, but there is one reason that has not been mentioned. The study reported that suicide was one of the driving factors increasing the mortality rate among middle-age whites. They also mentioned financial stress and drug use. Perhaps drug use is related to financial stress. There are likely other reasons, too, but I think the gentleman that brought up the question about the role of mental health is an important one.

MS. MCCLELLAND: I currently work at the CFPB. I also worked in the Department of Defense for many years. I was also an Air Force Aid Officer and worked in financial counseling. In financial counseling, the relationship between the mental health providers, which we called the clinical providers, and the non clinical providers was very important. Stronger relationships between the clinical providers and the non-clinical providers led to better results. For example, when I worked with social workers who understood how financial distress affected relationship problems, our work together was much more effective. It is a huge challenge for servicemembers to find financial assistance they trust when they walk out the gate or when they come off of Title X. I have been working with social workers at the University of Maryland Social Work School on identification of resources for provision of financial assistance for servicemembers after leaving the service. The CFPB has a demonstration project with sixty financial coaches across the country who are working with recently transitioning veterans. It is hard to convince people that we are the good guys and not the ones who want to sell them the mutual fund and the insurance policy. The issue of trust on the outside is significant because servicemembers have so much support when they are in uniform. These are big challenges to overcome.

MR. MULLIS: To answer the Captain's question about the National Guard and Reserves, some states do provide assistance to the National Guard. From the Army's perspective, there are Army Emergency Relief programs for them depending upon the state. Texas and, I believe, Illinois are states that have good programs. You posed a very good question. How do we get consistent aid across all fifty states?

CAPT. ELENBERG: The new chairman had a very good point when he came on board and said that before we come into the service we are not in this uniform. We have an all-volunteer force and nobody is born wearing a uniform. How do we educate people and help them become resilient before they are activated? More importantly and more relevant today, how do we maintain resiliency in our all-volunteer force so that they are ready when called? When they go from active duty to civilian life, how do we transition them from the Title X benefit back to civilian life? I think we have a moral obligation to help them because we are putting them back into our communities and communities are the strength of our nation. We have to make sure to keep this in mind as we try to understand the challenges.

PANEL 2: ANIMAL MODELS OF REWARD AND LOSS, THEORIES OF HUMAN RESPONSES, AND FAMILY STRESS

*Speakers: James E. Barrett, PhD, Bud Schneeweis, CFP, Gary R. Mottola, PhD,
Stevan E. Hobfoll, PhD, Shelley MacDermid Wadsworth, PhD*

DR. URSANO: Let me remind all of us that we are using words like financial stress and debt, but we have not defined these words. What is financial stress? Who is vulnerable to it? Financial stress is not just owing money or not having enough money. Not all people are vulnerable to mental and behavioral distress arising from these elements. What other elements are included among people who have the most distress? Is it not having money? Is it not having money in the context of other people having money? Is it not having money for a particular reason? Who in a family needs the money? The spouse, the child, yourself? All of this complexity has to feed into final common pathways about the distress experienced by individuals and families.

The next panel is going to give us the direction to go forward and to broaden our thinking. Their discussions will range from economic perspectives to animal models to families and psychology. We will begin with Dr. James Barrett, who is Professor and Chair of the Department of Pharmacology and Physiology at Drexel College of Medicine.

DR. BARRETT: We study animals to gain insight into environmental and biological factors that govern behavior. I hope that some of the illustrations I provide today will allow you to extrapolate from them. Although I am concentrating on animal models of reward and loss, virtually all of these procedures, principles, concepts, and results have been replicated in humans. My talk will give a basic introduction to terminology and methodology, some fundamental principles, and key concepts of the general effects of reward loss in animal models — along with some implications and conclusions.

One model of exploring rewards in animals is through the use of the Skinner box with pigeons or rats. In the chamber, different keys allow the experimenter to control behaviors associated with different key lights. An example is a study using what is

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called a multiple schedule. A multiple schedule is simply two different environmental conditions. Those environmental conditions are signaled by different colored lights and those lights can control different kinds of behavior.

We all are governed by our environment and by certain schedules of reinforcement. The term schedules of reinforcement describes the consequences of how rewards and lack of rewards govern behavior. Reward loss occurs when a previously rewarded response is no longer reinforced. In psychological terms this is called extinction. The purpose of extinction is to decrease behavior. If there is no reinforcement, behavior decreases. However, what I am going to talk about today are situations where, although a behavior may be decreasing, the loss of reward actually generates a great deal of other behaviors. It is those other behaviors that increase in frequency. Sometimes they are beneficial and sometimes they are counterproductive. These conditions apply almost universally to every type of reinforcer. These are the so called generative effects of extinction. As the targeted behavior is eliminated or reduced, other responses may emerge. This could be the loss of financial incentives or the loss of financial rewards. Understanding how behavior changes during extinction has been the key to understanding many of the fundamental principles having to do with the acquisition and maintenance of operant and Pavlovian behaviors.

Extinction generates response variability, behavioral contrast, adjunctive behaviors, and aggression. For example, a rat acquires a reward by pressing its nose into a panel. The experimenter then removes the food presentation so that the nose poke no longer produces a reward. The rat's response to the panel that previously produced the reward decreases, but there is an increase in responses to the other panels. So, although that particular behavior was decreased for nose-poking, the response varied across a number of different situations and actually was higher than it was in the original acquisition, even though those responses were not being reinforced.

That kind of response variability is seen in a number of cases. Extinction not only reduces or eliminates target behavior, but it also generates increased variability. It can include topographical variations on previously reinforced or completely different responses. Selective reinforcement of those response forms can change the future probability of behavior. This was seen in an application of a very old experiment conducted on a vegetative individual who was basically immobile, but was reinforced by sugar water for raising his right-hand for a period of time. The response was extinguished and soon, the previously immobile left-hand started moving around and started waving and was generating much more frequency in that behavior. This is extinction-induced variability in a very primitive kind of situation.

Behavioral contrast occurs when two or more schedules of reward are in effect. You can think of these as different contexts. In phase one, the pigeon pecks a red or green key. The schedules are identical. Food is presented according to a schedule of intermittent reinforcement. In phase two of this study, however, pecks on one of the keys no longer produces food. The question is, what happens? As the responses on the extinction key begin to decline, responses on the other keys begin to increase. This is called behavioral contrast. There is no increased reinforcement, but it generates behavior that previously did not have any other consequences.

The third example that I want to talk about is extinction-induced aggression. Pigeons were reinforced for pecking a key and then the reinforcement was removed, creating a loss of reward. The pigeon that was previously receiving the food turns around and starts to attack the other pigeon or stuffed pigeon in this case. This

change is substantial in terms of producing a response that is counterproductive. I think we can extrapolate from this to other current situations.

The final example is called schedule-induced adjunctive behavior. This behavior occurs when rewards are infrequent. It does not matter whether the individual is responding to produce a reward or whether the reward is given independently of behavior. In this case, food was delivered according to an intermittent schedule. There was a water bottle available in the chamber, so there was another opportunity to respond. Licks on the water bottle increased substantially under this particular schedule. Over a 24 hour period the amount of water consumed in the home cage compared to the experimental session was excessive. This is called adjunctive behavior. There are a number of other situations where if alcohol is available to the animal in the water bottle under these intermittent schedules, it generates behavior that has no real significant consequence except that it is excessive. It is engendered by the environmental conditions and under conditions where the reinforcement is intermittent.

We have discussed several procedures where reward loss generates many behaviors with different contingencies. You can protect against some of these effects by arranging certain environmental conditions. Extinction generates new responses. Responses in one context can occur under different conditions, the behavioral contrast. The resurgence or generation of responses begins during transitions and can continue even when the former response has been eliminated.

In transition states, individuals suffer different kinds of consequences under different kinds of conditions. These not only occur in acquisition and extinction, but describe many different, but significant behavioral processes occurring in everyday life. The methods of analysis of transitional processes of extinction hold promise for studying new methods and developing new applications for such transition states. More research with socially significant arrangements is necessary to determine how clinical situations lend themselves to these particular different contexts. During the loss of reward, prior behavioral histories can immunize or protect against the immediate effects of reward loss. The implications of extinction and the loss of reward are broad and myriad and the study of extinction is ripe for further translational research and behavior analysis. The key to understanding some of these processes is to study some of these effects in animal models and translate them to human conditions. I recently found out that individuals with a history of major depressive disorder showed prefrontal cortex hypoactivation during the loss anticipation of certain outcomes. This sets the stage for looking at the interactions between the environmental conditions and changes in the brain that are associated with the loss of reward.

DR. URSANO: I want to be sure that people captured a few words and phrases. Loss of reward may be related to increased variability in behavior, to new adjunctive behaviors, and to changes in aggression. Lastly, there are animal models of prior behavioral history, the history of the animal, that can reflect on their resilience or risk present in the face of loss of reward. These are some of the concepts that we are trying to capture.

Our next speakers, Gary Mottola and Bud Schneeweis, will address financial stress from the economic point of view. Gary is the Research Director of the Financial Industries Regulatory Authority (FINRA). Bud is the Director of Military Financial Readiness for FINRA.

MR. SCHNEEWEIS: Good morning, everyone. I work for the FINRA Investor

The implications of extinction and the loss of reward are broad and myriad and the study of extinction is ripe for further translational research and behavior analysis.

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Education Foundation. The FINRA Foundation has many strengths that we bring to the table. Almost everything we do is research-based. We have strong credibility. We have been around since the 1940s as the National Association of Securities Dealers. FINRA regulates the securities industry, but we are overseen by the Securities and Exchange Commission. Anyone who sells stocks, bonds, mutual funds, or publically traded real estate and investment trusts is regulated by FINRA.

Gary and I both work for the FINRA Foundation; however, the Foundation is a completely separate entity that issues grants to study certain financial behaviors and outcomes. We have targeted projects that try to reach certain groups, one of which is the military. Our research is unbiased. We have nothing to sell, in fact we cannot sell a product to a servicemember even if we wanted to. Even though we are not a government organization, we perform a regulatory function in much the same way as government organizations do. We do not allow any commercial advertising or follow-up on our website or print products. We think that policy gives us a certain level of credibility when it comes to working with the military population.

I spent a career in the Coast Guard and my last job was the Chief of Recruiting. I was brought up in a middle-class family with five kids. My dad was a steel worker outside of Philadelphia and there was not a great deal of money to go around. My family did not expect me to provide for them after I left home, which is in contrast to what I saw in my recruiting days.

During my Coast Guard career, I was around sea service people for nearly 25 years. I talked to recruiters about the challenges of convincing young men and women to join the military services in the late 1990s when the economy was very strong. I ran into a number of real world challenges. For example, we take direct deposit for granted now, but to a 17-year-old young woman and her family who never had a bank account, this was eye-opening. One of the activities recruiters had to do with young prospective recruits was go to a bank or credit union and open accounts for them and set up direct deposit for their paychecks. Some banks required co-owners on the account if the individual was not of age, that is to say, they were not yet eighteen. One incident I remember involved an uncle who was a co-signer for a new recruit. He proceeded to empty the individual's account while they were going through basic training. Just as quickly as the money was deposited, the uncle was taking the money out. We have to keep in mind when we are dealing with individuals and their finances, they may not have the same frame of reference that we have.

The FINRA Foundation's Military Financial Readiness Project was launched in 2006 and was paid for by an organization called First Command. That seed money led to the development of certain programs. We wanted to increase the awareness of the financial literacy tools for service men and women to help them manage their money with confidence. We partnered with the White House Joining Forces and even though the Department of Defense (DOD) does not call us partners anymore, we do collaborate with them. I would like to mention Rosemary Williams and an organization called MilCents that is the Military Family Advisory Network's new social learning program targeted at military spouses. Milcents incorporates some non-traditional ways of learning financial literacy that show promise for the future. I would like to thank Rosemary for her support of the program.

The Foundation does other work that is important. For example, we provide fellowships for military spouses. Military spouses have trouble maintaining employment when they travel around the world with their husbands or wives, especially

overseas. These fellowships lead to credentials such as Accredited Financial Counselors (AFCs). I am proud to say that the Consumer Financial Protection Bureau has hired several counselors to work as financial coaches. Spouses may also find employment with other organizations on base or off base working in the financial industry. Our spouse fellowship program has provided more than 1,360 fellowships and nearly 500 military spouses have completed the AFC program. They are working in the military community, and have donated more than 400,000 hours of community service in their practicum challenges leading up to their certification. It is a program that we are very proud of. We also offer training to the Personal Financial Managers (PFMs) for the military to maintain their AFC credentials.

In addition, we provide a number of print and online publications, for example, *Money and Mobility*. People have asked me how we help get the word out about some of the financial literacy requirements that are available. *Money and Mobility* was started in cooperation with the National Military Family Association and the National Endowment for Financial Education. Over 1.16 million copies have been distributed since 2006. PFMs working with the services take advantage of some of these resources. We also offer a guide for disabled service men and women so they can learn the best way to utilize the financial resources that are provided through their disability benefits and how to coordinate their benefits with other sources of income.

The PFMs can choose from a suite of training topics. This year included the financial check-up, which is basically, "Let's go over the basics and bring you up to speed for anything that has changed in the financial world." For example, when people get married, what financial effect does this have? When they get divorced, what financial effect does it have? Changes in one's marital status can have a big effect on money and is sometimes eye-opening to PFMs, let alone the servicemen and women.

Information on military housing and mortgages was very popular during the downturn of the housing market. How can I handle an underwater housing situation? What is the Home Affordable Refinance Program and how might it help me in the military? What other changes affect the housing situation in the country? We see the effects of the military drawdowns on servicemembers and their families. Many people who have been or will be separated were not planning on that outcome. It is especially important for servicemembers to take advantage of information that may help them.

Our website, saveandinvest.org, has a complete section devoted to the military and to military financial educators. Tools available on the website are provided free of advertisements or commercial offers. There is no follow-up solicitation and all the materials, whether print or electronic, are provided free of charge, including shipping costs. All tools are provided by the Foundation. PFMs and spouses can take advantage of information any time they wish.

We also entered an agreement with the Fair Isaac Corporation (FICO), the provider of 90% of the credit scores in the country, to underwrite the cost of the FICO score for currently serving service men and women. Service men and women can access their FICO scores directly through their Personal Financial Manager on an installation. If they do not have access, because they serve in the Guard and Reserve or they are overseas, they can come directly to us and get their credit score free of charge. We have provided nearly 250,000 credit scores since the program was initiated.

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We need to understand that certain servicemen and women may be the only people who have a steady income and feel a responsibility to provide for their extended family.

In the future, we will focus on the entire force. We are working to financially empower not only currently serving men and women, but also their families. We will continue to work with the organizations that I have discussed including the White House Joining Forces and the National Military Family Association. We also place financial literacy information in national and military libraries. We are going to help servicemembers ease their transition back into civilian life because we know many will be separating. We will also prepare for the coming changes in retirement and compensation that will take place as a result of the National Defense Authorization Act of 2016.

I will now mention several things for which we do not have much research support. In my travels around the country and the world speaking to soldiers, sailors, marines, and airmen and members of the Coast Guard, I have had some surprises. One surprise is medical debt. What are the causes of medical debt in the military? We know that some servicemembers come into the military with medical debt. For some, it may be the reason that they entered the service. One of the sources of medical debt is orthodontia. The TRICARE benefit for orthodontia is relatively low. If you have a child or, perhaps, you have had orthodontia treatment, you know that the expense can easily run into five figures and sometimes more. Orthodontia care has a significant impact on servicemembers with children who may need it. In addition, many servicemembers are in the prime child-bearing and child-rearing years and some require infertility treatment. If couples cannot get the results they want within the TRICARE system, they will often go outside the system to seek care. Infertility treatments can be very expensive. Also, mental health care that is sought outside of the military system can lead to significant medical expenses. Whether it is the servicemember who wants to keep mental health care from the command or whether the spouse does not want to go into the military treatment facility, mental health care can drive up medical debt.

The relief societies gave examples of service men and women supporting their extended family. I spoke to a sailor who was stationed in Japan, who was making fairly good money with his cost of living allowance, yet he was going broke every month because he was sending so much money home. I asked him why he needed to send money home and he said that his mother needed a car so he bought her a new car. We need to understand that certain service men and women may be the only people who have a steady income and feel a responsibility to provide for their extended family.

DR. MOTTOLA: Good morning, it is great to be here today to talk about this very important issue with such an engaged group of stakeholders. We are happy that we have some data to contribute to the discussion. The data I will discuss is from the National Financial Capabilities Study, which is an ongoing large-scale research project with the goal of benchmarking financial capability in America. I will present a military component and a civilian component. The military data consists of 1,300 observations across active duty, activated Reserve and Guard, and non-activated Reserve and Guard. This data is from 2012 and is weighted to match the military population. We recently came out of the field collecting the 2015 wave of this military study, so in 2016 we will have updated data on the financial capability of servicemen and women.

Now I want to take a look at the data and talk about simply making ends meet, just the basics. For example, can you pay your bills? Forty-one percent of military respondents find it very difficult to meet their monthly expenses. Four in ten find

it “somewhat” or “very difficult” to meet their monthly expenses. Eldon Mullis, from the Army Emergency Relief Society, pointed out that 21% of servicemen and women across ranks spend more than their income. The opposite side of that issue is that 79% spend an amount that is less or equal to their income. Is there a problem with people spending more than their income? Yes, because one in five are clearly spending more than their income. However, at the same time, a large group of servicemembers are spending either within their means or just at the cusp of their means.

Some servicemembers get into trouble on the debt side of the equation. Sixty-three percent have auto loans and 52% have credit card debt. These numbers are nearly double the figures seen in the civilian population. In addition, a significantly larger proportion of military servicemembers have student loan debt. Servicemembers tend to use alternative financial services (AFCs), also called non-bank services, like pay day lenders and pawn shops more than the civilian sample.

I am presenting data and some national figures for benchmark purposes. During the discussion today people have brought up the question of what is happening in the civilian world. We have to keep in mind that the demographics between the military and civilian worlds are very different. For example, approximately 20% of the military is female while about 50% of the nation is female. About 75% of the military are millennials while 32–33% of the national sample are millennials. There are also large age differences. As a result, the comparisons between the military population and the national population are needed only from a benchmarking standpoint. We have to be careful since some of differences that we see could be driven by the demographic differences and not necessarily by differences in military culture or military lifestyle.

With regard to debt, 53% of respondents are concerned that they have too much debt. Having dependents adds an additional strain. Children are expensive. About 60% of the military are married and if you split out those married households between those with dependents and those without dependents, we see that dependents can impact financial behavior and the financial situation. Fifty-five percent of servicemembers with dependents have mortgages, and 42% of those without dependents have mortgages. Twenty percent of military households with dependents have unpaid medical bills compared to 6% of households without dependents. The households with dependents are using alternative financial services at a greater rate than those without dependents (34% versus 20%) and they also have problematic credit card behaviors (33% versus 18%). These figures are not surprising. This quantitative data shows how dependents can affect the financial decisions and the financial pressures that families are feeling.

We explored a concept called financial fragility — a measure of liquidity. We asked, “How confident are you that you could come up with \$2,000 if an unexpected need arose within the next month or so?” Seventy-eight percent of the military sample said they could come up with the money if an unexpected need arose compared to 56% of the national sample. We did not ask how they would get the money. The money could come from an advance on a credit card, it could come from a friend or a neighbor, but the point is that most military servicemen and women can do that. This is a promising finding. We are doing subsequent research to learn where the \$2,000 is coming from. If it is coming from payday lenders or pawn shops that could be a problem. We also asked, “How satisfied are you with your current financial condition?” Thirty-four percent of the military said they were “very satisfied” with

Servicemembers tend to use alternative financial services (AFCs), also called non-bank services, like pay day lenders and pawn shops more than the civilian sample.

Notice that 21% of military families reported spending more money than they have, but 41% say they are having difficulties. Is this an issue of financial availability or distress related to how one spends money?

their financial condition. That number may look low on an absolute basis. About one-in-three in the military are “satisfied,” but in the national sample only 24% are “satisfied.”

Another important issue is housing and I have three measures to discuss. Forty-eight percent of the military sample are homeowners compared to 58% of the national sample. Ten percent of the military sample have faced foreclosure compared to 4% of the national sample. In 2012, we asked, “Could you sell your house for more than it is worth, for more than the mortgage?” Thirty-eight percent of the military sample said they could not compared to 14% in the national sample. This could be due to a number of factors. Military personnel have frequent changes of assignment and servicemen and women are often not able to choose the time to buy or sell a house. They are constrained. Civilians may be able to time the market better. The foreclosure figure caught my attention for two reasons. First, 10% in the military have been foreclosed in the last two years, and this figure increases for certain sub-segments of the military. Four percent of the national sample have been foreclosed in the last two years. Second, some of the papers that were on the Forum website showed a link between foreclosure and suicide rates. This is a particularly relevant point. Any links between foreclosing and unhealthy behaviors is something that we will want to look at more closely.

Bill Skimmyhorn, who is an economist at West Point, has done some research for the FINRA Foundation using the data set that I am talking about today. In one of his papers, that is on the Forum’s website, he shows that the Army had a much harder time financially than the other branches of the military. Thank you for the opportunity to speak with you today.

DR. URSANO: I want to highlight some of the points that Bud and Gary made. First, notice that financial education materials are widely available. There are questions of access and whether resources are being used. Second, notice that 21% of military families reported spending more money than they have, but 41% say they are having difficulties. Is this an issue of financial availability or distress related to how one spends money? Third, paying for medical care, costly credit card use, and the provocative finding about foreclosure and underwater housing are all of interest to us as we think about our military populations.

DR. SCHOOMAKER: Is the national survey data that you presented adjusted for age, sex, and employment, or was it completely random?

DR. MOTTOLA: It is adjusted to match the population of the United States, but we weight rank and gender.

DR. SCHOOMAKER: Can you think about that as a risk factor when we adjust the suicide rates, but not necessarily the mortgage default rate?

DR. URSANO: The question of matching samples lies embedded in this issue. The absolute value of these numbers stands out.

DR. KESSLER: Gary said that some of the differences he found could be differences in the composition of the samples. For example, the military population of young, single males has a different education distribution than the national population. You could use your national sample and do an apples-to-apples comparison. That seems like a very smart thing to do.

DR. MOTTOLA: We tackled this in two ways. We pulled out 18 to 25-year-old males from the national sample and 18 to 25-year-old males from the civilian sample and compared them. More importantly, Bill Skimmyhorn ran some multiple regressions controlling for important variables like income. Bill found that credit

problems persisted even after controlling for demographic variables. He also found that the military was doing better on saving money than the civilian population. However, he did not look at foreclosure rates.

I agree with the recommendation that we should go back and adjust for demographic variables and look at the relationship in the foreclosure rate. When we did the 18 to 24-year-old comparison, the foreclosure rate was 10% in the military and 7% in the national sample. That was done controlling for only two different variables. Your point is very well taken.

DR. KESSLER: It is important to highlight what Gary just said. If you look at foreclosure in the military, it was 10% and it was 4% in the national population. If you look at the segments of the population, including gender, it is 7% versus 10%, indicating that half the gap was closed just by taking out that one variable. Remember that in your first survey you had 700 people in the military. In the second survey you had 1,000 in the military. What percentage of 1,700 people will be in foreclosure? We are talking about 170 people. This will have a large standard error. That is the one down side, but the rest looks pretty good. Most civilian employers do not offer all these resources to their employees like the military does. The civilian employer does not beat the bushes in the way that the military does to make people aware of resources. There is a great deal of good news here.

DR. URSANO: There is a great degree of resilience built into the military system with resources that are not present in other systems. Ron's comment reminds me, as we think about the questions of behavioral adversity, suicide in particular, but also other behavioral outcomes, we are trying to understand the relationship of financial stress, financial burden to suicide or alcohol or depression, over time. Suicide rates increased in the Army between 2004 and 2009. How has financial stress contributed to the story or, even more broadly, how does this inform our thinking about the whole area of research of adversities and how they impact on individuals and families? Financial stress is just one adversity. One can use many of the concepts and models we are talking about as you choose to study any given adversity and think about how it echoes through the web of a life and the final common pathways or any common pathways that are involved.

DR. URSANO: I am pleased to introduce another good friend, Stevan Hobfoll, who is The Judd and Marjorie Weinberg Presidential Professor and Chair, Professor of Behavioral Sciences, Medicine, Preventive Medicine and Nursing Science in the Department of Behavioral Sciences at Rush University Medical Center. Many of you will know that Stevan is particularly noted for the concepts he brings around the perspective of understanding stressors and resource conservation.

DR. HOBFOLL: I want to thank Bob Ursano for organizing this productive and unusually creative Forum. Productive and creative are not always correlated. I have some reactions to what I have heard earlier today. There are incredible resources and areas to be proud of in terms of programming, although I have a few problems with the way they were presented. Many of you come from a military background and one problem with a military background is that you guard your center and protect your flank. It also means you ask no questions and you show no weaknesses. I would like hear, amidst all the incredible strengths, what open questions you have, where you think failures are occurring and where you need answers. This is difficult and a military background grinds that out of you and being within a broader contingent military context makes that difficult. I am now a civilian. I was an Air Force dependent. My wife was a Captain in the Air Force and I was a Captain in the Israeli

Suicide rates increased in the Army between 2004 and 2009. How has financial stress contributed to the story or, even more broadly, how does this inform our thinking about the whole area of research of adversities and how they impact on individuals and families?

Individuals — that means all of us and our organizations — strive to obtain, retain, foster, and protect the things we value.

Defense Forces, which was an entirely different experience. I want to emphasize that I am amazed at the programming there.

I am going to talk very briefly about resilience, resource caravans, and passageways. The idea is that resources are not individual. They come in a package. You cannot speak about financial resources without talking about unit viability, command structures, command strength, and troop morale. On a personal level there are things like a sense of hope, your marriage, your relationships, and on a behavioral level, factors related to your stability and factors related to your instability such as drinking, alcoholism and gambling. The other point is that these factors exist within passageways. We create environments that capture and control our behavior. If the individual behavior is widespread, it is a reflection of a structural factor, or a passageway that you are forcing, creating, or selecting.

Conservation of resources (COR) is a concept I have developed over the years which, in a recent network analysis, has been cited many times. I will talk about some glimpses of the theory. Individuals — that means all of us and our organizations — strive to obtain, retain, foster, and protect the things we value. Consequently, we are always in the process of cultivating resources. Even when stress is absent we are collecting personal, social, material, and relational resources. When the threat of resource loss occurs, people mobilize their resources to offset limits or reverse impending or actualized loss. In other words, when a loss occurs, a way to exaggerate this is to say we kind of forget everything else and become loss-focused. Therefore, intervention must aid resource cultivation and protection, which many of these programs are certainly doing. If we wait for financial loss and accompanying losses to occur it is, by their very nature, difficult to reverse them. I am not talking about the individual, single kind of financial problem, but the financial problems that are multiple and chronic. These losses become extremely difficult to reverse.

COR theory says resource loss is disproportionately more salient than resource gain. I cannot emphasize this enough. Our brain barely registers gain. One insult is remembered from childhood until death. Once a sense of failure occurs people do not forget it. A job loss is never forgotten and people will ruminate over a divorce for the rest of their lives despite entering into a positive marriage later. This also means that when financial losses or lack occurs it overshadows the positive elements of the servicemen's and servicewomen's experience. It becomes their experience and so much of our personal, social, and cognitive resources become enslaved and indentured working out this area of loss.

People must invest resources to protect against resource loss, to recover from losses, and to gain resources. For military personnel, I want to underscore that resources are often inflexible, limited by place, status, or situation. There are so many things that servicemembers are not allowed to do. We just exited an era where we had hundreds of thousands of service personnel engaged in combat and other military operations. When you are engaged in combat you have a limited amount of time to solve your financial problems. When you do not have enough time to problem solve, we know that these things increase and begin to cascade. We also know the suicide rate cascades for those who have had multiple deployments.

In my home I have a group of twelve elite soldiers and agents from the same battalion force of another country who have had multiple deployments. They are visiting to honor one of their comrades who died in the field. They are all divorced and have had, or are going through financial problems. They all have a history of

drinking problems because that is how they were coping. Twelve elite soldiers make a great deal of difference in a battalion. If the top individuals are having these kinds of problems then you can see how the capability of battalion strength becomes challenged. I point this out because of the potential cascade effect, although this example is extreme with 12, 15, 18, and 25 deployment mission soldiers.

Resource gain becomes important in the context of resource lost. This is an important principle. It may seem counterintuitive, but when you are in the midst of a loss, it also creates possibilities of solutions and gain. The loss becomes an opportunity for intervention. Resource arrays and caravans based on financial stress become a symbol for several things like lack of self-worth, lack of self-efficacy, and failure of hope. Even if the force is intact but I am no longer intact, then the military has failed me just as I have failed the military. This places burdens in both directions that are critically important. For all of suicides or rare events, you can see the connection to alienation, ultimate loss of hope, and then the ultimate act of the loss of hope, which is suicide. It also questions whether I am a valued member of a tribe because that is inconsistent with financial distress and the belief in future structures, especially if military bureaucracy and the realities of deployment are what prevented me from being able to find solutions, such as being able to sell my house when the military moved my family.

When my wife was deployed, I went with her. A three-year deployment impacts a year and a half of employment for the spouse because you have the first X number of months getting your certifications, finding a job, getting a job, and ramping up your work. You cannot have a business. Forget entrepreneurship since that would be impossible. Then you have six to nine months of unwrapping to prepare for the move. This describes a minimal structural overview of what happens during a deployment.

Another corollary of COR theory states that because we rely on resources to offset loss and because stress results from loss, at each iteration of cycle there are fewer resources to rally in defense. First I experience financial stress, and then I experience emotional distress that leads to relational distress, and then increased drinking and a lowered self-esteem, and finally a lowered sense of self-efficacy. We can see how a cascade of a cycle is created. Hence, initial loss begets future loss, making those depleted resource reservoirs particularly vulnerable.

We heard about the vulnerability of being able to reach out. Loss cycles also gain momentum over time. Psychology tends to avoid the speed of these things. Financial loss at time one is slow speed. Financial loss at time ten gains speed when family problems and all these other things are in motion. This implies that any intervention must be early and powerful. Superficial or minimal interventions have little or no effect and often backfire. It is very different if you are talking about the one-shot problem.

The military selects men and women who are high in sensation seeking because sensation seeking is related to military competence. This is the kind of person you want in the military, but sensation seeking is also related to poor impulse control and poor financial decision-making through both direct and indirect paths. We have chosen a group that is, by their nature, more vulnerable than the average. Financial stress cascades to personal, social, and conditional losses with increasing intensity and speed. Financial stress often is a consequence of relationship distress, alcohol abuse, family dislocation, poor education, and gambling. Intervention must attend to these predisposing and post-financial crisis factors.

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How do we think of loss cycles and do loss cycles have different types of interventions than individual loss moments or events?

Financial distress is linked to health and Traumatic Brain Injury (TBI) and PTSD. It is important to point out that TBIs and PTSD both cause deterioration in functioning such as the ability to make good decisions. Remember, we have a group that came in high on sensation seeking and therefore low on impulse control, on average. Those that developed PTSD or TBIs become less able to manage impulse control and to manage the difficult decision-making that goes into finances and relationships. TBIs and PTSD also increase aggression, which also causes deterioration in relationships, which may affect families.

If financial stress is common, there must be structural elements that promote it. To inhibit caravan passageways, you can do some very basic things. For example, you can challenge three-year deployments as opposed to the regimental system where you are linked to a military home. We must also look at the other structural factors within the military that are promoting the problem. At the same time, the military is very committed to solving the problem. The military cares about all their servicemembers. However, there are policies in place, if you look at them, which are in direct opposition to that conclusion. These policies might exist in the category of "status quo" or "sacred cows." They have to be examined if we are going to solve these problems.

By way of disclaimer, Bertrand Russell said that everything that is worth stating is worth overstating, and I do overstate some of my points in order to draw attention to them because they tend to be points that we sweep under the rug.

DR. URSANO: Thank you, Stevan. I appreciate the provocativeness. We need some sparks. I would remind people, again, to think of Stevan's comments around the question of predisposing factors, and the question of gaining momentum with loss cycles. How do we think of loss cycles and do loss cycles have different types of interventions than individual loss moments or events? Does recovery take longer after a loss? What are some of the intervening factors of great interest to psychological interventions around the question of financial stress and its relationship to self-esteem, self-efficacy, and experiences of hope and loss of hope?

The last member of this panel is Shelley MacDermid Wadsworth, who is Professor, Department of Human Development and Family Studies and Director, Center for Families, and Director, Military Family Research Institute, and Executive Director of the Family Impact Institute at Purdue University.

DR. WADSWORTH: Much of what I will say will be a review of what you have heard this morning, but there are a few things that might be new. I would like to acknowledge Jim Hosek, who co-authored a chapter with me in a recent edition of a publication entitled, *Future of Children* that focused on military families. I also am involved in an evaluation project now working with both the Army and the Navy in regard to financial literacy.

When we think about families and financial issues, there are three questions that we can think about. There is a legitimate question about whether families actually have enough money to do what they need to do. There is also the possibility that they do have enough and they make bad decisions, or they have enough and circumstances overtake them. Economic hardship, financial stress, and financial problems are different. They are not all the same thing. You can have economic hardship, but not be distressed by it. You can have financial problems and not be distressed by them when maybe you should be. You can also have financial stress that is tied to both economic hardship and financial problems. For the purposes of this talk, I am going to assume that these are imperfectly correlated with each other. I will not

use the terms interchangeably and I am not going to try to unpack circumstances where one occurs without the other. I am talking about all three questions at once.

To reiterate what others have said today, the average military compensation today compares favorably with compensation in the civilian sector, particularly when you take both pay and benefits into account. With the new revisions affecting compensation, there are some things that may change that circumstance. For example, over the last 15 years we have seen the eradication of out-of-pocket expenses by servicemembers for housing. Now there is a discussion about taking that back up again to about 5 percent. When I first began doing military work, I believe the out-of-pocket percentage was 19 percent. That was eradicated over the succeeding years, but is now, perhaps, retrenching.

Military spouses, on average, earn and work significantly less, about 20% less than their civilian counterparts. That is a structural under employment problem because of mobility. The Department of Defense (DOD) has many programs and efforts to try to counteract this problem. To the question of whether families have enough money, there are interesting data sources that can be informative about this question such as the consumer expenditure survey. In 1999, the active duty survey included a number of questions related to the family budget where you could do some crude, but interesting, side-by-side comparisons.

I did a report years ago looking at expenditures between military personnel and civilians. We compared family self-sufficiency budgets, which are intended to be definitions of the absolute floor of what a family would require. Those findings are out of date now because everything has changed. However, the story at that time was that, in general, military families did have enough money, but there were pockets of pain in some configurations. I suspect we would find something similar today. Families where you have multiple children, families where you have single jobs, families who live in expensive locations are the ones that are the most likely to be on the edge. It could be instructive to redo those analyses with fresh data to see if the story has changed. One of the things that became evident through doing those reports is that the amount of debt that servicemembers have when they enter the military seems to be increasing. People are not arriving on flat ground. They are arriving in a hole. That bears consideration in the future. Their financial picture is not just a function of their current expenses and their current compensation, but also the debt that they may have arrived with.

There is typically a financial shock when people leave military service. Over the course of a career veterans do well compared to civilians, meaning those people in the civilian population without a veteran history. There were interesting changes over the last 13 years. Data from 2002 shows individual financial problems, specific things like missing payments and bouncing checks, were reported by 45% of the respondents. In 2010, that figure was only 25 percent. However, the overall financial condition has changed less (from about 25% in 2002, to about 15% in 2009, and about 17% in 2010). This suggests that there may be some unmeasured aspects of financial well-being that are not being captured. There is the notion that compensation has improved and that these problems perhaps should have improved or gone away. Maybe not as much as we thought though, since there are some unmeasured things that we have not routinely captured.

Someone pointed out earlier that children are expensive. Data from the Military Family Life Project indicates that for mothers who report that they are having trouble making ends meet, the percentages are higher. When they have children who

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are preschool or school aged, the figure is about 16%. Teenagers are more annoying, but apparently less financially challenging. Still, families with adolescents are reporting somewhat more financial difficulty than people with no children, about 13% compared to 12%, respectively. Children represent one of those overtaking circumstances or perhaps indicate a bad decision in terms of when to have children. Children certainly could be part of the caravan of risk because they bring all kinds of things with them in terms of consequences, as one of the earlier speakers pointed out.

I want to emphasize that there is quite a bit of evidence that financial strain is a chronic and corrosive stressor in families. It enters families often through individuals who become distressed by their financial hardship or their financial problems. It travels into marriages, promotes conflict, hostility, and a negative environment that flows into parenting. A wonderful report by Glen Elder years ago about children of the Great Depression is an object lesson in how this happens, but a more recent work by Rand Conger in Iowa documents this flow through families and these corrosive influences.

In the Military Family Life Project we did a very crude analysis, essentially a logistic regression. This is correlational data, not longitudinal. Here is a nice illustration of what Stevan Hobfoll was talking about in terms of caravans associated with increasing odds of reporting financial difficulty. People who have low pay grades, people where the spouse is unemployed, people who have had difficulty readjusting to return from deployment, which in some cases will mean difficulty reestablishing employment, and people who are dealing with wounds or special medical needs are all associated with increased risk of financial problems.

On the positive side, there are things that are associated with lower risk of financial problems in families where: spouses are employed or more educated, money is put aside each month, there is five hundred dollars or more in emergency savings, social support is higher than average, the service member is female, and the family is enrolled in the Exceptional Family Member Program. Again, the causal order cannot be determined here, but I do not think there are any surprises in these findings.

Finally, I would like to speculate about some things that we have not talked about very much today that I think might be relevant to consider as we try to solve this problem. This relates specifically to issues about bad decisions or perhaps our impression of bad decisions. Saving and planning require the ability to imagine a future, to have a perspective about the future and imagine one's self in it. As it turns out, this is one of the last cognitive abilities to develop in humans and it has become painfully apparent to me as a college professor that many college students do not have it. They have not completed their development. They find it difficult sometimes to project themselves into a future and, of course, people who are entering the military are the same basic developmental age. If you cannot do this, it makes it much harder to do what is necessary to avoid financial problems.. In addition to this developmental problem we have a generational problem where most of the people who are designing financial education and delivering financial education in our society are of different generations than the people who have the financial problems. This is particularly true in the military. This, of course, is a very crude and broad generalization and I am sure there are instances where it is not true.

It is also important to think about prior experiences. Work by Dr. Ursano and Dr. Kessler and others have suggested that preexisting risk factors, before people entered the military, explain much of what happens in the aftermath of deployment. There is data that is persuasive to me that service members are entering service with

higher than expected prior exposures to a variety of negative experiences. Anecdotal information will tell you that some people join the military to change the course of their lives, sometimes with regard to troubled families. These are not poor families, which is often an assumption, but families that are troubled in a variety of ways. If you have grown up in a troubled family, it is very likely that you will be at risk for not having a great sense of confidence that you can control your future. People who grow up in troubled families have a great deal of difficulty imagining that anything they do might matter. For example, it is hard for them to imagine that they can change the course of their lives. Joining the military might be a very constructive step in that direction, but their journey might be incomplete. It is something that we need to think about and consider.

Hidden costs are something that we have heard about this morning. These are costs that are not taken into account when compensation decisions are made. We have heard about medical debt, infertility treatments, and orthodontia. We have heard about real estate problems because of inflexibility when houses can be sold. We know that many permanent changes of station are actually two-hop moves, not just a single move. These are hidden costs that may change the balance sheet in ways that servicemembers did not anticipate and that compensation programs do not take into account.

Finally, middle class values — I wonder but do not know, whether there is a social class issue here. Statements about saving, planning, controlling your future, what you should put away for retirement, what you should spend on a car, what you should buy when you have discretionary income, all convey values, and sometimes they are middle class values. If you put money away today you will have something for tomorrow. If you delay gratification for this you will get something later. Servicemembers, particularly young enlisted servicemembers, are functioning in a working class environment. They may or may not come from a working class environment. We do not always know. Middle class values also include things like shame with regard to financial difficulty. Some thought around social class issues and social stratification might be well-placed here as we think about financial difficulties and how to address them. Thank you very much.

DR. URSANO: Thank you, Shelley, for a very thoughtful presentation and one that brings in, not surprisingly, a developmental perspective in several areas. Remember the effects of the presence of children and the number of children. Remember whom we bring into the service and whether or not they are on a developmental growth path. At least some of them may have come into the military to change their life and are still on a developmental path, what Shelley referred to as the future time perspective. Remember the multiple values that are present in our population and to look not only through middle class eyes as one thinks about what is important in terms of buying in a given moment. If one thinks that one has money today and may not have money tomorrow, what is the perspective on an entire lifetime? How does that influence behavior in the future? The outcomes in that setting may be very different. Which group is thinking about which stressor? Shelley and others referred to strain rather than stress, meaning present over time rather than in an emergency, or impactful event.

Savings and planning require the ability to imagine a future, to have a perspective about the future and imagine one's self in it. As it turns out, this is one of the last cognitive abilities to develop in humans.

PANEL 2 DISCUSSION

Moderator: Robert J. Ursano, MD

DR. URSANO: We are open for discussion and comments.

CAPT. ELENBERG: Dr. Wadsworth, when we are looking at the financial health of our population I think about tools that already exist, especially through our Comprehensive Soldier and Family Fitness program. We have asked our servicemembers many questions. You presented measures of financial fitness that looked at positive and negative factors. The measures pointing toward negative financial fitness are potentially easily translatable into questions that could be answered. What are your thoughts on this line of thinking?

DR. WADSWORTH: This is not longitudinal data. If you have five hundred dollars or more in an emergency fund, does that mean you are protecting yourself from financial fitness or does it mean you are already protected? Getting these factors in their right causal order is very important. Nonetheless, there are some good insights here. I think about the reasons that people end up in difficulty. A more interesting analysis that is less crude would be to do some more specific predictions of these kinds of things that build in characteristics of individuals or their families. For example, the Military Family Life Project was very well designed and had other measures such as psychological well-being. We could do those analyses.

CAPT. ELENBERG: That is what I was suggesting. We want to translate what we are talking about today to the ability to do something about it because we have great resources..

DR. WADSWORTH: Yes, you do.

CAPT. ELENBERG: Who knows about them? Who needs to know about them more immediately? If we could look at the aggregate population data of units and correlate it back to the questions that address many of these things — psychological health, number of people in a family — that could answer some of these questions. We might be able to do some causal modeling that gets to predictive analysis to say, “Okay, you know what, this unit could really use some re-education of the services that are provided.” We could either do a preventive or a just-in-time response to our population.

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Servicemembers are afraid to ask for help. Asking is embarrassing and they do not want leadership to know they have asked.

DR. WADSWORTH: You have quite a bit of the data already that you would need to do that.

CAPT. ELENBERG: Exactly.

MS. MCCLELLAND: Shelley, I was glad to hear your points about the quality of the financial education being delivered as well as how many millennials are in the service. The non-millennials are the people designing the education. For the most part, those two groups do not usually go together well. Anecdotally, I have found that the people who are delivering the counseling have a different personality type and value orientation than the people that need the counseling the most. It is hard to get two people to come to the middle and have a productive conversation if the differences are not attended to by the person delivering the service. Have you done any work or seen any findings on this issue?

DR. WADSWORTH: This is very much a part of the project that we are doing now. We are in the middle of it, so I cannot say anything in terms of findings. However, I will share one impression, which is that the people who are delivering the training are generally thoroughly trained, incredibly motivated, very dedicated, and generally pretty smart about their audience and the content that they are delivering. There is a demographic difference between the people who are giving and receiving, but you could say that about every doctor in the military. Most of the doctors are of different generations than the servicemembers they are serving. It is not unique to this sphere. However, it is also true that this education is delivered in challenging circumstances. Part of what we are paying attention to are the things that might interfere or facilitate the effectiveness of the education and the circumstances of delivery.

MS. CONNOR: I run the Navy-Marine Corps Relief Society in Bethesda. Linda Eigentowich made the comment that people do not know about the Air Force Aid Society. They also do not know about Navy-Marine Corps Relief Society or Army Emergency Relief. Servicemembers are afraid to ask for help. Asking is embarrassing and they do not want leadership to know they have asked. These are servicemembers trained to take care of me. They are the ones who are saving the general population, whatever their job may be. They have been trained to be tough and strong, and self-preserving. Now they have a problem and they have put their heads in the sand for many weeks or months, possibly even years. They do not know how to ask for help and they are embarrassed and afraid. They walk into my office with their tail between their legs resisting interaction that is necessary to seek help. They know they need help, but they do not know how to ask for it. How do we break down the barrier to help the person who takes care of me let me take care of them?

CAPT. ELENBERG: Interestingly enough, we learned something from Marlboro. I was at NIH for a conference and what we learned from Marlboro is how they influence behavior and teach people to smoke or encourage them to smoke using technology like geofencing and geotagging. That speaks to the generational gap that you were talking about. For example, individuals who like to smoke can get a coupon when their cell phone says, "allow." That is called geotagging and geofencing. Large companies, like Marlboro, are tracking individuals so when they go to or get close to where a desired behavior may occur, they can send out a positive reinforcement message to their cell phone that says, here is a coupon to buy tobacco at a discounted price and this coupon is going to expire within X number of minutes. It is almost like gamification. It creates a sense of competition in some ways. Can I get this done within X amount of time? It gives a person a sense of positive reinforcement and reward for a behavior. It is a very interesting process.

We talk about delivery of our materials on a website, but many people do not go home and boot up a computer anymore. If we want to reach them, we have to meet them in their life space with tools that they use all the time whether it is text messaging, downloading apps, or other technology. Maybe what you were talking about is having the right subject matter expertise. We have the right material. How do we reach the new generation? We probably can learn a great deal from the companies that are encouraging the things that we do not want to have encouraged.

DR. HOBFOLL: We certainly want to look at solutions, but first we have to look at the problems. I had a large grant that was stopped in order to work on combat resilience because the military was ramping up a fighting force very quickly. I do not know how much time and attention servicemen would have for financial counseling under these training time constraints. For example, when I was an officer in the Israeli Defense Force we spent two years training on something the U.S. Army was doing in three months, and doing it amazingly well. Training was very compressed at that time. In order to ramp up, because of the manpower and womanpower demands of war, we lowered the standards with some negative consequences. This vulnerable group that came into the military performed better than they should have. They did wonderfully well, but they are still a vulnerable group.

At the same time, we have a VA system that has been under scrutiny and, in the newspapers, has been called a failure. This created a lack of trust at a critical time. We want to keep all these large factors in context as we develop interventions. At the time of the ramp up there was tremendous resiliency built into the military. All these things have to be discussed to recognize where the problems occurred before we can begin addressing them.

DR. MOTTOLA: One more thought on financial stress. There are aspects of military life and culture that contribute to success financially and there are aspects that work against it. For example, the programs such as full employment, health care, financial education programs, and others that the Army offers all work to help. At the same time, there are military bases where people need cars. Maybe that is driving up the numbers of auto loans. We need to keep in perspective that it is a mixed bag in terms of what is helping and what is hurting. The only other point I will make, and we have not talked about it yet, is that financial literacy in the military is actually fairly high, significantly higher than the civilian population. To the extent that knowledge is playing a role is a factor that can help military personnel as well.

DR. URSANO: Good points. One of the things I heard in the discussion comments is the importance of the historical context and the great resilience that one can speak of given the challenges that have been present in recent years, both war and financial challenges. That says that what we should be thinking about is not the past, but who has the crystal ball on the financial picture in the nation a year from now, or two years from now. Who has the picture in terms of the change in force structure that is presently occurring and will continue to occur? Tomorrow we will hear from Rob Bossarte from the Veterans Administration. The transition of this problem is about to occur in the veteran population as we increasingly downsize and face the shocking experience, as Shelley pointed out, of the transition of the amount of income available “in service” versus “out of service.” This transition may be a future area of concern. We have to look forward and not just backward. It is also our future time perspective as we try to think ahead to anticipate what is coming.

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PANEL 3: EPIDEMIOLOGY OF ADVERSITIES AND MENTAL AND BEHAVIORAL HEALTH

Speakers: Ronald C. Kessler, PhD and Matthew K. Nock, PhD

DR. URSANO: Several of us were talking about Jim Barrett's presentation during the break. You might recall what Jim said about losing a reward, followed by increased aggression in animals. That points to a fundamental neurobiological, potentially hardwired, genetically wired aspect of our behavior where something happens to increase activity when we lose a reward. Does that, in some fundamental way, relate to other issues of impulsivity and substance abuse? It certainly is provocative. Jim also said that when you suddenly lose a reward, for example losing a large amount of money, losing your house or your job, you increase variability. More things happen all over the spectrum. If we increase variability in everything, how does it get selected out? Is it context that chooses which particular piece of that variable behavior you will have?

In another conversation, we discussed Shelley MacDermid Wadsworth's presentation. We were thinking through the question that she presented about future time perspective. To what extent is future time perspective a critical aspect of financial management? People come in with a wide range of that skill, as Shelley suggested. Some of our most important people, who may be our heroes, come from environments in which they have very little future time perspective. Which groups do we need to help in order to grow their future time perspective; and for groups who already have it, does it matter?

Alternatively, we can think about disorders at risk for suicide and how future time perspective is an aspect of thinking about those different disorders. That may overlap with questions about the ability to make decisions that have to do with finances. We have chicken and egg questions. To me that is exciting, interesting, and provocative, and leads us to some interesting ideas about how we might go forward. To carry that ball, we have two of my closest colleagues who are deeply involved in Army STARRS (Army Study to Assess Risk and Resilience in Servicemembers) and the STARRS longitudinal study, Dr. Ron Kessler and Dr. Matt Nock.

Ron is the McNeil Family Professor of Health Care Policy in the Department of Health Care Policy at Harvard Medical School. I believe Ron is one of about

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four people in the world who are members of both the National Academy of Sciences (NAS) and the Institute of Medicine (IOM). He is the most widely published epidemiologist in the nation, and possibly the world. Ron has been key in the brain trust for Army STARRS, and he has been deeply involved in understanding these issues for the World Health Organization (WHO) around the globe.

DR. KESSLER: Thank you, Bob. I am going to discuss what we know about the epidemiology of the association between social class and mental illness. The association between social class and mental illness has been a topic of perennial interest to psychiatric epidemiologists. Despite this long history, there are still a great deal of uncertainties about three things. Today I will tell you about each of them.

The first is reciprocal associations, that is to say, does social class cause mental illness or does mental illness cause social class, or is there some combination of mix and match? The second involves aspects of the different constructs that are most strongly correlated, that is to say, what kind of mental illness is influenced by social class, and what aspects of social class are most important? Is it education? Is it income? Is it something about occupation, implying an intellectual piece? Or is it all financial? The third item is mediating and modifying effects.

First, we will address the issue of reciprocal associations. There has been a great deal of speculation over the years about this reciprocal relationship including what causes what. Is it mental illness that causes financial adversity or the other way around, or a little bit of both? A number of paradigms exist for studying those associations. Most of them involve making assumptions. For example, there is an epidemiological association I am willing to assume is close to an experiment, a quasi-experiment, and it can help me sort out those reciprocal effects. The Dohrenwend discrimination paradigm is one that has been used over the years. There was a paper in *Science* about 20 years ago about this paradigm. The basic idea is that if being mentally ill makes you drift into the lower class — as opposed to being captured in the lower class through no fault of your own, and that leads to mental illness — you would expect that the association between social class and mental illness would differ by segments of society, where there are substantial differences in discriminatory processes that force you into the lower class.

Particularly, Dohrenwend looked at blacks and whites. There are many black people who are competent, and they are in the lower class, having nothing to do with the fact that they were incompetent. They are just trapped in the lower class. Conversely, if you are in the majority group (white) and in the lower class, it is more likely that despite all the advantages, you drift downward. So in looking at low social class among blacks and whites, is the mental illness rate higher for the discriminated people (blacks) because it is not only being poor, but it is being discriminated against, or is it higher for whites because it is really the stronger drift? The answer is that it depends on what you look at. If you look at depression and anxiety, poor blacks have significantly higher rates than poor whites. That is what one would expect if social causation dominated. It is not just about being poor, but being held back despite one's competence. Conversely, there is a much higher rate of schizophrenia among low income whites than blacks. Note that there is no difference in the rates of schizophrenia between blacks and whites in the general population. However, there is a much higher downward income skew because the people who get pushed down are the people who are disadvantaged. When Dohrenwend looked at ethnic groups in Israel and various other countries, he found similar results.

The geographic instrument paradigm is another model to examine. Time series

analyses of unemployment rates, Harvey Brenner's famous work about time space variation in the unemployment rate, where no one individual's mental illness is going to cause the unemployment rate in Kansas to go up, therefore, if the suicide rate goes up at that time, it is almost certainly causation in one direction. Sure enough, there is a substantial association between time-space variation and the unemployment rate, the rate of mental illness, and the rate of suicide in counties across the United States, arguing for an effect of economic factors on mental illness.

There are also a variety of matched case-control studies, including Evelyn Bromet's study of plant closings. In one of the control towns in her study, the only plant in the entire town closed suddenly. This impacted her case-control study, but she saved it by turning it into a study of plant closings. Bromet ended up with a study of one town where the plant closed and one town where no plant closing occurred. Lo and behold, she found enormous differences in the mental health of the people in the town where the plant closed. There are other more narrowly focused quasi-experimental paradigms like that. There have been several studies on the mental health impact of lottery winners. There is also Jane Costello's study of Native Americans in the Great Smoky Mountains, which examined before-and-after differences when a casino was built and, suddenly, money was distributed to everybody.

What was the impact of that windfall of money on time-space variation or life-time income? The latter is an interesting example. If you look at variation in income in a given year in America, about 10% of the variance of income is explained by the luck of time and place of birth. That is to say, if you were born in 1943, you have a charmed life because not very many people were born in 1943. I know a guy with an IQ of about 110 who was born in 1943 and he graduated from Harvard Medical School because they needed a certain number of people to go to Harvard. In contrast, if you were born in 1946, along with everybody else in the baby boom, you were in big trouble. The size of the birth cohort matters. If you look at the U.S. population to see how many other people were born in the exact same year as you, the more people born, the lower your income is throughout your life.

Furthermore, you can look at what the unemployment rate was in your local economy when you entered the labor force. There is something called "vacancy change." That is where you enter a certain percentage of people that are lockstep throughout your life. It turns out, if you take a regression equation and regress income on size of your birth cohort, and where you grew up, when you finished school, what was the unemployment rate in your local economy when you graduated from school, and look at explained variance, 10% of the variance in income in America is explained by those two things, which is really sort of fascinating. But here is the other fascinating thing. What if I were to take a person's income and break it into two parts, the 10% of the variance that is due to the luck of time and place and the 90% that is due to effort. Which of those two pieces is related to mental illness? If it is effort, then you would expect only the 90% of the variance would be explained. As it happens, both of those components have exactly the same association with continuous measures of CESD depression (Center for Epidemiologic Studies Depression Scale) at a point in time. Whether the income was due to luck — in other words, if you were randomly assigned to it — or it was due to effort, it has exactly the same effect, which makes it sound like there is an effect of income on mental illness rather than the reverse.

These are some of the interesting quasi-experimental paradigms. What can we conclude from this? Well, we can conclude several things. One is that the world is

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What are the component effects of social class on mental illness? What is it about being poor or being in a low socioeconomic class that leads to higher rates of mental illness?

complicated. The other is that causal effects exist and they exist in both directions. Brenner's work makes it clear that there is an effect of the economic downturns on depression. There is other work that is equally convincing that the effect goes the other way. Conclusions about active components, relative effect sizes, reciprocal associations, durations, and modifiers are much more difficult to sort out from the literature. There have been multiple studies of component effects of mental illness. What is it about mental illness that leads to economic problems? I will not get into that because it is not our topic today, but the Global Burdens of Disease studies are interested in that.

What are the costs to an individual having a mental illness? There have been many studies on this topic. We are more concerned with the question, what are the component effects of social class on mental illness? What is it about being poor or being in a low socioeconomic class that leads to higher rates of mental illness? Is it income? Is it education? Is it occupation? In the U.S., those three things are highly correlated with each other. In different studies, you will find that each of them is a predictor. The financial part is not the answer all by itself. For some things, education seems to be more important. It sounds like the people with good social class are coping better than others. It is not a money thing. Then there is compositional effect of occupation. When you have occupation differences, as we do with MOS (Military Occupational Specialty) in the Army, you find that certain MOSs have a higher suicide rate than others. Why? Stevan Hobfoll mentioned earlier that people in the Army tend to be more impulsive than other people. That is more true for combat arms personnel than for combat support and combat service support personnel. There are selection processes into occupations that can be important.

There is also the issue of the component effects of income, which is fascinating. There have been a number of studies looking at income and rates of depressed mood in the population. You can decompose those geographically. If I look at where a person lives to see if there is an association in the national sample between how much money you make and how depressed you are — and the answer is yes, there is — then I break income into two parts: the average income in your neighborhood, and how much money you make relative to other people in your neighborhood. If you live in Hollywood and make \$100,000 a year, there would be a score of 300,000 for the average income in your neighborhood, and you would have a score of 200,000 because you make \$200,000 less than the other people in your neighborhood. If you live in the middle of Arkansas, to take a random example, and make \$100,000, there would be a score of 55,000, which is the average income in America, and you would have a score of +45,000 because you make \$45,000 more than the national average.

The question is which of those two variables is the stronger predictor of depression? We find that it is virtually entirely the ipsative component, which is to say income is not related to depression in America. Depression is related to how much money you make compared to other people who live in the same neighborhood. The actual *amount* of money in the neighborhood is completely unrelated. This finding is not what you would expect if depression was related to buying resources, however, it is what you would expect if it was related to making you feel good about yourself.

There are also within-family analyses of personal earnings and other income, which is a fascinating line of research. It turns out that for men and women alike, there is an association between family income and mental illness for the rates of depression and anxiety. For women, total family income is important, but for men,

it is personal earnings that is important. It is not how much money the family has to buy things for the children, it is how much money the man makes. In that same ipsative line of thought, the more money I make, the happier I am, and the more money my wife makes relative to me, the more depressed I am. It is not about financial resources and financial stress, it is about self-esteem. This gives us very different notions about what it is about finances that are important for mental health.

Let us turn to mediating and modifying effects. There have been several studies of job loss that find that people who lose their jobs are in worse mental health than other people. These studies have looked at mediator processes. When you lose your job, your money decreases, you do not see your friends as much, you cannot do things, and you feel bad about yourself. The question is, what do you lose when you lose your job? There are many ways in which your life changes. Some of those losses have bigger effects than others, and some of them are more important for some people than others. Again, studies show that although financial issues are important, they are not the most important thing about losing your job. There are many other things having to do with self-esteem, control, and security about the future that are going on. In those studies, in many cases, the mediators, themselves, are much less important than the modifiers.

There are many people with financial stress. If financial stress was “it” the suicide rate would be a great deal higher than it is, even though it is the case that suicide rate is not the most important stressor when you go backwards in psychological autopsy studies. Matt Nock said this morning that relationship problems are a much bigger deal than financial stress, but the idea is that there is no stress, in and of itself, that will lead to this rare traumatic outcome. This is because there are very few stresses that only occur to 15 people per 100,000, which is the suicide rate. Even when you look at a really bad stressor like bankruptcy, we are talking about something that is 50 times higher than that. Only one out of every 50 people of those who experience a disaster kill themselves. You need to have more than this one trigger. You need to have a great deal of things line up in exactly the right way to have exactly the wrong outcome. Matt Nock will talk more about this from some of the studies he has reviewed from the last fifty years, but the stress itself does not seem to be the dominating factor.

The joint effects of multiple stressors are another thing. In Army STARRS we ask people, “How much stress do you have in your finances, your relationship, your health, getting along with your loved ones, and so forth, as a whole?” The typical way of analyzing those data is to think of that as the dependent variable and think of stress in each of these major life domains as the predictors. For people who say they have a great deal of stress in their life as a whole, we find interesting things. For women, how your children are doing is more important than for men. For men, it is about how much money you make and so forth. The striking thing is that people who have big problems in their lives as a whole, rarely only have problems in one domain. They tend to have pretty serious problems in three, four, or five areas. It is a multiplier effect. Stevan Hobfoll mentioned earlier that, when things build up, there are cascades that occur, as well as nonadditive and nonlinear effects. On a 0–10 scale, the people who say, “I’m getting ready to kill myself,” tend to have scores of two or three. In order to have a score between 0–3, you cannot have a 0–3 on any one of these domains. You have to have at least two or three domains where it is four or less, or you have to have at least five domains where it is six or less.

There is this combination of number severity, but it is the pileup that is impor-

The striking thing is that people who have big problems in their lives as a whole, rarely have problems in one domain. They tend to have pretty serious problems in three, four or five areas.

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tant. We see this in the Edwin Shneidman studies of people who killed themselves. The psychological autopsy studies of those who died by suicide and the studies of people who made series attempts and lived, show that when asked, “Why did you try to kill yourself?” very few people say, “Because that was my first choice.” When asked, “What are you doing when you’re taking your life?” answers included, “I’m getting back at that woman who never should have dumped me,” or “I’m escaping from the pain.” People were also asked, “Why did you choose that way to escape from the pain? Isn’t there some better way of escaping from the pain?” People answered, “Yes, there are. There are these eight other ways, and I tried every one of them. Suicide was not my first or second or third or fourth or eighth choice. It was the only thing left when all the other choices were closed off.” This is called a defeasible explanation: I tried it because I had to do something and everything else was impossible, and this was the only thing left.

When Bob Ursano and I first talked about this forum, I had an image that one of the things we would do as a side light would be to get some free consultation from all of you about what to do in Army STARRS, where we have a prospective, large, national study in which we have asked people what the most commonly occurring stresses in their lives are. We have questions that ask how much stress you have in these various parts of your life, and if are you suicidal. We are already starting to look at this to see what the combinations of stressors are that seem to be most important for which people. I think getting a sense of those combinations and nonlinearities and nonadditivities, how bad it has to get, is something that can be useful to embed into other studies.

When Shelley MacDermid Wadsworth talked about the before-and-after studies looking at whether an intervention did something, what is the *something* you are interested in? It might be that you want to know how much stress you have in your life. You want to have a crosswalk between something that is going to go someplace else. Figuring out how to do that could be useful.

What are the protective, resilience, and vulnerability factors that most strongly predict onset persistence and reactivity to those stressors? When I say “those stressors,” it might not be just having financial stress, but having it above a certain level, in conjunction with three other domains of stress above a certain level. It must be the combination that is important. This is not the job of the program people who were speaking earlier today. To the extent the rest of us think of those interventions as important in order to deal with health problems, we have to think about targeting interventions. For example, we might only be interested in the people who have an extreme adversity, where the financial piece is really big in the context of having some mental health issue and low resilience, on the basis of something else. That is the critical combination that will push people over the edge for something really bad to happen.

It might be that when mental health professionals encounter people who have the clinical piece, they should be screening for financial and relationship problems. They should be getting people into a special version of these programs or interventions that would not just be the standard financial program. Knowing that there is a group of people coming in that is a particularly vulnerable population, you would have to manage it in a different way. That imposes a large burden on the people running the financial programs. You are not psychiatrists; you are money manager people. However, being able to put together wraparound programs that could deal with those special issues in ways that are typically beyond what happens in psychotherapy

has the potential to be a useful thing, if we in fact find, in naturalistic studies, that money is a big problem.

Remember, we have not found that to be the case. To date, all the information we heard this morning suggests, “Boy, aren’t these guys lucky to be in the military? Look at all these resources they have for dealing with financial problems that other people do not have.” Therefore, it still remains to be seen what part financial problems play in things that mental health professionals are interested in. To the extent that they do play a part, and we think it is a modifiable target given the things you folks do, it would be useful to create some crosswalk targeting that does not yet exist.

That brings me to the idea of opportunities for intervention. There are many things that we have already discussed today that have the potential to be thought of as interventions that could be evaluated. For example, we heard about the Army program begun in some facilities in 2008, and was expanded in 2012. The hope was that if the Army liked it, they would take it over, and they did. The immediate thing I wondered was, how did the Army decide that they liked it? How do you know when you like something? Is it because it was pretty? Is there some evaluation of the effects? If it was put in one place in 2008 but not in other places, then, in 2008 and 2009, you should be able to see some differences in mental health outcomes before or after the change. I mentioned this to Dennis Legert, saying, “That’s an awfully big burden to ask, can you find an effect like that?” But we know that from other experiences. When IDF (Israeli Defense Forces) decided that reservists could no longer bring their weapons home, and that was just a decision made one day, the suicide rate of people in the IDF dropped dramatically over the next year. In other words, there are interventions where you can see big before-and-after changes with these restrictions. Was there a big before/after effect here? Among the people who were at high risk actuarially, do you find a risk? There are opportunities for studying those things.

Another fascinating thing we have looked at in Army STARRS was based on something a reporter once raised with us saying, “Over the last number of years, the military has increased the death benefit three times, and now if you commit suicide, your survivors get \$400,000. You’re paying people; you’re giving them financial incentives to die.” Did the suicide rate go up after the military put that policy into place? We went back and looked, and the answer is no. There was no effect at all, but it is an interesting question. There are other policy interventions where you do see sharp effects after the fact. There are opportunities to gain insight into what the effects of financial stress are, and what the ameliorative effects of interventions could be by taking advantage of those natural experiments and following your nose with data that already exists.

Is there time-space variation in the programs that exist? Several of you who talked about practical programs said you put a program in place, and then expanded the program. Could we go back and reconstruct to get some sense of what we guess the incremental effect would be? That would be great.

The next step is the opportunity for field experiments. On the basis of doing naturalistic studies, if you say, “I see people who have these existing financial problems in the context of mental health, etc. If I were to intervene in a particular way, I bet we could.” As always happens, these programs get put in place in a demonstration site, and you try it out there first. It would be so great if, when you do that in a demonstration site, you do it at random, so you could actually see what is going on. There are many experiments being done in the military, as in any other kind

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How do we roll out programs, and can we roll out programs in ways that could be more informative to us? Much of that is embedded in what we now call implementation science.

of employer, all the time. We do not see the effects of the interventions because we do not think of them as interventions. If you built that thinking in to begin with, it would be much easier to get between here and there quickly; not just at the beginning stages, but at the later stages too.

Now you have the intervention, but does the intervention work for everybody? The people who loved it told us they loved it. That is nice, but what about the people who did not love it? What about the people who never showed up? Do you have any idea at all of who did not show up, and what you could have done differently? If you were a money making company, instead of a charitable organization, as has been mentioned several times today, there would be a market research company who would be handy and willing to, for the right amount of money, maximize your ability to figure out how to do all this analysis. The amount of money being spent on this in a given year and the costs, in terms of human lives, are so great that there is no reason not to do that here; to figure out how to make these programs the best they can be. Through a little incremental increase, or by taking the same amount of money and moving it around, with many human services programs, when you look closely, you find that you can increase efficiency by 20% or 30% by cutting your losses on the things that do not work and pushing more of the things that do work. The question is, how do you figure out which is which? It takes some standing back and looking at it carefully, but I think that can be done. There are many opportunities for doing that in this domain, and I hope that they will be done over the coming years.

DR. URSANO: Thank you, Ron. First, as you were all listening, you would have heard things like, how do we design ways of understanding these questions? Ron quickly went through a number of sophisticated design approaches to try to answer some of the questions we have posed. It is the picture of bringing science thinking, which is objective, quantitative methods, to help solve, or at least better understand, the problem.

The second thing I would like to highlight from Ron's comments is there are opportunities to design ways we do our usual business that will also better inform us. Ron was referring to the question of quasi-experimental designs, or field experiments. How do we roll out programs, and can we roll out programs, in ways that could be more informative to us, and not just get the program rolled out? Much of that is embedded in what we now call implementation science.

Our next speaker, Matt Nock, is a good friend and a member of our Army STARRS group. He is a MacArthur Fellow and Professor of Psychology at Harvard University. He is a world-renowned expert in the area of suicidal behavior, which spans the range from ideation, to plans, to attempts, to completions, and the question of what leads to transitions between those states. How can we approach understanding those areas and the relationship to adversities?

DR. NOCK: Thank you for the introduction, Bob, and thank you for organizing this forum and for inviting me. I want to talk about adversities and suicide. First, I want to talk about the epidemiology of suicidal behavior. I know that is not the goal of this Forum, but I will talk a great deal about suicide. In thinking about the role of adversities and financial adversities in particular, it is important for us to have a collective sense of what suicidal thoughts and behaviors look like, when they begin, how they change over time, and the different parts of the pathway to suicide. What are the risk factors for suicidal behavior? Many of the things I will present build on what Ron Kessler discussed about the role of mental disorders in suicidal behavior

including social disadvantage and its role in suicidal behavior, and specific adversities with a focus on financial adversities. I will talk about how these are all part of the same complicated puzzle. I will also share some of my own thoughts on some needed directions in this area.

Suicide is one of the leading causes of death worldwide. According to the World Health Organization (WHO), it is responsible for approximately one million deaths each year, which means one person takes their life every 40 seconds. That means by the time we finish this panel, another 100 people will have taken their own life. Suicide is the tenth leading cause of death in the U.S., and third among adolescents and young adults.

There are approximately 40,000 suicide deaths in the U.S. each year, which means there are more than five times as many suicides as HIV/AIDS — related deaths each year in the U.S., and more than twice as many suicides as homicides. The last fact, more suicides than homicides, is true globally. Each year, around the world, more people die by suicide than all wars, all genocide, and all interpersonal violence combined. That means we are each more likely to die by our own hand than we are by someone else's. I think that is a staggering statistic. The overall suicide rate has not changed much over time. Men are much more likely to die by suicide than women, by a ratio of about 4 to 1. There have been reports in the media that the suicide rate has increased in the past ten years. It has, but it decreased in the decade before that. If you look at suicide over the past 100 years, it has been fairly stable. The suicide rate in the year 2000 is the same as it was in 1900. Unfortunately, despite increased research and increased attention, we have not had much impact on the overall suicide rate.

Suicide is a big problem among servicemembers. I will present data from Army STARRS, the study that was mentioned earlier. The matched rate of suicide in the general population has remained stable, but the rate of suicide among Army soldiers has unfortunately been increasing in recent years. The problem, I think, is relevant to everyone in this room. Although suicide death is a big problem, non-lethal suicidal behaviors occur much more frequently. I will also present data from the WHO World Mental Health Survey Initiative, which Bob Ursano mentioned earlier. This is a large, coordinated series of nationally representative studies conducted in about two dozen countries around the world, and includes over 100,000 people. I will draw some general comparisons to results from Army STARRS, as an example.

What percentage of adults around the world say that they have seriously considered suicide at some point in their life? Looking across 17 countries, with about 85,000 people, approximately 9% of adults say that they have seriously considered suicide at some point in their life, 3% have made a plan to kill themselves, and just under 3% have attempted to kill themselves. We see a great deal of cross-national variability. The highest rates are consistently in the U.S. and New Zealand.

In the U.S., about 15% of adults say that they have seriously considered suicide at some point in their life, 5% have made a plan, and 5% have tried to kill themselves. These numbers are not dissimilar in Army STARRS. In the Army STARRS All Army Survey (AAS), which is a representative sample of about 50,000 Army soldiers, we found that the rates of ideation, plan, and attempt are approximately 14%, 5%, and 2%, respectively. In the Army STARRS New Soldier Survey (NSS), which includes about 40,000 recruits in basic combat training, those numbers are approximately 14%, 2%, and 2%, respectively. As was discussed earlier, despite

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We know that suicide is a problem that begins early on. In childhood virtually no one is thinking about suicide, and then in adolescence and young adulthood, we see rates skyrocketing in every country. This is about the time that people are joining military service.

demographic differences between the general population and servicemembers, we see fairly high rates in servicemembers, which is a big problem.

We know that suicide is a problem that begins early on. Across 17 countries, among those who think about suicide, what is the increase in risk each year of life for suicide ideation? In childhood virtually no one is thinking about suicide, and then in adolescence and young adulthood, we see rates skyrocketing in every country. This is about the time that people are joining military service. In late adolescence/young adulthood, we see a huge increase in thinking about suicide. In the U.S., about 50% of those onsets are occurring before the early 20s, so this is a very high risk time for beginning to think about suicide.

We know that only about one third of people who think about suicide actually attempt suicide, and we know the speed of transition from onset of first ideation to onset of first attempt happens fairly quickly. We looked at those who make an attempt, and how many years passed from when they first started thinking about suicide until they made their first attempt. In every country examined in this study, 60% of the time or more, if that transition occurs, it occurs during the first year after onset of ideation. This suggests that the time a person first starts thinking about suicide is a high-risk time to attempt suicide. We see similar data in the Army STARRS AAS and NSS that is consistent with findings across many countries and in many samples.

Now that we have a sense of suicidal thoughts and behaviors, I will talk about risk factors. The majority of work in recent years has focused on the role of mental disorders. That has been discussed today, and I will link this with suicidal behavior. Across 21 countries, we know that the presence of mental disorders is associated with significant increased risk in suicidal behavior. Psychological autopsy studies suggest that 90–95% of people who die by suicide had a diagnosable mental disorder. If I say “suicide,” what disorder comes to mind? Probably depression for most people. Indeed, if we look at the presence of a prior mood disorder — depression, dysthymia, or bipolar disorder — we see a four-to-six-fold increase in the odds of suicidal ideation, plan, and attempt. Interestingly, we see a similar increase given the prior presence of an anxiety disorder, an impulse control disorder, a substance use disorder, and, in fact, any disorder. The odds for any disorder look similar to mood disorder. We also see a strong dose-response relationship. Ron talked about things piling up. If you have exactly one disorder, compared to those with zero disorder, you do not have an increase in the odds of suicidal thoughts or behaviors. If you have two disorders, you double your odds. With three or more disorders, you have a six- to nine-fold increase in the odds of suicidal thoughts, plans, or attempts.

A nice thing about having large samples, like in the WHO World Mental Health Survey and in Army STARRS, is that we have thousands of people with ideation and many people with attempts. We can begin to look at the unique associations between risk factors and different parts of the pathway to suicide. Looking at 16 disorders we asked, what predicts thinking about suicide? Highlighting four disorders (depression, PTSD, conduct disorder, and alcohol abuse/dependence), we find that virtually every mental disorder examined is associated with increased odds of suicide ideation. For instance, PTSD is associated with a 50% increase in the odds of ideation. Depression is the strongest, not surprisingly. Those with depression are two to three times more likely to experience ideation.

If we ask what predicts which people who think about suicide go on to act on their suicidal thoughts, then things become more complicated. We find that

depression does not increase attempts. The disorders that increase attempts are the ones characterized by anxiety, agitation, and poor behavioral control. It appears that depression gets people thinking about suicide, but these other disorders get people acting on their suicidal thoughts. Perhaps that is why co-morbidity or multi-morbidity seems to be important. We see this in a nationally representative sample of the U.S. and cross-nationally in 21 countries. We see it in the Army STARRS AAS and NSS as well; it is consistent across studies. In the AAS, a large representative sample, disorders like depression predict ideation. The only disorder to predict who transitions from ideation to attempt is intermittent explosive disorder. Again, depression gets people thinking about suicide, and these other disorders get people to act on their thoughts.

How does the financial piece fit in? Ron Kessler talked about social disadvantage. Although mental health has been studied most recently, I think social disadvantage has been studied the longest. Again, I will discuss the WHO World Mental Health Survey data. These general findings have been replicated in multiple studies. We know that measures or indicators of social disadvantage are associated with increased odds of ideation and attempt. Consistently across studies, being female, younger, having lower education, and being unmarried are associated with increased odds of thinking about suicide and making suicide attempts. We see similar findings in military samples; women and those who are younger and lower rank are at higher risk of non-lethal suicidal thoughts and behaviors.

I want to transition to specific adversities. I will discuss adversities overall and then work into financial adversities, the topic of this Forum. Our research group, with funding from the Military Suicide Research Consortium, is in the middle of a large meta analysis. We are looking at all prospective studies on risk factors for suicide ideations, attempts, and deaths over the past 50 years. One of the things we are examining is the role of prior adversities. What is the increase in the odds of suicide ideation, attempt, and death, given the presence of a prior adversity or negative life event? Perhaps not surprisingly, we see an increase in odds, which is significant for suicide ideation and attempt. These are not huge effects, but they are significant. This suggests that the presence of life adversities does increase risk, but it certainly is not the full picture.

The question is, what kind of adversities contribute to the odds of suicidal ideation, attempt and death? As Bob Ursano mentioned earlier, what is considered a financial stress? What is an adversity? There are many different things that one could examine. Most of the literature has looked at what we think of as traumatic life events. Again, with data from the WHO World Mental Health Survey of over 100,000 people, we see traumatic stressors associated with often significant, but relatively small effects including exposure to war, being a refugee, accidents, natural disasters, interpersonal violence, death of a loved one, and witnessing violence. We see the strongest and most robust effects for violence; being the victim of interpersonal violence or sexual violence. If we look at a multivariate model, including all traumatic life events at once, interpersonal violence and sexual violence persist. As Ron mentioned, the stacking up of these events also increases risk. How many traumatic life events has a person experienced? The more events you have experienced, the higher your odds of thinking about suicide and making suicide attempts.

If we move from traumatic life events to stressful life events, what is their role? Of the longitudinal studies we have examined, I will discuss several examples. There was a study of nearly 500 adults with personality disorders who were followed

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for three years. The increase in the risk of suicide attempt given the presence of a number of different negative life events was examined. Having any event overall was associated with a significantly increased risk, and relationship problems, crime, and legal problems were important. The big three were mentioned earlier: relationship, crime, and legal/financial problems. Only the first two were significant, but financial problems still seem to be in the picture.

A larger sample of data from the NESARC (National Epidemiologic Survey on Alcohol and Related Conditions) study, included 6,000 adults with major depression. This study looked at four classes of stressful life events: the experience of loss, which occurred quite frequently in a given 12-month period; relationship problems; legal problems; and financial stress. Financial stress, in this larger study of people with depression, was significantly associated with increased odds of suicide attempt. Interestingly, the stronger the financial stressor, the stronger the effects, not significantly so, but if you lose your job there is a slight increase in odds. If you have been unemployed for one year or more, there is an even stronger odds ratio. If you have had a major financial crisis, such as bankruptcy and inability to pay your bills, there are even stronger odds. There is a small relationship between strength of the financial stressor and the odds of a suicide attempt.

In thinking about needed directions, things become more complicated. These are my own thoughts on things that we need moving forward. We need more prospective studies of novel risk factors. We talked about financial stress. What do we mean by financial stress, and how much has this been studied? With data that I hope to have published soon, looking across the past 50 years of research on prospective studies of suicidal behavior, what risk factors have been examined? Researchers have been looking at the same set of five risk factors: sociodemographics, DSM (Diagnostic and Statistical Manual of Mental Disorders) internalizing symptoms, DSM externalizing symptoms, prior self-injurious thoughts and behaviors, and life events. Life events, we know, are examined least frequently.

Studies of these classes of risk factors represent 75–80% of all prediction cases. Fifty years of research, with over 4,000 predictions and 4,000 analyses, has looked at the same small set of factors. Researchers have not been looking at things like financial stress, which, if included at all, is typically included as one item in a list of negative life events. We have not looked at other things that might play a role, such as life and occupational transitions, concerns or perceptions that people have about their financial picture, their life picture, decision making, and financial decision making.

Prospection was mentioned in a previous presentation. We have recent data suggesting that a person's inability to have positive thoughts about the future, to generate thoughts about the future, is associated with suicidal thinking. These things have not been included in prior studies. What is the role of distress tolerance? If you are experiencing distress, how much distress can you tolerate? How much persistence do you have? How much resilience do you have? These questions have not been examined in the history of the literature.

What has happened to our odds ratios over the past 50 years? Not much. They have remained fairly stable. In fact, one could argue that they have decreased, but this is probably because we have more prediction cases and we are becoming more accurate in our effect size estimates. However, our effect sizes are not very strong. It is not as if we are getting better at hitting the bulls eye as we progress scientifically.

We need to focus more on novel risk factors and on short-term predictors. Of

all the prospective studies that have been conducted on suicidal behaviors, the vast majority look at very long time windows. At this Forum we have been talking about financial stressors that presumably would increase risk in a fairly short time period, over several weeks or months. However, a vast majority of studies are focused on years of prediction. They measure people at a baseline and then follow them for years out, or come back and measure them every one to two years. If we think that stressors are influencing people in the short-term, we need more studies focused on the past one to six months. Only 2% of the 4,000 prediction cases we reviewed look at one month or less, when clinically, this is what we really want to know. Who is at risk of some negative outcome over a short time window? We need novel risk factors. We need short-term prediction windows. We need to understand interactions.

Financial stress is one type of stress. It does not operate in a vacuum. Even the odds ratios I discussed earlier were in the presence of personality disorders and mood disorders. As has been mentioned several times today, just experiencing financial stress alone is not going to lead to suicidal thoughts and behaviors. It is financial stress multiplied by some mental disorder multiplied by several other vulnerability factors and other stressful events. We also need to keep context, or population, in mind. For example, we know that in the general population, having low income, being unemployed, having low education, and being unmarried are associated with a higher risk of suicide. Interestingly, among psychiatric patients, the opposite is true. There was a study done by Esben Agerbo several years ago published in the *Journal of Clinical Psychiatry*. He looked at the Danish medical registry, with about 100,000 patients experiencing a first admission to a psychiatric hospital. This data spans 18 years with about 3,000 suicides. Agerbo found that the suicide risk, the rate of readmission, and the rate of suicide is highest in those with the highest level of income. People who are at greatest risk, given readmission or not given readmission, are those who had the most money. You might think this is an off-chance finding. However, the same holds true for the following: employment status (fully employed or unemployed), being on disability, receiving welfare, marital status (married or unmarried), and education (post-college degree, some graduate degree, college degree, vocational school, high school, or did not finish high school). The effects flip in this psychiatric population. In the general population, social disadvantage is associated with risk. Among psychiatric patients, the opposite is true.

Ron Kessler talked about social drift. Those moving from the highest to the lowest income group have a ten-fold increase in the odds of suicide death compared to those moving up socially. Why? It could be that people are experiencing a fall from grace. The better you are doing economically, educationally, or relationship wise, if you become a psychiatric inpatient, things might fall apart for you. You might experience shame, loss, or a perceived failure. I wonder if there are analogous setting events among servicemembers. What are the most important factors, and what are the most important time windows? Data from Army STARRS suggest that recent demotion is important in predicting suicide death. What about financial adversities that occur early in a servicemember's career? How might those be different than financial adversities that occur during deployment? What about financial and educational employment adversities that occur after separation from the service?

How do we understand objective events versus subjective perceptions or concerns that a person has? Is it that a person has objectively experienced some real financial stressor, or is it the perception that things are not going as well as they should be, that is to say, expectations are not being met? Do we see differences, as

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suggested by the Agerbo data, in a person's rank, in their Military Occupational Specialty (MOS), in the branch of service they are affiliated with, and whether they are serving in a regular status versus Guard and Reserve? There are many open, unanswered questions. This has not been examined thoroughly, but there is potential for us and for others to work in this direction moving forward.

PANEL 3 DISCUSSION

Moderator: Robert J. Ursano, MD

DR. URSANO: As we think about increased complexity, as Matt highlighted, let us think about several questions. What comprises the risk population? How may the risk factors differ in different populations? Whichever adversity one is studying, financial stress and others, our need is to focus on what goes on in a relatively short period of time, over weeks and months, rather than years.

That is our biggest deficit in understanding the impacts of concern for behavioral health. In particular, the need to further understand this interlocking or interacting web in which all of these are occurring, and importantly, how these show up in different groups. Those groups include people who have pre-existing psychiatric problems, those in different deployment stages, and those in different time in service. To what extent is this an objective stressor? For example, I have this much money — versus a perceptual stressor — I have less money than Joe next door.

Many of these approaches are opportunities to understand the problem in a different way. Several of the aid societies' representatives talked about the ability to obtain rapid financial assistance, up to \$2,000, as I recall. Is it the rapid financial crisis that is our problem, or is it the slow, evolving financial strain that confronts these changes in health that are of substantial interest?

MR. FEDRIGO: I thought the statistics and the discussion Matt Nock gave on suicide were interesting. We have wrestled with this Adverse Childhood Experiences (ACE) score that many people are talking about now, and whether or not that would be a good predictor for us to use to start tracking for new accessions into the military. The ACE score seems to predict, with a reasonable confidence level, physical issues later in life, whether it is heart disease or cancer. Do you see the same correlation with potential risk of suicide or potential risk of major depression, and is that something that we ought to be tracking with all new entrants?

DR. NOCK: We have not looked at the ACE score itself, but we have looked at a range of different child adversities. I did not present data on that today, but we do see increased risk of each of the suicidal outcomes I mentioned. If we look at the effects of demographics, child adversities, adult adversities, and mental disorders, we find that the population attributable risk for suicide ideation and attempts is highest for mental disorders and child adversities; child adversities much more so than adult adversities. I think, and Ron can speak to this because he has looked at this in mental disorders in suicide and more generally, that child adversities carry a great deal of weight in predicting later disorders and suicidal behavior.

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DR. MOTTOLA: That is interesting data on suicides. Matt, has there been any research on the relationship between religious faith and suicide; on whether it is a risk factor or a protective factor?

DR. NOCK: Yes, people who identify with a religion have lower rates of suicidal behavior, and there is some suggestion that in religions where suicide is more taboo, you see a lower rate of suicide death. The taboo is perhaps protective.

DR. HOBFOLL: This is great research. It raises several questions that I think challenge the epidemiological paradigm. Ron, I wonder if you have ideas about how you get to these threshold effects. You increase burden to a point, but then you fall off the cliff. For suicide, there is certainly a “falling off the cliff” effect. Are there models to look at that? These are all linear models you have presented, which will not assess those thresholds well.

I also have a question about differential income. They say housing is about location, location, location. In Chicago, for example, within the city limits, the best neighborhood is 56 times the cost per square foot of the worst neighborhood, which means an extra 20% in the worst neighborhood. You can take that money and double the size of your apartment or, more importantly maybe, move into the next neighborhood, where you cut the rape rate in half, or the next neighborhood after that, where you cut down the rape rate by 90 percent. What that money buys is very different in those situations. Do you have ideas for moving from the epidemiological studies to theory driven studies to look more closely?

DR. KESSLER: You are right about the threshold. Linear models do not capture that well, and we do not use linear models. Models to see when the bridge is going to collapse are threshold models, and that is what we estimate. We estimate the survival threshold model. You find that there are strong nonadditivities. That has some interesting implications because that means it is the people who have a buildup of many things that are important.

In the most complicated versions of these models, you find something called a subadditive interaction, which is that at a certain point, when you have seven or eight adversities, you are not eight times more likely to kill yourself. You are four times more likely to kill yourself. This means that beyond a certain threshold, things increase at a decreasing rate. That is important for the following reason: a great deal of interventions that we develop deal with one problem. Most of the people who end up killing themselves have a dozen problems. This is seen in the Moving to Opportunity study, which is another context study we have done looking at people who have 50 things that are disastrous. Any one thing you try to fix just gets swamped by the other forty-nine. The only way to do something — you had talked about this with the mini interventions — is to go in and fix the neighborhood. You cannot just give people computers. Somebody will beat them up and steal their computer. You have to go in and do a whole bunch of stuff because, at the margin, you are not having much effect. You have to deal with the entire bulk. That is one important implication. It means that if you are trying to reach the people who are really deeply at risk, just a financial program is not going to be enough. They have five other problems where that came from, and so forth. A wraparound program is needed, where there are interventions that exist in which there is a case manager who deals with your legal, financial, and foreclosure problems, etc.

The context effect that you were talking about is tricky, but it is fascinating for the Army. I mentioned that there are ipsative effects; most of the economic effects you find in the general population epidemiologically are in people who make less

money than other people. The functional form is hard to tell in these things because there is collinearity, but if it is at the 50th percentile or the 60th or 70th, moving you up ten percentiles in certain neighborhoods is ten times more dollars than in another neighborhood. It is an absolute thing or a relative thing. It is fascinating in the military context because the military is in a unique situation. They live in a world where they all live in a neighborhood where not only does everybody make the same money, they all wear the same clothes every day, and they all eat the same thing.

Matt mentioned one of the other contextual effects we find is being married has a strong protective effect against suicide. In the military it does not. Married people do not have a dramatically lower suicide rate in the military. I thought to myself, is that because of the stresses of the military family? The other possibility is that it could be the strength of the military environment for the context effect. You get some benefit just by being in that environment that normally only married people get, but in the military environment everyone has it. I do not know the answer, but I know there is something subtle going on there that if we wanted to get to the bottom of it, we would have to wrestle with that set of issues. This is a long way of saying I do not know the answer.

CAPT. ELENBERG: Surprisingly, one thing I found over the past year was how many people do not live in the same neighborhood in the military. Growing up in the military, being on the installation was a cool thing, and you had that support. But we found that nearly 70% of folks live off the installation at this point. We found that fact to be a huge stress, especially the ability to build social relationships and social networks because they could not find people in the same uniform, in the same clothes, and going through the same things. It is a growing problem, especially as we privatize housing, and employment has become a bigger issue. You want more employment, so we might have — especially with installations in more remote areas — spouses living an hour away and carpooling in.

The Guard and Reserve components are geographically dispersed as well. When you think about the most important factors and time windows among servicemembers, you listed many good things to consider: recent demotion, employment status, active service versus Guard/Reserve. I wonder if it would be worth considering suicide clusters. Does that behavior, that influence, factor into this? I am not sure if it does or how much of it occurs in the military, but when I worked with the Tribal Nations, that was a variable that had influence.

DR. KESSLER: I will answer your questions in reverse order. There is a great deal of evidence of suicide clusters in schools and in factories. In studies done in Michigan in the 1980s when plants were closing around Detroit with the car industry, there were cluster behaviors. We do not find as much evidence of clusters in military suicides. Kenneth Cox and Michael Schoenbaum, back in the beginning of Army STARRS, did some work on that. You do not find nearly as much. What Michael did find, interestingly, is that combat deaths clustering in units were associated with suicides, but prior suicides were not. I am not quite sure what is going on.

The tricky business of the social networks living off base is that there are things that are complicated about military life. You only live in one place for three years and your spouse can never establish a career. It goes way beyond the financial piece. There is interesting stuff about the ipsative effects of what is going on with your finances versus other people's finances. To the extent that we are interested in digging into the financial piece, that has to be one of the things we look at.

CAPT. ELENBERG: I think there is a greater degree of being institutionalized

The tricky business of the social networks living off base is that there are things that are complicated about military life. You only live in one place for three years and your spouse can never establish a career.

If you have an important job in an important place, and then all of a sudden you do not, and you are just a regular person in society, what is the psychological impact of that?

by being part of the military. I wonder if it is to the same degree when I first came in to what it is now, with some of those changes of living off the installation. I am not sure to what degree that change actually exists or if it is just a perception.

DR. KESSLER: Many people who commit suicide are geographically non-mobile: elderly people, people who are low income, people who do not move around the country. The military is a very geographically mobile place, therefore many people change units and change physical geographies.

I grew up in south Jersey, outside of Fort Dix and McGuire Air Force Base. The working class town right near the bases was Pemberton. That was where all the enlisted people lived. I lived in the middle class town, which was where all the officers lived. They came in every three years. There were certain people who were the friendliest. They made friends with no problem. Other people were painfully shy. The same thing applied with the military spouses and children.

All of these complicated issues about what the context is and what your resources are, is tough to sort out. Finances are one piece of it, and context is another piece of it, but to the extent that money makes a difference in suicide risk, we know that in the general population, it is highly contextual. What you mean by "context" has very different meanings in the military than in the civilian world. To wrestle with that, that has to be a big piece of it. As I said, we are not going to figure out the answer today, but I know that is where the action is.

DR. URSANO: Interesting observation about what context means in the military when you have a geographic population. Is context a different set of variables than one might think of otherwise?

MS. MCCLELLAND: Lately, I have spent a great deal of time in the recently transitioning veterans' space. Somebody said earlier, "When you lose your job, lots of stuff starts to go wrong." When a military person transitions, they do not just lose their job, they lose that camaraderie. People are not dressing like them or talking like them. They go back to hometown U.S.A. and they are not a success anymore. They are starting over. I wonder if we are going to see all of these same things in reverse as they start to transition back.

DR. KESSLER: This is a new phase we are moving into. As you know, the work that was done 20 years ago on mental health in Vietnam was all after the fact. We are getting into that phase now where the military is shrinking, and the MOSs that they need are different. There are people who are 38 years old, who have been in since the age of 18, and they are now being told they are not needed anymore. The person who used to be the senior person is now going back to this world that they have not lived in for 20 years. There are many things about the stresses of transition that researchers are starting to look at now. I think that will be the big challenge over the next decade, and the financial piece is a big part of it.

DR. NOCK: To add to that, there is a financial piece, but if one thinks about "fall from grace," that is not just financial. If you have an important job in an important place, and then all of a sudden you do not, and you are just a regular person in society, what is the psychological impact of that? If Thomas Joiner was here, he would talk about the concepts of lack of belongingness and feelings of burdensomeness being important in leading people to think about suicide. Maybe if you separate from the military and are back in civilian life, you feel like a burden to those around you. You are not with people who are like you, and you do not belong anymore. That could get a person thinking about suicide.

GEN. SCHOOMAKER: I hate to rule my life by anecdote, but Ron, what you

said in response to what Kimberly brought up is much more significant than we may realize. Only about 15% of soldiers and their families live on base now, so the majority of posts have largely off-post housing. This is simply because the posts have not been able to keep up with housing, even under the privatization.

I was a hospital Commander at Fort Carson, so I was basically a brigade-level Commander, on par with any other brigade — Third Armored Cavalry Regiment, the Tenth Special Forces Group. Two doors down from me was the Third Armored Cavalry Regiment Commander, Marty Dempsey, who is now the Chairman of the Joint Chiefs. We all lived in the same style house. It was 1,200 square feet. It was built in the 1950s and the basement flooded sewage. We all felt like we were in it together. We all drove used cars, and it did not make any difference. We had Chief Warrant Officers down the street that flew helicopters and some Captains in Special Forces, who were way down the totem pole in terms of hierarchy. But there was something about the shared misery and the pride in that.

I remember vividly when the Chief of Staff of the installation — an installation of about 15,000–17,000 soldiers, probably 80,000 community members and families, — had to move on post from a very nice house up on the Cheyenne Mountain. I went over and said, “Chief, I’m really sorry you had to move on post,” and he said, “I’m not. I’ve lived out there for two years, and I knew nobody, and nobody knew me. My next door neighbor, who had lived there his entire life, was 75 and his wife died one night. I asked him, ‘Is there anybody in the neighborhood that we can call in to help you?’ and he said, ‘You’re the only one in the neighborhood I know. You’re the only one who came over and introduced himself.’”

The same thing happened to me when I lived in San Antonio. A new guy moved in at the bottom of the block. We baked cookies and took them down. He turned out to be an Army dentist. He said to me, “You’re the only person who’s come over all day.” Another Army family, in a community of tens of thousands, was the one to welcome him.

I think there is something about what Kimberly and Ron said earlier that has to do with the multiple factors that connect. Where do we go from here? Do we move everybody on post and put them in 1,200-square-foot houses with basements that flood sewage? No, I just wonder if you could begin fractionating some of the elements of financial stress that we saw from earlier presentations. For example, those that had financial stress, such as mortgages or severe debt that resulted in suicide-related behaviors, were they more likely to live off post? Were they more likely to have careers in which they did not connect with the service that they were a part of? How much of a community had they been able to create for themselves outside? I think there is an important key in what you said earlier about the multi-factorial nature of building community and connectedness within the military. I truly believe that.

MR. FEDRIGO: To carry on that thought, that is what we just learned in our week-long suicide prevention summit. All this comes back to connectedness, a sense of belonging, a sense that you are part of something bigger than yourself. There are protective factors in there somewhere that insulate people from this behavior. I was curious if you have ever had the opportunity to see the DOD JAMS? JAMS is the Joint Activity for Manpower Statistics and is a sophisticated sampling of the population of 17–21 year olds, aimed at how we recruit. It does a phenomenal job of providing datasets that you can manipulate in many ways. In effect, what it shows is that the typical cohort is about 4.1–4.2 million. By the time we remove those who

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do not meet the physical, medical, or moral standards to enter the military, then we want the top 50% in the ASVAB (Armed Services Vocational Aptitude Battery). That gets you down to about one million, and then of that million, how many have a propensity to serve that are willing to join? That number is about 450,000 people. Out of 4.2 million in that cohort, the people that we have walking in our front door are a pristine population. They are the same people that every police and fire department wants.

When we see these negative behaviors once they come in, what we are constantly struggling with is, how do we compare the population we have to what is going on in the demographically normed population? It is hard to do unless you are only going to look at police officers nationwide, those 600,000 or 700,000 people. It is hard to find another similar population — same age cohort, vetted the same way, and then held to the same standards as they grow. It seems to be one of the primary factors that make it difficult for us to find those particular areas to intervene. Have you thought about how to slice our populations in a way that helps us?

DR. KESSLER: It is true. Structurally, only 25% of the population is eligible. When you take into consideration personality and predisposition, only 10% of the population is eligible. In an Army that brings in 80,000, and the entire military brings in 150,000, that means you get one third of all the people who are out there each year. The question is, which third do you want?

The other issue is that 15% of them wash out within the first year. After that, there is only so much you can understand from an 18-year-old living wherever they are living, until you put them through the stresses of basic training and AIT (Advanced Individual Training), etc. Sometimes they are going to fall out. The question is, is there something you could do to differentially select the people you have come in? I think the answer is no. The strategy you need to pursue, because you already have such a rarified population, is not much more than what you are doing right now. I think the trick is once you get people in, realize that you are dealing with human capital; and that you are making an extraordinary investment.

When you think about the 10–15% that wash out in the first year and the amount of money you are investing in people who are gone within a year, is there something you could do to figure out differential strengths and vulnerabilities to create special opportunities for strengthening these people in areas where they do not have strength? Our experience in the Army, at least, is that there is a one-size-fits-all attitude. We do not want suicides, correct? Have everybody stop for ten minutes and think about how to prevent suicides. That is a wasted ten minutes for about 500,000 people. For the 20,000 who are actually at risk, you should have spent 24 hours thinking about it. Figuring out ways that there is subsetting that can be done early in a career to target people who need various strengths built, is what Comprehensive Soldier Fitness has been doing. That is not the way to do it. I think there are ways of targeting people who have higher risk up front and figuring out how to get ahead of the problem and to nip things in the bud to build strength where there is weakness. This is not easy, but I think that is the way to do it.

DR. WADSWORTH: I want to follow up on that and on the earlier question about tracking prior exposure to adversity at accession. I think that is a good idea. If those entering the military are coming in with higher than expected prior exposure, it does not necessarily mean that they should not come in, but it may mean that they are good candidates for certain trainings or assessments before they are put into particular jobs. We know that exposure to prior adversity is related to violence

against others later, poor parenting, maltreatment of children, and substance use. It is a risk factor for many things. It seems to me that if we assess it at accession, we are at least equipped with a better understanding of how to respond.

DR. KESSLER: If you take a national sample of people and ask them about childhood adversities using an ACE score or a Rosenberg (self-esteem scale), you will find that experiences like this can affect people in many ways. Sometimes it makes it tougher for them to deal with problems later in life. Other times it makes them stronger and better able to handle things. If you ask, "What do you think it did to you? Did it make you better at handling things or worse at handling things," you will see that 90% of people say it made them better at handling things. Then ask, "Is that a lot better or some?" About 15% of people say it made them a lot better at handling things. Lo and behold, those people have dramatically better mental health than the rest of America. You do not want to throw away the people who had adversity. In fact, that was the case when we asked the same questions in the Army STARRS inception surveys (NSS) when we interview people the first day of reception week. When we ask the same questions that we do in general populations, soldiers have higher rates of childhood adversity. They had more bad events in their childhood, but that can be a source of strength as well. Norman Garmezy's old work talks about strength coming from adversity. Developmental psychologists, who have done similar studies, show you get these resilient children. You are oversampling resilient people who want to do something positive with their lives, but there are still areas of risk.

Kenneth Cox can tell you, we have models, based on our NSS and our administrative data, where we can say on the first day that women walk into the military, this 5% are at high risk of sexual assault, and close to 40% of all sexual assaults will occur to that 5% of women over the next year. On the very first day, we can say, "There they are." What do you do about that? There are four or five or six bad outcomes where we can do a pretty good job of knocking off a high proportion of people who are high risk. The challenge is, now that we know that, can we do something about it?

In the past, we have not had the ability to do that kind of targeting, so our experience is limited. In *JAMA*, several months ago, there was an interesting program of sexual assault prevention done at a college that found that they had a dramatic effect in reducing sexual assaults in that population. They did not target it to the high risk people. They targeted everybody. If we use something like that in conjunction with our targeting, we would only have 5% of people do it, and it would cut the problem by 40% if it was successful. I think that there are probably a half dozen things like that where there are multivariate profiles of people who have pockets of risk, but you do not want to throw the baby out with the bathwater by saying, "No, I can't have people with mental illness in the Army." In that case, you do not have an Army because half the population has had some type of mental illness. You figure out where the high risk people are and develop some practical intervention. There will be times when it fails and people do not make it through the first year of service. I think a great deal can still be done that would be cost effective through intensive targeting and thoughtful intervention.

DR. URSANO: The example Ron is referring to derives from studying aircraft accidents and identifying base rates that are low; finding the needle in the haystack and shrinking the haystack through concentration of risk, so that you can intervene. How do you learn about airplane accidents when they are a rare event? I think it is

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a good illustration of what Ron is talking about, and is based on Ron's work that is part of Army STARRS. Ron's group has been in charge of our machine learning aspects. Looking at the Army from 2004–2009, one can identify a group that has been discharged from the hospital and develop risk equations, and then one can show that 4% of a particular group will kill themselves in the next year.

Looking at the entire Army, we know the number is only about 29 per 100,000. Four out of 100 is still a small number, but compare that, and we frequently do, to issues of heart disease. Many of you are my age or close to it, therefore you are on a statin to lower your cholesterol. We put people on a statin when their risk of a cardiovascular event is about 7% over the next ten years. We are able to identify a population, at least historically, and develop a concentrated risk. This is what Ron is talking about for these models, where potentially developing interventions is practical to do. We have to find an intervention that is cost effective and that works, which is why Ron says, "Bob, go solve it," and I say, "Ron, tell me where to look." That is a challenge. What Ron was describing about identifying risk groups is based on this way of analyzing the data. One can approach many problems that way.

DR. KESSLER: In these rare phenomena, there is no one predictor that is important. If you develop models that take the 30 or 40 most important things, you can generate a multivariate predicted probability based on the whole vector. On the basis of that, you get a small number of people at high risk and you find that a high proportion of the bad things happen to those people.

Interestingly, for intervention perspectives of holding on to them in the military, most of the things we find that are high risk have time windows. Take adolescents, for example. Are they going to have drug problems? There is a period between ages 15 and 18 where there is high risk. If you can get them over that hump and get them launched, then that is it. That is the risk period. It is the same in the military. The first 24-month period is high risk. If you can develop a scaffolding to get them hooked in, then they are home free. There are a small number of people for a small period of time in their career — but critically, it is early in their career — where you have to get them over the hump and get them connected, and then things take off on their own.

DR. URSANO: Another aspect of that is to identify the risk time. You can take the concentration of risk and apply it in a particular time in which the people are reachable, separate from whether the risk is high.

DR. MOTTOLA: The notion of targeting and identifying people at risk of suicide in the military is fascinating. It leads to a question. Are there any ethical issues about identifying and intervening to prevent suicide? In other words, does the person have to be made aware of the intervention? Is the intervention then changed to correlate with subsequent behavior? This is an extreme example, but does it affect their ability to be promoted in the military?

DR. KESSLER: When you start working with big data, you realize there are many interesting moral issues. Can we do the intervention? We do not know because we never knew we had that information before. Once you have the information, a variety of interesting ethical questions arise. If I could tell you that you are going to be dead one year from now, do you want to know? Would your wife want to know, even if you do not want to know? Does your insurance company want to know, but does not want you to know? We have to grapple with that. We have already had some of these experiences in Army STARRS. We do not want to stigmatize somebody and say, "You're going to get raped." On the other hand we can say, here

are some people who have a strength that they need built up and we know what is needed. Are we going to deny them that opportunity? It is a tricky business. There are complex moral issues that I do not have the answers to, but it is something that has to be wrestled with in ways that we have never had to before. Figuring out what to do is beyond my pay grade.

DR. NOCK: In big data and in other work we are doing real-time monitoring of people using smart phones and biosensors, and the same issues come up. For example, you have patients who are in the hospital leaving the hospital, and now you have a signal suggesting they are at elevated risk. Do you tell them? Do you tell their doctor? You should intervene, but at the same time, you will have more false positives than not, so you are going to be telling everybody they are at high risk for suicide when, maybe they are not because your algorithm is not quite right yet. That is a long-winded way of saying, yes, there are huge ethical issues, but we have never experienced them before because we have not had the data that we have now.

DR. URSANO: One could use similar models for targeting people at risk of financial adversity, or determining which group is at risk of financial adversity at which time.

MS. EGENTOWICH: In the Air Force Aid Society, we never ask leadership to be involved. We hope they refer an airman that has a financial emergency to the Air Force Aid Society before that airman figures out how to get to a predatory lender. Having said that, sometimes the Commanders do not know that the servicemember has an issue, and the servicemember presents their case. Our staff in the Airman and Family Readiness Center recognizes that this is a stressed out airman, and that there are other resources they can refer that airman to in order to help him with more than just his financial situation.

I will not name the base, but there is one Installation Commander that just received briefings about suicide rates within the Air Force. He took it upon himself to say, "If I have an airman going to the Airman and Family Readiness Center seeking financial assistance, I want that person's name to be sent over to mental health to cross reference." We said, "What if the airman came in and because it was an area of assistance that we would not participate in, such as taxes or garnishments that the Commanders levied on him, we are not going to help you with that, and now we have turned that airman away and told him to figure out some other resources." That airman is now probably more stressed out than the airman that got financial assistance, but the Commander is overlooking that. Sometimes Commanders with the best of intentions create more stress.

CAPT. ELENBERG: Your leader is in charge of their troops. The line leader, who does not necessarily have a medical background, is in charge of the health and well-being of their troops. We have been trying to identify the one measure that would help them see longitudinally, over time, how their troops were doing by unit, at an aggregate level, so that they could do an intervention. One of the things under consideration now is the health-related quality of life questions because they assess mind and body. That does not get to the root cause of the problem because we would have to go back to those Bayesian causal models to figure that out. Hopefully, it will give leadership the overall picture of the health and well-being of their troops. If we ask the questions during a periodic health assessment or during your clinical visit with your primary care provider, then there is an opportunity, if it is grossly off, for the clinician to say, "I need to do a deeper dive into this, and then refer them to these other programs."

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We are trying desperately to find a measure that can both look at the aggregate population level for the health and well-being of our population, capturing all these things that we are talking about, as well as the individual level that will have meaning, or at least allow us to identify an issue that needs a deeper dive. Any thoughts, at some point during discussions over the next day and a half, that you have on some type of metric that can get to the gestalt of things would be interesting.

DR. KESSLER: This is a two-edged sword. Military people are feeling surveyed to death right now. One of the things we have been struck by is that there is an enormous amount of administrative data available in the military that could be put together that no place else in the world has. Even the Scandinavian countries who have all these registries do not have what you have, because in the military you are the employer, and you are also the doctor, the policeman, and the welfare provider.

I was saying before that we could, from some of these fancy models, predict things. Without asking people a single question, it is possible to just congratulate 60% of the force because they are not at risk. These other people are the ones you have to worry about. I would not do anything with everybody. I would figure out who the people are at high risk that you should push more on, and then I would start with the dependent variable and work my way backward to figure out what I need. Maybe I do not need a global measure of well-being. Maybe all I need is the financial piece. I would like to know what I am aiming for, to begin with, and work my way backward to see what the critical intervenable things are. This is an alternative to starting out by saying, "Let's get a measure of X," because we do not know what X predicts. There is too much "ready, shoot, aim," as I call it, going on now.

PANEL 4: PERSPECTIVES ON FINANCIAL STRESS I

*Speakers: Deborah Boggs Bookwalter, ScD, MS, Barbara A. Thompson,
Eric B. Schoomaker, MD, PhD*

DR. URSANO: I appreciate the discussion and the questions today. I am pleased to introduce Deborah Bookwalter who is one of our colleagues from the Naval Health Research Center in San Diego. Deborah is an epidemiologist with the Millennium Cohort Study on military population health. We collaborate a great deal with the Millennium Cohort Study through Dennis Faix, the Principal Investigator, and with Murray Stein, our other Co-Principal Investigator on STARRS-LS. We feel like we have a good bridge.

DR. BOOKWALTER: Thank you, Dr. Ursano, for having me in lieu of Commander Dennis Faix, who is the principle investigator of the Millennium Cohort Study. I am here on behalf of the study. I know some of you are familiar with the study, but for those of you who are not, it is a very large Department of Defense (DOD) funded study of military personnel.

I will give a brief overview of the study; however, I do not have any data to present because we have not examined financial stress. I am hoping to get your thoughts on survey questions we might add. I have spoken to some of you about questions that came up as part of the FINRA Investor Education Foundation (FINRA Foundation). I am also intrigued by the Army STARRS survey data. With that, the objective of the study is to prospectively evaluate the impact of deployment and other military experiences on long term health outcomes of U.S. service members and veterans.

The Millennium Cohort Study has been funded for 67 years, and it will follow all of the enrolled participants over their lifespan. The hope is that through translation and dissemination of the results, the study will lead to evidence based policy recommendations. The methodology of the study began in 2001 and, at that time, the first panel was enrolled. A current active roster of military personnel was randomly selected, with some oversampling. Additional panels were enrolled in 2004, 2007, and in 2011. We currently have four panels of enrolled participants who come from active duty, Reserve, and National Guard samples. The study is designed as a longitudinal study, and participants respond to survey questionnaires every three

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years. The surveys are long and include a variety of validated measures to assess mental health, behavioral health, and physical health. Although the survey captures a variety of measures, we have not assessed financial stress.

In addition to our surveys, we are able to link to DOD and other data sources. We are able to use Social Security numbers and link to military healthcare utilization data, to deployment dates and locations. We collaborate with the Veterans Administration (VA), and we hope to link to VA databases in the near future. Currently the study has an enrollment of more than 200,000 participants. Participants were enrolled in four panels, beginning in 2001. We are now in our 2014 survey cycle. The study did not enroll a panel in 2015, but in all previous cycles we have enrolled a panel.

The first panel was intended to be a cross section of the military population at the time, in terms of length of service. This panel is older, on average, compared to the later panels, which were intended to sample participants in their first term of service. Participants in panels 2, 3, and 4 tend to be younger. All four panels were oversampled for smaller subgroups in the military, including women, Reserves, and National Guard personnel. Panel one was also oversampled for people with prior deployments. Most of the participants have now deployed at least once. The majority of the study participants have separated from service. This is very important for us to keep in mind as we work on the study over time.

How do we design surveys that capture the relevant questions for actively serving personnel versus separated personnel? We have not captured financial stress on the surveys to date. We have, however, adapted a stressful life event scale, where we selected a few specific stressful life events, one of which asks about bankruptcy. Another asks about job change but it does not isolate job loss. One of my questions is whether we need to separate that out. We are currently redesigning our next survey for the 2017 survey cycle and are trying to identify important measures to capture. We know that financial stress is one of them, but what is the best way to assess it? I am hoping this meeting will answer this question. In discussing the design for the next survey, we are thinking about including a single item to measure financial stress. The survey question would ask about the current financial situation of the servicemember and their family. We are still deciding whether or not to include this question in the study or whether there is a better question that we can include. We are struggling with the challenges of a long survey and want to scale it back so the question is whether we can measure financial stress without asking a whole battery of questions. If we were to select a couple of questions as a measure of financial stress, what would they be? I want to talk with any of you if you have ideas or thoughts as to how best to measure this.

The Millennium Cohort Study is a longitudinal study where we are following participants over time, and we will be following them for decades. We have a wealth of data from baseline and onward about participants' mental and behavioral health status. If we can use any of our data to identify resiliency or risk factors for financial stress, we would like to do that. Once we have a measure of financial stress, we want to look at health outcomes resulting from financial stress; however, we have not been able to do that yet. This is one of our future goals. Dr. Ursano started this meeting by saying that we are not here to learn, we are here to think. I feel like I am here to learn while all of you think, so I am interested in your thoughts and look forward to continuing this discussion.

DR. URSANO: Thank you, Deborah, it is a pleasure to have you here and to be able to share and work back and forth between our two primary studies.

I am pleased to welcome Barbara Thompson here today. Barbara is the Director of the Office of Family Readiness Policy, Office of the Secretary of Defense, Military Community and Family Policy. We have had a long term connection with Barbara and her office, particularly in the area of child and family, and more recently with Steve Cozza's work.

MS. THOMPSON: I would like to thank Dr. Ursano for inviting me. My portfolio is a little different than what we have heard today because I am more in the prevention area. What we do in military family readiness is basically the support programs for military members and their families. Dr. Kessler made a comment earlier that there are many resources available. One of our greatest challenges is ensuring people know what resources are available to them.

It takes all of us, as ambassadors and passionate advocates for military families, to know about these resources and to be able to connect families at the right time to the resource that they need. I will share with you some of the policies and programs that support military families, however, we have many additional resources that support the helping professionals who work with military families that I will not address today.

From a policy perspective, the Military Family Readiness Policy, under the Department of Defense (DOD), actually defines what military family readiness is. We have talked about the contextual issues that face military families, whether it is relocation, deployment and separations, or other stressors. We know that we need to give families the tools and the resources to be able to navigate these stressors, to know what the resources are, to be able to have the skills to utilize those resources, and to make sure that they are helping each other. We know, as a fact, that military families are helpful to each other and we need to emphasize this type of peer support.

Financial readiness is one of the primary buckets in the family readiness portfolio. We realize that financial stressors impact so many other aspects of military life, whether it is relationships, health, or other things. It is critical. We took a great deal of effort to define family readiness because we wanted to make sure that families realize that there is no wrong door to seek help. If we are all working together and know about each other's programs, we might be the catalyst to get families to the right resource. This includes not only internal DOD resources, but it also includes external partners: county extension, non profits in the local community, or some of the collaborators who are in the room today. There should be no wrong door. All of us should be in this together.

I want to highlight medical command and personal financial management because I think we find that our pediatricians and our family doctors are probably one of the most trusted sources of information that military families rely on. If you are aware of the support systems that we have at our family readiness centers, that might be one less step that the family has to go through to try to find the right resource because you can assist them in finding the right resource. By law, we are required to provide financial education and counseling to service members and spouses. It is important to highlight spouses because we know that in many instances, the spouse is the person who is helping run the financial management of the household. We want to make sure that what we do is inclusive of our military spouses.

In 2003, we started the military financial readiness campaign. Dr. Chu, who was the Under Secretary of Defense for Personnel and Readiness, recognized that

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financial readiness equals mission readiness. Our goals are to reduce the stressors that are associated with financial issues, to provide education, resources, counseling, support and protection for military members and their families. We need to recognize that this includes everyone in the family, not just the adults. In our child development programs, youth programs, and school programs, we are looking for ways to embed financial concepts into our curriculum and into what we teach our children. Why? Because sometimes children can lead their parents to water.

At our installations, we have personal financial managers on staff who have a certification to provide financial education and counseling. They also support all education within the family support system, whether they are doing financial management or they are referring servicemembers and their families to other resources in a family center. They are a catalyst for all areas of support. It is important to know that while we have these wonderful assets in our family centers, they cannot do it alone.

In the past 12 years we started a program called Military OneSource. This provides nonmedical and financial counseling to augment what the family centers are doing. Again, the financial counselors are certified and the nonmedical counselors are licensed clinicians. Together, they assist servicemembers and their families in navigating stressors associated with life skill development. It is not about therapy. It is not about diagnosis. It is about helping people with the challenges of everyday life. How do I talk to my kids or how do I overcome loneliness when my spouse is deployed, or how do I balance my budget? These are some of the ways counselors can help families. Help is available 24/7 not only in our centers but also online and telephonically. This is one of the resources that we want everybody to know about and refer families to because Military OneSource is the umbrella of support that is available to families regardless of their time zone or when a crisis may happen. If it is 2:00 am in the morning and a mother cannot help her crying baby sleep, she can call Military OneSource and somebody will be able to help her with that challenge. We have expanded the program and can now do video chats. Everything is confidential.

The Navy and Marine Corps Relief Society mentioned when there is duty to harm that is a referable incident. We would refer things like domestic violence or any kind of suicide ideation or other types of harmful behaviors to the military community. This is one area that we feel has made a big difference in how we address the issues of different generations because it can be done online at any time when it is needed versus face to face from 8:00 am to 5:00 pm at one of our family centers. Again, this one of the issues that came about as a result of the conflicts over the last 10 to 12 years, We did not always have resources available 24/7 at our family centers. The program has been very successful, and we are looking at expanding the financial counseling piece.

In the future there will be some changes with the retirement system and the compensation system. This is something that I wanted to share with you from the Consumer Financial Protection Bureau. They recently published a report on financial well-being because it had never been defined. One of the things that came out of the report was that financial well-being is not based on income. Regardless of how much money you make, you can have financial well-being because this is how you look at your life. It is not just about income. The idea that we can control our day-to-day and month-to-month finances, that we have that emergency savings in case we have a blip in our day-to-day life, and that we define a personal financial goal can create

a sense of financial well-being. It is something that we are striving for, not what the military is telling us we should be striving for. We all know how important it is to save for retirement, but if that is not your personal goal, you are not going to get much change in behavior. The financial freedom to make choices allows one to enjoy life and it is my perception of life that I want to enjoy, not somebody else's. I think that is an important contribution to what we are thinking about today.

What is financial stress? Maybe it is the opposite of financial well-being. Because we do not have a definition of these terms, it is important to look at our servicemembers and their families individually to know what their personal goals are, to know what their idea of enjoying life is because that might make a big difference in what we deliver and how we deliver it.

According to our data, we see that servicemembers feel like they are having the most difficulty in understanding their financial condition. From 2010 to 2013, there has been improvement. Why that exists, and it is self-reported, we do not know. We are hoping that part of it is related to a turnaround in the economy. Perhaps our servicemembers are using our personal financial counselors and managers to better their financial literacy. We do not know why, but this is the latest information that we have.

We try to concentrate our efforts and our resources on those who are most vulnerable. How do we reach them, and how do we provide the right information at the right time? I know the relief societies are great partners in this area to make sure that those who are in the red get the support that they need.

As I thought about attending this Forum, what struck me was the difference between prevention and intervention, and where do we meet in the middle. How can those of us in the family support arena collaborate at a higher level with our healthcare providers and our mental healthcare providers? Do our TRICARE providers know the array of family support programs and policies that we have in place so that they can refer people to those resources? Do our personal financial managers work with the medical community to say, "Let me go over and give you a one-on-one tutorial." What do you do if you have a patient who is exhibiting financial stressors when you are talking with him or her? How do we better connect the financial and the medical communities so that they are in sync, so that they are working together, so that we are leveraging our resources? How do we bring together the trust that you have, as medical professionals with the programs that we have, as financial counselors? That is a question that has not been resolved on many different levels.

No one here is from our Transition to Veterans Program Office. When we talk about suicide and unemployment in transitions, I think they need to be at the table because they are dealing with servicemembers who are separating, regardless of the time in service, from the military into the veteran community. What is offered in the Transition GPS (Goals, Plans, Success) training courses to better prepare our servicemembers for these transitions? We are learning that separation from the military can feel like having your identity taken away and the impact on your perception of self-worth can be difficult. Servicemembers are not just looking for a job, going to school, or becoming an entrepreneur. There is more work that needs to be done with this community.

I am a child advocate. That is my passion and I think that is where we need to start with financial education. The Consumer Financial Protection Bureau's research shows that children as young as 3 years old can learn about financial concepts. If we teach children the tools to better understand financial concepts and financial

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Is financial health or financial stress a health behavior?"

This question reminds me of an article that looked at funding to encourage clinicians to ask about health behaviors, and what the outcome was of paying clinicians to ask about health behaviors, and did health behaviors change afterwards? The answer was yes.

stressors, they will be much better servicemembers if they join the service, and if they do not, they will be much better civilians. How can we embed all of these great concepts into our early childhood programs, our school age programs, and our youth programs so that children learn the skill sets to be able to lead a less stressful life?

DR. URSANO: Thank you, Barbara. Barbara's question, "Is financial health or financial stress a health behavior?" reminds me of a major article recently published in the *Journal of the American Medical Association* that looked at funding to encourage clinicians to ask about health behaviors, and what the outcome was of paying clinicians to ask about health behaviors, and did health behaviors change afterwards? The answer was yes. Although the effect size was small, it was cost effective.

DR. URSANO: I have the pleasure of introducing another good friend and colleague. Many of you know that General Eric Schoomaker was the former Surgeon General of the Army, was Commander of U.S. Army Medical Research and Materiel Command and was Commander of Walter Reed National Military Medical Center. He has looked at this problem and has had to deal with this problem and challenge from many directions. He currently is Professor and Vice Chair for Leadership, Centers and Programs, Department of Military and Emergency Medicine at the Uniformed Services University.

GEN. SCHOOMAKER: When I was invited to attend today, I was baffled as to what exactly I was being invited to do. Bob called and asked if I was available today and tomorrow, and I told him I had today open. The next email was from someone saying you are on a panel and you are going to speak. This is a long standing pattern of Dr. Ursano. When I first came, I thought that maybe I was invited because I would be the oldest servicemember in the room, but then I remembered that Bob and I went to the same high school and he was a year ahead of me, so he is older than even I.

I am going to take advantage of the fact that I spent most of the last sixty plus years of my life in and around the service. I was an Army brat, like many of you in the room and others who have spoken already. I was commissioned in 1970 and took a deferment in order to go to college, medical school, and graduate school. Coming into the service, I did a residency in medicine. With the exception of the training breaks outside of the military to learn what civilian life was like, and on the way to buy a Nehru jacket and a lime-green leisure suit so that I could transition into my civilian life as a retiree, I have spent pretty much the last forty plus years of my life in and around the service. During that time, I lived in twenty-one different communities. I moved eight times as an Army brat, and I moved approximately fifteen times as a career soldier. I have seen many of the behaviors that we are talking about today.

I am going to go back to something that Tony Stamilio said, what has changed, and what has not changed? Maybe rather than talk in very specific terms about what is available here today, I can take you back a few years and give you my perspective on things that have changed in the years that I have been associated with the military.

If you look at the programs that you have heard about today, family programs, etc., I think you will recall that most of these programs did not exist as recently as the mid 1980s. The major change that took place within the services was the dissolution of the draft in 1974–75 by President Nixon. It took the services ten years to realize that the dissolution of the draft had a huge impact on what kind of force they were attracting as an all-volunteer force. When I was a kid growing up, families were the minority not just within the Marine Corps, which is true today, but even within the Army.

When my dad deployed to Korea on very short notice, in September of 1950,

my mother and her friends were escorted off-post because you did not have access to family housing if your soldier was deployed. My mother had to find off-post housing. They were not paid for six months, and it was very common not to hear about what your soldier was doing for three to four months at a time. That was not different than World War II. What has changed that has made a difference? I watched behaviors, particularly my parents' behavior. I think the psychologists called one of the behaviors I observed, hedonic adaptation. I think that is some of what we are facing today over a generational span.

My parents shopped in commissaries and bought generic peanut butter, which the kids then stirred for the next four hours to try to get the oil into the peanut butter. By the time my dad was a Colonel, and certainly by the time he was a retiree, my parents would not accept anything less than something out of Whole Foods. To go back to stirring peanut butter would have been what we heard about earlier, a significant loss. I am concerned that this is some of what we are experiencing now.

We have offered many programs and a great deal of support at families, soldiers, and servicemembers, in general. I do not know how well servicemembers are adapted to go back to an earlier phase in life. Because, as it was pointed out so vividly by Dr. Hobfoll, the Conservation of Resources theory says that resource loss, and I'm quoting, "is disproportionately more salient than resource gain." One remembers losses, and they impact us psychologically far more than improving lifestyle, including benefits, to include the material benefits of base pay.

For the recent wars, the then Chief of Staff of the Army, Eric Shinseki, began to realize that if we were going to sustain the kind of warfare that we were experiencing in the Balkans and had seen occurring even going back to the 1983–84 Beirut excursion and the blowdown of the Marine barracks, that we were going to have to recognize that readiness was linked to well-being. He chose the phrase well-being very specifically to differentiate it from quality of life.

It is important to remember is that civilians played a very important role in this as well. My medical command was seventy-five thousand strong, 60% of them were civilians and not all of them were retirees. Civilians played a big role and we had to invest in them just as we had invested in everything else. Remember, this is taking place at the end of the 1990s, when one of our real challenges was competing for highquality individuals to come into the service.

Eric Shinseki talked about the fact that we had to create programs that encompassed all of these critical elements, so that decisions to come into and remain within the service were supported by programs offered, therefore striking a new balance that was mutually supportive of both the demands and the expectations. I think that is what we are experiencing today, especially more vividly, after fifteen years of contracted conflict. Shinseki liked, and we adopted, the notion of well-being, again, rejecting the notion of quality of life.

The quality of life programs started with John Wickham in 1984, when he had the Year of the Army Family. He said we have to begin doing something to acknowledge the Army family as a critical component of the entire equation if we are going to be successful with the all-volunteer force. Wickham was a dedicated family man and felt very strongly about the importance of families. When we looked at the quality of life programs historically, we found that for many people, especially those who funded them, they were nice-to-have, gold watch kind of programs. We were gilding the lily. In fact, you can go back through the history of quality of life programs. In years we felt that Congress was going to look for low-hanging fruit,

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quality of life did not even appear in our programs because we were concerned that if they had visibility, they would be chopped.

We adopted the notion of a well-being program that was a holistic approach to the soldier and his or her family. Again, I think this transcends to other services, as well. You will see the roots, then, of Comprehensive Soldier Fitness and Total Force Fitness. In fact, what I am going to go through here, in many respects, foreshadows the Comprehensive Soldier Fitness Program of George Casey, and eventually the Total Force Fitness of Admiral Michael Mullen when he was the Chairman of the Joint Chiefs of Staff.

Our construct was that the soldier, the civilian, the family member comes into the military with aspirations. First, is an aspiration to live. This is what we were competing for. The Army provided, through the leadership and specific programs, supplemental programs like base pay and housing, and healthcare to compete and maintain them. We heard from the force that there was a strong aspiration to serve, and we gave them leadership and training, and everything else that went with it.

This is not a construct that necessarily exists today, but I think it is as good as any to describe a multifactorial approach to how to envision well-being. We have talked about it today. This is an aspiration to connect to others. For that, the Army gives you specific programs and specific facilities. By that time we had eliminated community clubs. We found that when we eliminated our officer and enlisted clubs soldiers, officers, and civilians, had no place to go.

Everybody thought that the Internet was going to be the ultimate tool to knock down rumors, and it had just the opposite effect. There was no place to go to connect and to enrich the community. Fitness facilities and barracks are not simply extensions of training. We put fitness facilities together for specific kinds of fitness. They are not Gold's Gyms that are all about strength. Army fitness facilities are about strength, flexibility, and aerobic capacity. We make a big point of the differences.

The same is true with barracks. Most of the problems we were beginning to see were with soldiers who were isolated in barracks, or what the Air Force calls dormitories. If soldiers are isolated, they tend to be more likely to commit suicide, to experience isolation and be marginalized. There was a major concern when we went to the one-plus-one barracks concept because it had two separate rooms with a shared bathroom and small kitchen. The layout allowed a soldier to be isolated. Especially early in their careers, our concept was the barracks was where soldiers learned to socialize and work as teams, which is what the military is about.

Here is the "fill out of the rest of the construct." The programs that the military could not provide, the community provided. The other thing we felt is that this entire construct is held together or dispersed by a series of forces. Together, we said that well-being constituted the end state of institutional strength of the Army.

What we struggled with at that time, just as we are struggling in this room today, is how do you measure outcomes? If you plug in a program, how do you measure the outcome? If you plug in a program of improved recreation, or improved education, or even some of the counseling that we have heard about today, how can you prove that it impacts the end state and the institutional strength of the Army? The intangible forces that we were concerned about were positive forces which keep the construct together: respect, meaningful work, and caring leadership. Negative forces that disrupted the construct included, for example, turbulence, poor command climate, and the unpredictability of life. I bring all this together not because this is current, but because I think it is related to what we are talking about today.

You already heard my thoughts about the Conservation of Resources theory and how it relates to these constructs. John Fedrigo spoke earlier about living the Air Force life. We do not train it; we grow it. I think what you see here is the construct by which airmen, soldiers, and others grow a multifactorial sense of identity around the service. It speaks to Matt Nock's point that you need to understand interactions across these programs, that any single element of the program cannot be pulled out in isolation because they work together as a construct. This is not the hierarchy of scale where you fill from the bottom all the way to the top. This is one in which you simultaneously fill all the levels.

Finally, I think you heard in the comments that both Kimberly Elenberg and Ron Kessler made about the importance of connection and the role that the community may positively or negatively play in this. As the community begins to encroach more and more on connectors because of the inability of the service to maintain the support system and deliberate connection we said, again, you have eliminated some of the important connectors of the Army by not knowing how they fit in with the totality of this model. What the servicemember then has to do is to turn outside and not necessarily find what they want.

What we found talking to families and soldiers over the course of the study that was conducted at the Army War College in 2000 was, as mentioned earlier by Dr. Hobfoll, that most families and servicemembers could remember the low points but not the high points. They forgot about the good housing at Fort Lewis, when they moved to Fort Stewart or Fort Gordon and got bad billeting. They forgot the fact that Fort Carson had a fitness center on every corner, and Tom Schwartz had put in fifteen or twenty miles of rubberized asphalt track running throughout the post. They only remembered that they were now on a post that did not have fitness centers and did not have a running track. It is the notion of remembering the losses more than the gains.

The consequence of this was the creation of the Installation Management Command because one of the things that we learned was the need to standardize across the Army all of the elements that made this important. We borrowed that from the Air Force. The Air Force learned many years ago, I think at a time when they topped the services in suicide rate, that you had to standardize around support structures and systems for families and airmen if you were going to make life meaningful for them.

The final thing I would like to point out is how small the medical piece is relative to all of the elements of well-being. This is what we all have learned, as well. The social determinants of well-being and health far outstrip the medical, approximately eighty to twenty. Education, material well-being through employment, security in the community, and spiritual well-being dominate relative to the medical programs. I think this awareness gave many of us the courage to step forward and say this has to be a command line program and not a medical program. This is why General Casey, at the Conference of Soldier Fitness Program, which had many of the analogs here to a multidimensional system of well-being measured by the Global Assessment Tool, argued not to make this a medical program or it would be ignored by everybody who has to pay the bill and ignored by the line in general. I said that this was a precursor, in a sense, to what we now know as Total Force Fitness, which is a multidimensional, multidisciplinary approach to comprehensive well-being for the force.

The last thing I want to talk about is the intensity with which, over the last ten years or so, we have looked at mental health programs. We will have to think about

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some of the requirements if we are going to be effective in continuing the progress that has been made and turn the tide on some of the negative trends.

First is the notion of a deployment cycle. This is the deployment cycle that was used over the course of 14 or so years of war by the Army. You were getting ready to deploy — you were standing down and recovering from a deployment. However, if you were available, you were deployed. This was called the dwell time, and this was the boots on the ground time. What we know from Paul Bliese's work and others is, that ideally, the ratio of dwell to deployment time should be about a 3 to 1 ratio, or a minimum of twenty to thirty-six months. We were never able, during the course of most of the intense fighting, to do better than a 1.5 to 1 ratio of dwell time to deployment, which meant that soldiers and their families and communities were not able to connect effectively and return to a baseline rate of mental health.

I think that speaks to the earlier comment Ron Kessler made, that if you are getting into trouble, you can begin to spiral downward very rapidly. This is also what I think we saw. For example, as you gave people less and less time to recover between deployments and get to a baseline, they had more and more opportunities to get in trouble in other areas that included: family violence, alcohol and drug use, and other similar behaviors. Efforts were made to try to get ahead of the problems created by the ratio of dwell time to deployment. We created The Comprehensive Behavioral Health System of Care that was executed by General Horoho after I left. It has a series of multiple touch points to synchronize risk assessments. Our psychiatrists taught us that the best predictor of future behavior is past behavior, so you better start engaging people in anticipation of problems.

Anyone who does not understand what the Army has been through or what the military has been through over the last few years, should rent the movie, *Restrepo*, a 90 minute documentary made by Sebastian Junger and Tim Hetherington. Hetherington was later killed in Libya. Junger wrote the book, *War*, and before that he wrote *The Perfect Storm*. It follows a company and an even smaller group — a platoon, of soldiers from the 176th regiment out of Vicenza, Italy, who were in eastern Afghanistan. The platoon was there for fifteen months, fighting in probably the most dangerous part of Afghanistan. Ninety percent of all the ordnance in the military was dropped in this one sector of eastern Afghanistan where that brigade was and the platoon saw about 75% of that. We saw impending problems with suicide and other major issues when that unit came back. In anticipation of the problems we began pre-positioning mental health assets downrange to begin to talk to soldiers and talk to families back home. We wanted to be prepared for what was going to happen when soldiers returned, and be prepared for follow up. We also had the same program available for families. Not all of this has been successful because we clearly have not turned the corner on suicide. I want to point out that, as we prepare for a time when support for these programs is going to begin to wane, we have to be sensitive to how intensive and how coordinated and synchronized programs have to be if they are going to be effective at all.

PANEL 4 DISCUSSION

Moderator: Robert J. Ursano, MD

DR. URSANO: We have heard perspective on the broad picture of the Army and the question of how one approaches a total force and thinks about issues of prevention, as highlighted by Barbara, in particular. We have heard the importance, again, resonating to Stevan's comments, about how losses can endure, perhaps, longer than the experience of gains. We heard about rephrasing the question of well-being and the question of financial well-being and force well-being, perhaps in contrast to the question of quality of life.

DR. HOBFOLL: We have heard very informative talks that raise many issues. First, a comment that the U.S. military went from a sort of a scrappy fighting force to a very professional fighting force, modeled more after the French and the British forces. As General Schoomaker said, this happened when the military transitioned from the draft force to the all-volunteer Army.

That is an incredible transformation that is remarkable, and that should not be forgotten. We should also remember this happened during the time of sustained combat and warfare against a new kind of enemy that we did not and still do not really understand. In addition the warfare was about twelve to fifteen years longer than we were geared up for. I think all that is exceptional and needs to be commented on.

It brings up my thoughts that each life is critical. I want to stop every suicide I can, but the amount of life years lost by PTSD, with heart disease coming about fifteen years ahead of their cohort, and diabetes ahead of their cohort, is hundreds of thousands of life years. I think we also have to be mindful, in terms of our programming, of where we put resources when we have tens of thousands of troops coming back with PTSD and TBIs. This has to be balanced with the fact that financial pressures really affect PTSD and are affected by PTSD and TBIs. It is not that we leave financial stresses by any means, but I am a little wary of looking at suicide, unless we keep these other things in the discussion. Dr. Schoomaker, I would be interested in your comments, given the perspectives that you had to take as a Commander.

GEN. SCHOOMAKER: I would agree with you. I think most people who have served in uniform would have to agree about the impact of the all-volunteer force. The nation lost a great deal when it eliminated the draft and some form of compulsory service to the nation. I think my kids suffered from not having had that. You learn some very important elements of emotional intelligence and delayed gratification. This is the delayed gratification marshmallow experiment on steroids when you are in uniform. You learn this notion of working for something greater. I

We heard about rephrasing the question of well-being and the question of financial well-being and force well-being, perhaps in contrast to the question of quality of life.

If someone is dealing with the same financial situation as another person, why does one person feel stress and the other person does not?

have had many young soldiers tell me, you know, sir, this is the first job I have ever held where if I came to work or did not come to work made a difference. Every other place I have worked, they just went out on the street and got someone else to flip hamburgers.

This is a really important element. The flip side of this is we could not have the professional military we have today with a draft force that is only in for two years. I do not speak for those who operationalize, but I think it is too demanding, and the intellectual challenges alone are too great. How long does it take to train a combat medic now? I think about fifteen, maybe thirteen months. It cannot be done as quickly as it once was. Looking at suicide, most of us inside the Pentagon assumed in the discussions, that it was not suicide, by itself. We thought of suicide as the tip of the iceberg and that below the surface was a collective amount of misery that we could not see or measure, but it was changing dramatically. Until and unless you show us that this is a targeted group that is quite unique from everybody else, and that everybody else is not in that same state of gradual deterioration in their well-being, then I think we have to treat it as a symptom of a much greater problem within the force.

DR. MOTTOLA: Throughout the course of the day, we have been talking a great deal about financial stress and what it is. Deborah's presentation made us think about how we would measure financial stress and put it in this incredibly, potentially powerful study. There are obviously objective measures of stress. For example, you have a large amount of debt. You are spending more than your income. It would seem to me, at least as far as financial stress goes, in relation to suicide and other forms of mental health, that there is an emotional component. It might not be enough to say, I am spending more than my income, or I am in over my head. You might have to say, I am concerned, or I am worried. As we think about financial stress, we have to think not only about the objective nature of it, but the emotional nature of it. Probably, that will more likely relate to negative outcomes than, perhaps, a purely objective assessment.

GEN. SCHOOMAKER: I think the perceptual aspects of this are critical. That is why I talked about the notion of hedonic adaptation and I wonder how much it is embedded in the millennials' culture. About a year ago, I remember hearing about a poll or survey that reported many of this generation would rather appear to be wealthy than to have to work to become wealthy. That comes about through a great deal of social media and other things that confuse celebrity status with achievement. Maybe part of our problem is we are dealing with people whose perception of being financially stressed means they are not receiving material rewards to the degree that they feel they should to be successful. I like to think that if we did a better job of what was talked about earlier in growing the airmen into the culture of the service, where you see something much richer than simply material wealth, it would help us, but I may be wrong.

DR. BOOKWALTER: I have not studied this topic, but it is a good question and one that I have been thinking about during the discussion today. Yes, we can have a survey question asking if you are in over your head, but what gets you there? What about the risk and resiliency factors? If someone is dealing with the same financial situation as another person, why does one person feel stress and the other person does not? What are those factors, and do we have the data to look at that?

MS. THOMPSON: I think that stress is in the eye of the beholder. What might stress me out might not stress somebody else out because of the way I grew up or

the way I deal with money. I think the question is how do we objectively define what financial well-being is, and then, what is the opposite of that? If you are not meeting those goals, how do you react to that?

MS. CONNON: Dr. Schoomaker and Mr. Stamilio asked the question, “What has changed?” Later, Dr. Schoomaker, talked about the need to standardize. I have been sitting here all day thinking about the boots on the ground perspective again, since I am working in the trenches with clients every day. What has changed to add to clients’ stressors? I see the civilianization of the pay offices, so we no longer have that trunk where the lieutenant comes out and pays servicemembers their money. We have civilians in the office who are giving out information from a printout sheet that no one understands. There is no one in the office that understands the servicemember, and his pay problems because they are not in his situation. For example, the servicemember changed housing, and has to standardize that to a private venture, so it is no longer easy. Now he receives money in a paycheck, and he has to figure out how to pay money back to the housing office. In the past, servicemembers did not receive a housing allowance. Some of the new kids cannot figure out how to set up a housing allotment, and some of the older ones are asking, “Why do I have to pay this? It’s already paid for. I don’t pay for housing.”

Another issue is that some of the banking institutions are paying our servicemembers two days before the official payday. For example, payday was Sunday, the 1st of November, yet servicemembers have access to that pay on Thursday, October 29th. However, the servicemember has their account set up to pay on the 1st and the 15th, the official pay day. Because of the inability to delay gratification, some servicemembers are using their debit cards, and have spent that pay check before payday has even arrived. So with some of the new procedures that are happening with money, we have given servicemembers opportunities to be less cautious or less responsible with their money.

GEN. SCHOOMAKER: I would agree with you. Tony Stamilio and I were talking about the story of the lieutenant with the pistol and the bag of money and one part that he did not talk about was that after the lieutenant gave the money to the soldier, there was a 1st Sergeant right outside the door who said, “I was visited by the guy who you bought the car from, and you owe him twenty-five dollars,” and the sergeant takes twenty-five dollars and says, “Oh, and by the way, you have a girlfriend who talked to me last week, and you also owe her money,” and he takes another ten dollars. Everybody knows that there was a bigger network out there of financial consultants that were advising the soldier. One of the more positive things I heard today relates to what Bud Schneeweis and Gary Mottola are doing to try to raise the bar on financial literacy. I think part of the issue that we are facing is a societal problem of financial illiteracy in the helicopter generation of kids.

DR. URSANO: I am reminded of the complexity of early studies on PTSD, since it came up. Ron, I think you and Evelyn Bromet were involved in some of this debate. The first question was what was the epidemiology of the events. Then trying to understand, given that an event happened, how many people experienced distress from it. They are separate questions. Approaching that in a methodological way is a substantial undertaking. It is a big undertaking to think through the different types of financial stress, to understand their prevalence, and to understand, given that prevalence, how that is related to the degree of distress.

CAPT. ELENBERG: In general, DOD has formally adopted the Total Force Fitness as a framework for looking at how we can achieve well-being and, therefore,

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have achieved social
well-being?*

readiness. Likewise, we have adopted the National Prevention Strategy. It is kind of like a pincer approach, with the National Prevention Strategy addressing the community and this paradigm addressing the individual. I think that is powerful as we move forward. When I think about finances, I look at each of those domains, and I can see, from our discussions today, how finances impact every single one of them.

One of the questions I had is what is the financial impact on each domain? Then do we take that paradigm, if there is a financial impact to each domain, and where does that fit? Is it its own domain? Is it a ninth domain? Is it part of behavior? I am not sure where we fit it into this paradigm that is shaping the way the services are developing their programs to address well-being. I would like to think about that and I would like to hear your thoughts.

The second question I would like to ask relates to a point Barbara Thompson made. She asked, "How do we know we have achieved financial well-being? How do we know we have achieved social well-being?" How do we know we have achieved physical well-being, environmental, medical, spiritual, and nutritional well-being? How do we know we have achieved the overall Total Force Fitness, if that is what we want to call that gestalt? It is a big question. I know that if I take a PT test, and I have to run two miles, I have a standard, and I have to meet that standard within a certain amount of time. If I do not meet that standard, I have failed. So I know I have at least a baseline, and then I can go optimal, but if I do not meet that baseline, I fail. We do not have a standard for this. It becomes hard if we cannot say we have a problem in any one of these areas or the whole, overall. How do you lead people to consensus that we need to address it?

GEN. SCHOOMAKER: I think that is exactly why General Shinseki wanted a construct like the framework for Army well-being. What we did not have in the quality of life programs was anything that justified why we were putting money or other support into any one of these domains. What he wanted from us was a construct that allowed us to programmatically design and manage programs, and the construct would fluctuate over time. You would monitor the institutional strength by some substitutes or some representatives of it like recruitment, retention, readiness and performance. You would be able to shift, if necessary, to better support programs that were more directly related to the ultimate outcomes.

I would say that is exactly what has to happen with Total Force Fitness (TFF). TFF has to be placed into an operational framework where it can be programmatically managed, tracked with outcomes, not just simply inputs and outputs, but true outcomes that are related to what the military is here to do and what it takes to recruit and retain quality people. I think your earlier comment is profound. If I had to answer that question right now, I would say not to make TFF its own domain because if you do, people will pour money into it and they will ignore everything else.

DR. URSANO: Paul, I wonder if you have a comment. I know we will hear from you tomorrow, but you are a unique package of a military career organizational psychologist who is now in a school of business.

DR. BLIESE: I do have a couple comments, but I was going to save them for tomorrow. The general gist of what I was going to say is that when I look at the time that I was in the military, and the research that we did, and the problems that we addressed in the military, it is interesting to see the parallels when you look at industry. One of the things that I was able to do last year was study *The Journal of Applied Psychology*, where I am an associate editor. The journal is one hundred years old. It is pretty cool, at least for a Psychology journal, to have been around for one

hundred years. As part of the centennial, the journal is looking at certain domains. One of the domains that they asked me to write a review on is stress and well-being. The question is how has that domain changed, and how has the way that we have looked at it changed over the past one hundred years. I will talk more tomorrow, but some of the things are very interesting. *The Journal of Applied Psychology*, the premiere journal in Psychology, should look at things like how the economic events associated with the Great Recession would have impacted the stress and well-being of individuals within society. Very little of that discussion occurs. I want to offer some ideas about why it might be that, academically, we are not looking at some of these major events. Maybe these major events are not, in fact, the ones that are primarily associated with negative outcomes, and give some ideas about some potential research agendas that I think will mirror much of what you heard from our Harvard colleagues. I will cover this in a more systematic way tomorrow.

When I look at the time that I was in the military, and the research that we did, and the problems that we addressed in the military, it is interesting to see the parallels when you look at industry.

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PANEL 5: PERSPECTIVES ON FINANCIAL STRESS II

*Speakers: Paul D. Bliese, PhD, Robert M. Bossarte, PhD,
LTC Dennis McGurk, PhD, Ronald C. Kessler, PhD, William P. Nash, MD*

DR. URSANO: I asked Dennis McGurk to join the panel today as we think from the perspective of what was discussed yesterday. We moved in broad strokes from the question of programs to science, from the issues of financial stress, financial indebtedness, and financial well-being, to how an adversity is embedded among many adversities. We discussed whether or not it is the perception or the relative experience of financial “lessness” that influences one’s health and behavior, and to what extent this is related to other economic issues occurring during a particular span of time in which one is living.

All of this transpires in a family setting and has a developmental picture to it as well. This concept returns to Shelley’s comments about the importance of time perspective and future time perspective in the ability to do financial planning as well as in other aspects of one’s life. That might be a common element influencing the question of financial planning, financial well-being, as well as other aspects of behavioral health. Our panel has the opportunity to span widely and to bring us home in a way that will enlighten our way of thinking.

Our first speaker is Paul Bliese. If you are familiar with the Walter Reed Army Institute of Research, (WRAIR), you know Paul’s name. If you have read anything that has to do with the previous war, you know Paul’s name. Many of us know Paul for his depth of science, and for his creativity and ability to ask questions about wars in ways that have not been asked before and have not been answered in the ways Paul has addressed them. He is presently an Associate Professor at the Darla Moore School of Business at the University of South Carolina.

DR. BLIESE: I want to tie together some of the themes that we heard in the latter half of yesterday and hopefully, not miss key themes discussed in the morning before I arrived. I have tried to broadly integrate my talk with the key points that were discussed yesterday.

First, we are looking at financial stress. One issue discussed yesterday was that financial stress is a complex stressor with many facets. We heard that DOD has

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a number of programs designed to ameliorate servicemembers' financial stress. It would be fair to say that there are gaps in knowledge about both of them. We do not really understand the key dynamics surrounding financial stress as a stressor by itself. We know financial stress is related to many different factors. We also do not totally understand program efficacy. There are a number of DOD programs in place, but we are not sure which ones are most effective, or how to evaluate whether programs are effective. It is easy to criticize DOD for not knowing these things or for not having a program in place. It would be more interesting to acknowledge that DOD is often ahead of the game. What we see, even with the limitations in our knowledge, is very typical of the broader field. It might be interesting to take a broad look at the larger context of stress research, and then make a pitch within this context for the broader use of randomization and more reliance on longitudinal designs.

The Journal of Applied Psychology will be 100 years old in 2017. I am an Associate Editor and we thought it would be interesting to select some key topic areas to assess how the field has changed over the past 100 years. Recently, we wrote a paper that looked at the key findings on the topic of stress and well-being. I will share some of the key findings in the 100 year review. I will talk about some of the randomization trials that we did in the U.S. Army and, finally, I will talk about the longitudinal variance of that research.

When we looked at stress research over 100 years, we identified 606 articles that were published in *The Journal of Applied Psychology*. If we look at the number of articles that have been published having anything to do with stress, we see patterns as a percentage of the total number of articles. Jokingly, we identified three areas. First was the *Dark Ages*, which is about 1917 to about 1967. In this 50-year period, the number of articles on stress was between two and five percent. We called the period from about 1967 to 1997, the *Renaissance* and we called the period from 1997 to the present the *Industrial Revolution*. How would you summarize that? It is easy to show the number of articles that met the criteria. We took the abstracts and put them into our stats package taking out all the punctuation and all the stop words like "the" to see what key words emerged as themes. We made word clouds with the size of key words proportional to the findings of the word search. There was clearly a pattern to the word clouds.

For a word to come up in the search, it had to occur in approximately 25% relative to the total number of publications. There were about 200 articles in each of the three periods. What we found is that the field has become much more consistent in the use of terminology. In the earliest period, if the topic had anything to do with stress it was typically found in something like a book review. In the last 20 years we see increased use of terms such as COR theory, resources, conservation of resources, and similar terms. The last 20 years is also very much focused on burnout and family.

Rather than focus on what we found, I would like to focus on what we did not find because in some ways that is more interesting. In the first 50 years we did not find many links to major stressors. *The Journal of Applied Psychology* looks at work stress, among other things. We had the Great Depression, we had several world wars, and we had other events that should have driven a great deal of stress. Yet, very few articles in the first 50 years identified those stressors. In the past 50 years that has changed. We know this because when we hit economic recessions and similar topics, these topics appeared in the Journal. Also noticeably absent, even in the last 50 years, are words that have to do with causation. When we look at the word clouds

and word frequencies, what we are seeing are words like relationships and related. Words like experimental, randomly, trial, and caused are missing.

We have many articles that describe phenomena, but very few articles that let us know that something is causing something else. Again, how do we tease out the implications of things like financial strain or financial stressors and look at how these are related to strains? If we are thinking about setting a research agenda, how would we look at a topic like financial stress? There are some ethical issues with randomly assigning stressors. We cannot take groups of soldiers and place one group under financial stress and leave another group financially stress free. The bigger issue that we should, as a field, be able to evaluate is the efficacy of interventions. While we may not be able to randomly assign the stressor, we should be able to get some idea about whether interventions have efficacy.

In 2008, Richardson and Rothstein published a meta-analysis on stress management intervention programs. In order to be included in the meta-analysis studies had to have an experimental group and a control group. They identified thirty-eight articles between 1977 and 2006 – a twenty-nine year period – that met the scientific requirement to have a randomly assigned experimental and control group. These studies were published in *The Journal of Applied Psychology*, and in applied psychology journals in general. We could only identify thirty-eight articles from a twenty-nine year period. This means that as a field, not just DOD, on average we are generating 1.3 randomized, good scientific studies a year. Interestingly, only three of these studies were published in *The Journal of Applied Psychology*. We published one this year, so we have covered the next decade because at this rate we only need one per decade in the Journal to meet our norm. I am emphasizing this point again because it is easy to say that DOD is limited, and that DOD is not doing randomized trials. We are beating ourselves up, however, it is not DOD, it is the field. This is the state of the knowledge and this is what is happening within the field, in general.

I also thought that perhaps stress research is atypical. Maybe other areas of applied research do better with randomization. I looked back through the 2012 issue of *The Journal of Applied Psychology* and found that 22% of the articles involved some kind of experimental manipulation, but only one study was a true randomized trial in an organization. That article was salient for me because I was the action editor for it. I worked hard to get that article through the review process, and I am not sure it would have been published if I had not been advocating for it.

Again, stress research is largely descriptive. These are some of the issues that we face. We do not do much experimental manipulation to see how we can impact it. Also, there are very few studies that have done measurements over time to look at the impact, to look at how stress evolves, or to look at the impact of stressors on five or more measurement occasions. That is somewhat arbitrary, but there are reasons why that is useful from an analytic perspective. A key argument that I have made in other settings is that we, as a field, will have a much larger impact on policy if we use the best practices to establish causality. And I am basing that really off of the experiences that I had here in this very building when I was a part of the Walter Reed Army Institute of Research, when we began to implement studies that used randomization. We had much more visibility and influence within DOD when we did that.

At WRAIR we conducted many studies where we either did randomization or looked at measurement over time. In 2007, we conducted a study that had a large impact on the Army's Post-Deployment Health Research Assessment (PDHRA) pro-

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gram. It was a very simple study with two time waves. The study was longitudinal and tracked individuals who had just returned from a deployment and tracked the same individuals four months later. The study showed the impact of deployment on the prevalence of rates of mental health problems. So this is a case where there was randomization, but the key part of it was longitudinal. There was also a series of studies that Amy Adler was the lead on that looked at battlemind training. Carl Castro was one. These were large, randomized trials. All of these studies, for better or for worse, had an impact on the Army's Comprehensive Soldier and Family Fitness programs. These randomized trials also had an impact on DOD policy.

Since I have retired from the Army, I no longer have the ability to get million dollar projects to execute a large randomized trial. I asked myself, "What is realistic in situations where you do not have a huge team? Can you still incorporate randomization?" I encourage you to take a look at an article published in 2014 in *Psychological Science*, "The New Science of Wise Psychological Intervention" by Gregory Walton that shows numerous cases where organizations and researchers did interventions that, by any standard, would be very simple. They did not require the randomized trial following longitudinally to the extent that we were doing with the DOD studies that I referenced.

Walton's key argument is that if you think about interventions and you understand the processes of how these things work, often you can design an intervention that is quite simple, that uses randomization, and that shows efficacy. One example I like makes a great deal of sense and is very compelling. Adam Grant and Dave Hoffman at North Carolina were interested in encouraging physicians to wash their hands in bathrooms. They had a device in the bathroom that measured the amount of soap used. That was their dependent variable. For one week they measured, on average, how much soap was used in the bathrooms. Their entire experimental manipulation was to simply vary the message and the content of the message labeling about hand washing in the bathrooms. What they found, with physicians in particular, was that messages about the physicians' own health were not effective. If the messages were geared toward, "wash your hands, it will protect you", the message was largely ignored, and had no impact on the use of soap as the dependent variable. However, if they changed the focus and the message content was directed to protect patients, suddenly compliance increased. This was a wise intervention. It was a well-designed, experimental study and was easy to do. It did not cost the organization more money, but the study was able to show efficacy. I think we could be more creative in the ways that we address some of the problems in DOD.

It might be interesting, as part of our panel, to think about ways we could leverage some creative ideas within DOD to do these types of small interventions that could have efficacy and do not require large amounts of money, although the nice thing about DOD is that there are opportunities to get large amounts of money. Often we are too quick to conclude that ideas cannot be implemented because we believe that the organization will resist. My experience is that many times, if we position designs well, and think them through, they are only marginally more intrusive than any other kind of design that is not random. We find that the organization actually does not care, meaning they will not resist, or they realize how they will benefit once we explain the design.

The final thing I would like to cover is the idea that we could do a great deal more with longitudinal data. Stephen Raudenbush is a researcher who works in

educational settings. He talks about how school districts now are collecting large amounts of longitudinal data. The data exists but policies will come and go. Policies, in theory, should have an impact on the data. Rather than design a whole experimental manipulation around it, you have the ability to do a natural study because you have been collecting the data. A policy has gone into place and it has impacted everybody. The question is, analytically, how do you look at it. Raudenbush (2009) says that much more research is possible because many school systems now have simple, sophisticated, longitudinal data systems that allow researchers to examine the impact of policy changes. Everyone owes a great deal of credit to the Army STARRS project because they have taken longitudinal data sets that existed in an archival framework and are beginning to demonstrate that with these data sets, as well as within the Army, we can look at how potential changes and other events go within it.

Another example by Rob Ployhart, my colleague at the University of South Carolina, and one of our graduate students examined the effects of staffing and training on firm productivity and profit growth before, during, and after the Great Recession. This gives you a very concrete idea about how this model could work in many settings. Their data included organizations that were known to have very proactive and solid human resource practices that went out of their way to take care of their employees versus other organizations that did not. The idea is that the Great Recession is like a big experimental manipulation. What occurred happened to everybody. You can look at how these organizations were changed and make inferences about the degree to which organizations that were taking care of their employees recovered after the Great Recession and those that did not. They found a huge recovery in organizations that were taking good care of their employees.

The basic designs for these differences are longitudinal economic models. They are fairly easy to set up statistically. The challenge with these models is that, in reality, life is often more complicated than this. What happens in real life is the possibility of discontinuities and changes in slopes. But the models are all relatively easy to estimate. The trick to them is making sense of the parameters of the models so they can spit back some numbers at you. You have to try to figure out what, for example, the number 3.45 actually refers to when you interpret the models. If we look at the issues that face us in terms of the financial impacts on soldiers and then think about evaluating programs that are in place, there is a great deal we can do by thinking creatively about existing longitudinal data and how we can implement randomization into programs that are being rolled out or planned in ways that would provide solutions.

DR. URSANO: It is a pleasure to have Rob Bossarte with us. Rob is a great colleague involved with Army STARRS and, more importantly, with the Veterans Administration. Together we try to think across agencies how these issues resonate for all our veterans throughout their careers, while they are on active duty, and afterwards. Rob is the Director of the Epidemiology Program, Post-Deployment Health Group at the Office of Public Health at the Veterans Health Administration.

DR. BOSSARTE: I represent an extension of all of your work. The Department of Veterans Affairs is often tackling many of the same issues in the same population, and many of the same questions that you are trying to address. We also face many of the same limitations that were discussed by Paul Bliese. There are a number of organizational barriers that we need to overcome before we can become more effective in the work that we do.

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One of the most frustrating components in my career is building data systems and providing answers after the question has already been asked and after the answer is already apparent to everyone. What tends to happen is that somebody recognizes a problem. We will throw a solution at it and then a few years later someone asks me if the solution was the right one or whether the solution made a difference. Without any process indicators, or any randomization, or any effort or ability to go back and look, the answer is usually a shrug of my shoulders and a, "probably." We need to find a way to be more thoughtful and integrative in our efforts and in our application of scientific methods. We are trying to figure out research designs that protect our human subjects and allow us to have an evidence base as we move forward with randomization, when possible, rather than system-wide implementation and post-hoc consideration of evaluation.

In the VA we are also struggling to try to understand the person across their life course. We are asked exactly the same questions as DOD, "What was the contribution of combat deployment, the separation from family, the individual stressors over the individual's life course, and their outcomes?" We do not have great answers. We also do not have longitudinal data. We have a great deal of cross-sectional data and partially implemented evaluation efforts that are not well integrated. We are awash in data and the ability to integrate data, not always effectively, and not always with the appropriate resources.

I will present a couple of data points from the VA and, hopefully they will resonate and contribute to the conversation later on. The VA cares for about 5.5 to 6 million people annually. They come from all eras. At this point, our largest service using population comes from the Vietnam War. About 35% of all of our service utilizing veterans are Vietnam Veterans. Each year about 2,000 of those veterans who come to VA for care will die from suicide. The overall rate of suicide is about 38 to 40 per 100,000 veterans. Our rate of suicide is meaningfully higher than the rate of active duty suicide for many different reasons. A couple of years ago the VA began the behavioral health autopsy program. The program was an effort to collect systematic information on every suicide including chart reviews, family interviews, and discussions with clinicians to try to understand what was going on in that individual's life.

Most of our suicide prevention programs are aimed at better integration with clinical services, early recognition of risk, and better treatment of psychiatric disorders. The three main stressors identified in our behavioral health autopsy program are familiar to you: relationship problems, economic problems, and, probably unique to VA, increasing chronic disease and decreasing physical ability associated with chronic disease. A better understanding of stress and its relationship to these health conditions and these factors across the life course is needed. Much of our understanding at this point is in its infancy but we are growing in our ability to understand and we are growing in our ability to collect information. However, our understanding is probably less advanced than that of many of the people sitting in this room. We are trying to develop a different perspective.

About 20 years ago there was an emphasis on life success as an outcome: the impact of military service, the stressors experienced during military service, and their combined contribution to life success over the life course. In the past few years we have lost the focus on the complex interplay between economic opportunity, relationships, and other contextual factors and how they contribute to disease and stress. We are trying to build that back into our understanding as we work towards new

studies of veterans as they advance. We currently have a study on Vietnam Veterans where the focus is exclusively on life success and disease.

The final point I would like to make is a call for an integration of efforts. For me, one of the true benefits of coming to meetings like this is to learn about the work you are doing and to recognize, unfortunately, that we are doing much of the same work and we are not talking to each other. Development of models in DOD and caring for people while they are in military service are very important to understanding outcomes once they separate from service and become veterans and come to the VA. We try to develop models and programs, often duplicating efforts without knowledge of other programs or their impact, or without knowledge of the stressors that we are trying to address.

In order to address the needs of the veteran population it is important to have an understanding of the issues, a systematic way of organizing our efforts, a way to share information when it is known, and a way to make sure our approach to evaluation of interventions and services is consistent. We are doing a great deal of work and it is helpful to have the opportunity to think about these complex issues in a broader context.

DR. URSANO: Next is another good friend of all of us, Dennis McGurk. Dennis has had a lifetime at WRAIR and has been involved deeply in research initiatives for the entire program, most recently as Director of the Military Operational Medicine Research Program at Fort Detrick where he chairs the Joint Program Committee.

LTC MCGURK: We fund the majority of work across the DOD in injury prevention, environmental health, physiological health, and most importantly for this meeting, psychological health. Within our psychological health portfolio, which is headed by Dr. Kate Nassauer, is suicide prevention, substance abuse, and a large set of projects on posttraumatic stress disorder (PTSD). There is a small set of projects on workplace violence and on building resilience. We are the research arm and we manage the funding for work like the Army STARRS group.

As I listened to yesterday morning's session, I was impressed with the services that are provided across the entire DOD. I think we miss a large number of people who do not utilize the services that are available. It is important to know why people do not access services and perhaps, as importantly, for the people who do access, what made them go.

We are tackling the issue of stigma. Dr. Tom Britt at Clemson University is currently conducting a large set of studies on the issues of stigma. DOD has put a great deal of effort to reduce the traditional sort of stigma that says, "I will be treated differently. My leaders will not give me the next good job." There are other issues that make stigma very complicated. What sort of self-efficacy should we promote? We do not want to deter our servicemembers in that regard. Maybe we need to look at how we give them tools. Rather than have servicemembers come to us to get the tools, perhaps we could provide the tools. This is an important area that we need to cover.

Colonel Bliese mentioned natural studies. We could do a better job of conducting randomized studies isolating certain variables to look at certain outcomes. Those of you who have ever talked to a servicemember know that they do not walk in and say, "I have PTSD and I have nothing else. Everything else in my life is fine, I have no suicidal ideation. I certainly do not use any substances. I am clean, just PTSD." Or, "I have substance abuse and I do not have any PTSD." There are all kinds of issues when you conduct research with messy groups. Colonel Bliese talked about

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ethical issues in conducting randomized trials. Obviously, we cannot say, “Okay, we are going to give this group financial stress and not this other group. Let’s see how they do.” That is not going to happen. We can do the randomization, but we cannot exclude people who have messy co-morbidities because that is reality. That is what we see across the DOD.

We have a research continuum that goes from basic science up through epidemiological work, etiological work, prevention, treatment, and services. We try to fund projects across that continuum. We have quick studies in different areas and then large longitudinal studies like the Army STARRS project. Many people think that the epidemiological work will solve the problem. Unfortunately, when they funded Army STARRS, leaders thought, “Okay, we are going to fund this big project and it is going to solve all these problems.” Fortunately, the folks in the STARRS longitudinal study have linked up with groups that are doing the interventions like the Military Suicide Research Consortium. Some of you may be aware of the data on who is at risk, what are the target times, and the target population. Those folks are talking to the folks who are designing the interventions, be it a Virtual Hope Box, or Caring Texts. That work is really important.

In the MRMC and in Military Operational Medicine we are trying to stress getting end user input early on. What is it that you see in the field when the servicemembers come in for financial help? What are their other issues, so that we can look at meeting those needs? We need to fund research that will address what the servicemember is facing. When we fund the intervention and when it has been shown to be effective, you, as the end user are then much more receptive to say, “Yes, I will take whatever that intervention is because I helped in the design of what it was going to be at the very beginning.” We are really stressing getting end user input at the front end, and all the way through to the point where something is delivered at the end.

Financial stress is very complex. We need to figure out how to measure it because, as we fund more work, we will need to use common data elements. We have many studies that looked at different stressors and different outcomes, such as behavioral health issues. Sometimes they measured things differently. We need to establish what financial stress is. Is it a measure of how much money you lost? Probably not; it is much more complex. Is it a measure of what financial stress did to you? Did it challenge your self-image? If we can get common data elements and then have the work that is funded use them, and share the data, then we will get more bang for the buck.

It is important for this group to talk about what we can do to begin the dialogue before we leave this meeting. What is the right way to ask about financial stress? Having people all here in the same room — those who are talking to the servicemembers and the researchers who are doing the work — is just fantastic. Thank you for holding this meeting. There is push all the way to the White House to try to solve these issues. That influence is important. We can leverage that influence to do important work. Leaders in the military actually do care and they will take what is out there. If we can deliver something that is evidence based, they are happier to take it; but, if it is not there, they will take whatever they can get. The National Research Action Plan, which came out in 2012, is driving the funding that is continuing the Army STARRS longitudinal study. The Military Suicide Research Consortium also has a follow-on study that will be funded. The emphasis is there. Since 2007 we have funded many programs — the 1,000 blooming flowers that General Chiarelli talked about. We want fewer flowers, but we want better flowers with better fertilizer.

DR. URSANO: Ron is a key member of Army STARRS, and most importantly, Matt Nock's friend.

DR. KESSLER: Paul, that was a great talk. I also appreciated the comments of Rob and Dennis, particularly about the fertilizer. I am going to remember that. It is important to recognize that in practical organizations we do experiments all the time, which is to say that since we have to act and since we usually do not have strong ideas about what is going to work and what will not work, there is a certain amount of flipping a coin and going in one direction or another. As a result, you are randomizing things. The problem is, in real life experiments, we very seldom spend the time to measure the outcome.

Yesterday, people said that in 2008 the Army program for helping families in financial need was tried out in a few places and then in 2013 they implemented it throughout the entire Army. The idea was that if the Army liked it, they would pick it up. When they did it in 2008, did they randomize the places they decided to go? They only tried it out in a few places. Did they measure before or after? Did they measure cases and controls? Did they look at the effects? You know that practical people are not scientists. Usually, when you start a new program, you cannot do it in every place at once. You start out small and you build to get larger.

In industry, though, there is a tendency to be much more systematic than in places where there is not, sadly, a financial motive. In my youth, I worked at the National Broadcasting Company (NBC), where I was involved in research on the effects of media. I worked with advertisers on the effects of their advertisements and the effects of pricing policies on sales and things like that. It is extraordinary to me how many big companies will spend \$50 million dollars based on a focus group of ten middle aged women in Oshkosh. It is just unbelievable. The reason they are willing to do that is not because they are stupid, but because they do case-control test market studies.

McDonald's has a new policy, as you might have heard on television over the last few weeks, that now breakfast is all day long. They did not decide to roll out their \$500 million dollar program as just, "Hey, it seems like a good idea." They went to six test markets and they tried it out for six months. They advertised on the local television stations and they did a mini version of the whole thing. They looked at the before and after. What were their sales in the morning? Did it deplete the sales in the afternoon and so forth? They had an exquisitely fine-grained idea of what was going on. Grey Advertising in New York did the analyses for them, and charged them millions of dollars to do it. McDonald's knew, before they pushed the button to go nationwide, exactly how much money they were going to make on that program.

That is a big example. But in industry, in general, test market, case-control, before and after, and quasi experimentation are the rule. The reason they can do that much easier than in the cases that Paul talked about is because they have a very clear time series. When you look at what Paul talked about, the logic of those depression studies and so forth, those are standard, quasi-experimental designs. They are called regression discontinuity designs, interrupted time series designs. The trick is to have a solid trend for your benchmark and then you can see how it flips.

In industry, of course, they have one benchmark. How much money did we make this month? All these companies know for every one of their markets, and every large company in America has exactly 210 markets, and they know for every week, for every one of the 210 markets how it goes. Do you know why they have 210 markets? In 1948 when the television industry first started, the FCC defined the

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television markets. There were certain areas you had to have and there were only a certain number of licenses. There are exactly 210 licenses in America and this has not changed since 1948. As a result, there are exactly 210 versions of *TIME Magazine* published every week in the United States, and there are 210 different versions of *TV Guide*. When you go to the shopping market and you see *TIME Magazine* or *Sports Illustrated*, the cover of *Sports Illustrated* is the running back for your team, not for the whole country. There are 210 different versions of *Sports Illustrated* produced every week in America.

The entire United States is wired to sell things to people. Every company knows exactly what their trends are and what is going to happen the week before Christmas and the week after Christmas. They have all these measures, but when they put a place in Oshkosh to sell sausage McMuffin sandwiches in the morning instead of hamburgers, they can see what the blip is and they can say, "Yes, \$50,000 in Oshkosh this week, \$75,000 here." That projects to \$2.5 billion dollars per week, etc. We are doing it or we are not going to do it.

The trick is being able to have the same level of rationale at any organization, and many organizations have this level of rationality, not just for selling things, but for internal things, too. You get a good, solid benchmark for what you can compare. In industry, this is called continuous quality improvement, the kind of mini-experiments that Paul was talking about. Many industries do it. It is not a new thing. Go back to organizational psychology from the old Hawthorne studies in the 1930s and 1940s. Industries know how bright the light has to be to make people work quicker, how much music there should be, and should there be something else? How do you prevent people from slipping on banana peels?

There are many examples of how programs are rationalized in industry that we could bring to this environment. How do you do it? Here is how we do it. We need to think more in terms of quasi-experiments, continuous quality improvement. For example, take the kind of things we heard about yesterday from the military aid societies. You heard about the incredible programs that the military has for people in financial need. The programs are there, and they are in place. Who are the kinds of people who do not use the programs? What percentage of the people who need the programs do not use them? In industry, there are all kinds of market research studies that give you that kind of information.

Whenever we start thinking of these ideas, it means more money. Where will the money come from? It is penny wise and pound foolish not to invest that money. Most industries invest one half of one percent in internal R&D. If they have \$1 million dollars to invest in giving to people, they set aside \$50,000 a year to figure out how to do a better job of allocating the remaining \$950,000.

I know from having lived through this over the years in many different industries and different applications, if you can spend two or three or four percent of your budget doing that you will do more good for the remaining 98%, 97%, 96% of the money that you give than you would by just sort of throwing out the 100 percent. You have to be thoughtful about where you do this and you have to have a commitment to continuous quality improvement. You may try some things that do not work, and you cut your losses. You try something else, and if it works, you go national. The idea is that you follow your nose of how to get between here and there. It requires close coordination between line people and research people. The people who do research in environments of that sort are usually operations research people. They are engineers. Unfortunately, they are not psychologists although there

are some places that have psychologists. The idea is that there is a way in which there is a commitment to the process, to understanding what the outcomes are that we are interested in, and figuring out how to get from here to there.

In medicine there is a new interest in pragmatic trials, embedding experiments into routine clinical practice, and comparing to usual care rather than placebo controls, targeting the trials. By using predictive analytics they can say, "Here are some people where we know this is the right thing to do. There are other people where there is this other thing to do. Here are the equipoise people in the middle. That is where we should do the randomized trial and try out three or four new things and see which one works better." It is not all that tricky to do, but it is important to have these benchmarks.

Getting the benchmark is what costs the money. For example, there is an incredible amount of money spent on the AC Nielsen Company, which tracks how many people watched your program last night because that is how the industry makes their money, they sell advertisements. It is a huge amount of money. We do not have the equivalent here, but we could relatively easily use the data the military has from all these administrative systems that other employers do not have. Part of the reason for that is because the military is not only the boss, but they are also the doctor, they are also the policeman, and they are also the human services provider. All these things are inside the system. There is the ability to integrate all these data and get fine grain time series of time-space variation in trends. When the Fort Hood disaster happened, what were some of the blips we saw at Fort Hood, but not any other place in rates of mental health visits? Was there an effect? There are all these natural experiments that happen that you could track if you had an integrated system in place.

I was quite surprised when we first started Army STARRS to realize that this enormous array of data systems existed that nobody had ever put together. We spent about five years putting them together. It was an enormous job. Once you have it in one place, then it is not all that hard to update it. When you have baselines, doing quick evaluations of pragmatic trials that are inexpensive in the way that Paul talked about, are very do-able. You could look at the whole world. The trick is to figure out how to get a centralized way of paying for a massive baseline, and then be thoughtful about different projects.

When we first began to evaluate the effects of suicide programs, Kenneth Cox helped us. Eventually we gave up looking at programs to see what was going on already in terms of suicide programs. In some ways, we do not need to say here are our ideas about a new program. It turns out we counted over 100 different suicide programs that exist because some Commander of some base decided to do something. Do we know anything about how the programs worked? Not a great deal. If we were able to systematize the process to say that out of the 100 programs that already exist, here are the 70 that we can cross off because it is very clear they do not work. We could then narrow our focus to the 30 that might work, and take those 30 and see about trying them out in different places and tweaking them in various ways. We could get from here to there much quicker.

We need some coordination. Centralization of baselines is critical. We need to be thoughtful realizing that we do randomizations all the time. We need to figure out what is the right before and after case-control comparison loop from which to draw inferences. We need centralization bringing all the data together so we can go up the line to say here are the implications and then go down to connect with real practical people in doing your research. That is the trick. Most industries have one

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research group that conducts their studies. For example, my model, McDonald's in North America, is run by a group in California. Everything that gets done in research is located there.

I am also amazed that six to seven years into the process of Army STARRS research, I meet a new researcher every month that I have never heard of from someplace or other who is doing something that is incredibly relevant to what I am doing. When I ask Paul, "Hey, have you heard of that guy?" Paul has never heard of him. It is unbelievable how much is happening in a decentralized way in this organization. I find that striking because I always thought of the military as the place where the boss said, "Go over the hill," and it happens. It is amazing how much decentralization there is here compared to other big industries that I work with. Over the years, I have worked with General Electric — a large company — and other large companies. The level of organization there is much greater. Part of the issue is in industry they have a great advantage. There is only one thing they are looking at — how much money do we make? The end. Consequently, it is much easier for them to keep their eye on the ball because they only have one ball and it has a little sign on the front of it and you count it and it is green.

Here, it is not entirely clear what you are trying to maximize. Whenever you do one thing, as you know, you are maximizing some things at the expense of others and then there is that trick of how you balance them. That is a higher level decision, and a trickier decision. But it seems to me, in theory at least, it is very do-able. It becomes figuring out what is the right question, moving in the right direction, and getting organized in a way that maximizes potential.

I am not entirely clear, however, to whom I am talking. Who is the person that says you will go do this? Who is going to do this in the military? I have no idea. That is the other thing. Every time we go and we talk to the Chief of Staff of the Army, there is a new Chief of Staff of the Army, and this happens every 18 months. We talked to one Chief of Staff and he left and then told the next Chief of Staff. There is that kind of problem to overcome as well.

DR. URSANO: We have a couple of tasks that I am going to try and meld together that I want to keep track of. I want us to hold on to Ron's comments, and the panel's comments, and the additional parts of the panel that I am going to mention in a moment. Ron has been on this track for perhaps longer than even he remembers. Shortly after 9/11, he and I talked about the necessity of tracking surveys that would take place around the nation for our military populations and provide, essentially, a dashboard to indicate where the hotspots were, our need to be able to do that with the military, and the potential possibilities of that. With Ron's help we wrote a great, brilliant grant for that perspective which was not funded. The good news is that Ron still has the same perspective and is raising it again, very appropriately, for us to consider, not only in terms of this topic, but in general for our community. How do we better tackle this issue? I want to make sure that we come back to that point, in particular.

Our next speaker is Dr. William Nash who is the Director of Psychological Health for the U.S. Marine Corps, a group that we have had sporadic contact during the Army STARRS research program. Can similar programs and questions be developed within the Marines and, if so, how? If not, how can what has been learned be helpful? Bill brings to us a particular perspective, which is a long-term understanding of not only the Navy and the Marines, but also a vision of the military and the DOD that is grounded in mental health and our system, and how it operates practically.

DR. NASH: I will discuss some concepts from the Navy-Marine Corps Combat Operational Stress Control Doctrine that was published in 2010. This was a collaborative creation of mostly Marine war fighters, including enlisted personnel, officers, chaplains, and mental health professionals. The challenge was to determine the concepts and tools that leaders in the military need, particularly in the Marine Corps and the Navy, but beyond that, to promote psychological health in their troops. Marines came up with this, not mental health professionals. They came up with these five core leader functions for psychological health: strengthen, mitigate, identify, treat, and reintegrate.

My perspective is that over the last ten years we have put all of our eggs in the resilience basket. It is mostly the first of these five functions, but it is a sufficient psychological health program. Mitigate and strengthen are both very much about resources. You could make a case for resilience being how many internal resources a person has been able to store up at that point in their lives. Mitigate is about the balance and flow between access to resources and resource losses through stress. We are big fans of Stevan Hobfoll's resource theory of stress.

Another concept from our doctrine is the "leaky bucket" metaphor. Once again, all this was written for military leaders, not mental health professionals. The idea behind this concept is that we are all leaky buckets. To a certain extent, there are resilience traits and attributes of individuals that you could perhaps link to this metaphor by saying, "Well, certain people have bigger buckets. Some people's level in the bucket is higher or lower at any given point in their lives." We are all losing resources and all resources are perishable.

Before I came back to the Marine Corps, I was a consultant in nursing homes and skilled nursing facilities. When you lose resources like social resources and internal neurologic resources, you are not the same person anymore. You lose coping skills, and you lose many other resources like social resources, physical, mental, and spiritual resources. The first point I want to make is that we have a recognition in the Navy and Marine Corps that leaders have a responsibility for promoting psychological health. Managing the loss and gain and access to resources is a crucial component of that responsibility, both in strengthening and mitigating stress. Finances are probably the king of resources.

I am not an expert in this area, but I want you to know why I think, from my outsider point of view, that finances must be the king of all resources. The nucleus accumbens, the rewards center, is the dopamine center of the brain. It is just below the other major dopamine neurons of the brain that have to do with movement. Dopamine depletion and those movement neurons lead to Parkinson's disease. A much smaller set of dopamine neurons are the primary reward center for the brain. Researchers discovered this by sticking a little electrode in a rat's brain and hooking it up to a pedal. The rats could choose between a pedal that would give them a pellet of food and a pedal that would give them a tiny little shock in the nucleus accumbens. Rats died from starvation pressing the nucleus accumbens pedal because it was so motivating. This is the center for all pleasure, for euphoria, for all addictions, and for focus and attention.

There is a large accruing body of research about the allostatic load. In chronic stress or overwhelming stress the toxic soup of corticotropin-releasing factor and cortisol and low levels of brain-derived neurotrophic factor cause the dopamine neurons to cease to do their job to motivate positive constructive action. This leads to apathy, depression, and dysphoria. Paul MacLean who wrote, *The Triune Brain*

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in Evolution did a great deal of research looking at the evolution of these different levels of the brain. He found that the dopamine basal striatum is present in all animals that have a social hierarchy. He did research with lizards and primates where he ablated one side of the brain so they could no longer recognize, through their opposite eye, animals that were higher or lower in their social hierarchy. The animals could no longer perform their dominance displays or submission displays because this is where that function is wired. Now think about that for a minute.

Our social hierarchies, our drive to ascend social hierarchies, to have power, and to dominate are hard wired in the very little tiny garbanzo bean-sized part of our brain that motivates all pleasure and focus and attention. One thought is that social rank is a huge motivator of behavior, and a huge source of either pleasure or pain depending on how one perceives one's social rank. In 1921, Max Weber wrote a treatise about the components of social standing. He said there are three components: wealth, prestige, and power. In 1921, there may have been many more varied sources of prestige and power. You may have an inherited title or land, but in America, in the 21st Century, I argue, these are all about money. Money talks. To the extent that one has wealth, and the prestige and power that comes from wealth, your nucleus accumbens is having a happy day. Your nucleus accumbens is very euphoric and delighted because you are on top of the world; you are on top of the heap.

What about the inverse of that? What are the consequences to brain function to decision making, to relationships, to motivation of your nucleus accumbens perceiving that, based on your lack of financial resources, you are at the bottom of the heap? You are a loser. I am delighted that Dr. Ursano and others have gone down this road and opened up this conversation. For many reasons, I think that social environmental resources are much more important than the individual level factors that we have been focused on for too long.

My final thoughts are on policy implications. We use fines as a punishment as a deterrent in the military and outside the military. In the civilian world, to what extent does this mechanism for shaping behavior lead to the desired end, and to what extent are there unintended negative consequences of taking money away from already impoverished people? The second policy implication is that because of these biological changes that the brain must make in response to the loss of social status, the loss of money, the loss of what money brings, and other resources that go along with it, these people are at very high risk. I recently co-chaired a working group for the Chairman of the Joint Chiefs of Staff. I presented yesterday at the Psychological Health Counsel. The Joint Staff High Risk Behavior Working Group did not come up with any great answers or great directions to prevent suicides, assaults, sexual assaults, or family violence, but the group looked at these issues through a different lens. The best conclusion draws on industrial organizational psychology literature, occupational health and safety, culture, organizational stress ideas and organizational citizenship ideas. We could find the best predictors of the entire spectrum of adverse health and social outcomes (from suicide to assaults to criminality) if we used good multi-variate regression analyses where we let organizational, cultural, small unit family level variables compete against the individual level resilience variables.

PANEL 5 DISCUSSION

DR. URSANO: Note that Bill has brought us full circle. Jim Barrett should be smiling since we have returned to the question of rewards and the question of how we think about rewards as fundamental issues. We began with some comments, not at the neurobiological level, but at the animal reward/response and reward/loss level. In that context, we also have been able to encompass the concept of making use of the idea of how rewards are associated with prestige and power. I also link Bill Nash, in particular, with thoughtful consideration to the question of moral injury and PTSD, which fit into this picture as well. Other things affect our self-esteem at the individual level and create changes in the way in which we see the world. We have been challenged by the panel to think about the question of how to do better science and how to systematize our overall approach to allow ongoing knowledge to take place.

DR. HOBFOLL: There are two sciences here that are in opposition and sets of biases in the room that I want to bring to the fore. This is not a new argument. This is an old argument of science. Ron has, as always, brilliantly brought forth the epidemiological approach. But, theory-based scientists find the epidemiological approach empty. Ron leaves out theory. For him, theory is empty. Yet we have Bill coming in saying, "No, there's a theory behind here." I have a bias because conservation of resources theory is the most used theory in the world, but not in these contexts, not in these discussions. I am mainly consulted after SARS in China and earthquakes in Japan because to address the issues, you cannot look only at what the variables are. You have to develop interventions, and what you do has to be theory-based.

Theories are like toothbrushes, no one wants to use someone else's. That is where bias comes in because Ron would have to say my theory or someone else's is paramount, or three theories or five theories that are working together. That is not how industry works. I would argue against what Ron says because otherwise all industries would do equally well. McDonald's is failing using the same methods. They are probably the best at the use of this method in the world, because they do not have a theory that is working for them. In an article in the *Wall Street Journal*, consultants say that McDonald's rejected the theories that would have saved them. Theories are critical for both winning and losing.

DR. KESSLER: What is your prime commitment? One problem with being committed to a theory, primarily, is that it creates a lack of flexibility in many programs we have in the human services world. I am involved in this. This is a slight digression, but I will come back in a moment. I am involved with the Home for Little Wander-

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ers in Boston, the oldest human services organization in America. They founded an orphanage during the Revolutionary War in Boston because orphans were living in the streets. The pilgrim businessmen decided it was bad for business, so they wanted to put them all in one place and they founded this home. It was the first orphanage in America and it still exists. The original building is there. They have about a \$100 million dollar budget a year and they have fifty programs. They are concerned that their expenses go up by 5% each year and they cannot raise enough money to cover the increase. What are they going to do?

I have been working with the orphanage for several years on something along the lines of what I talked about before. Let us figure out how to do the same amount of good for 5% less every year because if you cannot raise 5% more you cannot meet your expenses. You have many programs and some of them are definitely not working. If you cut some of them and you move your money around to optimize what you are going to do for a fixed amount of money rather than trying to keep raising 5% more each year to do what you are doing in a non-reflective way, you will be able to win.

Here is the problem. The people who started all the programs know that their individual program works. When research guys, like me, come in and say their program does not work, then there is an obvious problem. What is wrong with my research because they know their program works? How do they know their program works? Because it is their program. It obviously works. If they have a primary commitment to the theory, in other words, if they believe that what they are doing is good, you are never going to get them to change.

The only way to change is to have a primary commitment to a process. Stevan has great ideas. There are fifty other people who have great ideas. I live in Boston and every week I find somebody who tells me they have the answer. Then I meet the next guy who has the answer and so forth. How do you know? The only way is to have a commitment to a process in an even-handed way. You try it out, and if it works, you stay with it. If it does not work, you stop.

We need a system for cutting our losses, for sorting through good ideas because out of every one hundred good ideas there will be five that are good, really good, and ninety-five that are not, and I do not have a way for figuring it out. I am not anti-theory. People who have great ideas should try their ideas, but we need a systematic way to run through them rather than get stuck on any one of them.

LTC MCGURK: I really liked the toothbrush statement. I think both groups are wrong in that each of them has value. The epidemiology folks can provide the target groups and nothing is as valuable as a good theory. As a person who is responsible for solutions, I would like to see both groups working together.

DR. BOSSARTE: My PhD is in sociology. I love theory. I do not understand it, but I love it. There is an interim here. I agree that the commitment to a particular theoretical framework does not necessarily get us where we want to be. Not that it is a commitment to a particular process, but that the procedural flexibility needs to be there to allow us to adapt and change. There is a middle ground that we have been trying to apply with our suicide prevention programs in the VA. It is the concept of consequential epidemiology, the idea that I am wed to a particular procedural framework. I am wed to a conceptual model that moves things forward. Our studies are not always perfect, our theoretical framework sometimes changes. It is that close integration of the intended outcome and the epidemiology that is driving it so that the epidemiologic evidence, the proposed interventions, the knowledge from

the field, and the people designing and implementing the programs all come together to try to arrive at whatever that end state is for me and my programs in suicide prevention. We need to prevent siloing so that we do not have absolute dedication to a particular theoretical perspective or a particular approach, but dedication to the idea related to our outcomes that will improve health.

DR. BLIESE: Just one quick comment on that from the perspective of a journal editor. One reason why manuscripts get rejected from *The Journal of Applied Psychology* or *The Academy of Management Journal* is because the reviewers say the work does not make a theoretical contribution to the field. Ideally, from the reviewer's perspective, it would be great if every manuscript had a new theory. It drives me absolutely insane and I know others who feel the same way. The problem is that if every manuscript had a new theory we would never get anywhere. You almost get beat up if you go through the process of testing somebody's theory. Often, if you go back and read the original source from which the theory originated, you realize that most authors are just quoting the citation without reading the propositions and testing them. It is a very complicated set of interrelated things.

DR. URSANO: Matt, would you like to comment about the perspective on suicide for which there are three or four prominent theories. One of them is yours and it is around focused transitions and implicit associations. It has guided much of the research in that direction.

DR. NOCK: I agree with the overall sentiment, to the extent that it exists, that we need both. We need epidemiological research to identify high risk groups and then we need some kind of theoretically-informed approach to target those folks. We need theory to guide us, but at the same time, some people who have fears of suicide often test those theories to find any evidence they can to support them and ignore evidence that is contrary. Each approach has limitations. I am especially curious to hear from folks that are inside the DOD. People have talked repeatedly about the fact that there are many suicide prevention programs. I have a brother in the Army and another in the Marines. I hear about the suicide prevention programs that they have to complete every month or so. Dennis talked about a lot of flowers blooming in terms of research, but it sounds like there is a great deal of prevention going on as well. Is there some way to test which programs have an effect, and which ones do not? I went to graduate school with Greg Walton so I am familiar with his work. He is testing some new approaches, these sort of quickie, one-off, but theoretically-informed interventions that might have an impact as well. It is a question that we have been talking about for years and years, and yet these programs persist and there are no evaluations. Are there some common barriers that prevent programs from being systematically evaluated and having new ones brought in and tested out in a standardized way?

LTC MCGURK: For suicide prevention, there is the Defense Suicide Prevention Office. Dr. Adam Walsh is here from that office and he may want to speak in a minute. They are looking at all the programs across the DOD and have used RAND and others to find out what programs exist. The eventual plan is to identify the programs that are effective. The second part is the MRMC and the Joint Committee for military operation are funding new interventions to make sure that programs are effective. Great programs are not the whole solution. Even when you find programs that are helping some populations, there are others for which programs do not work. There are new things that emerge. We are always trying to bring in new programs.

DR. WALSH: There is a process that we are going through to test the efficacy

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There is tremendous focus on the question of outcome measurement. The problem is what to measure, how to measure it, who measures it, and what we do with it.

of some of the universal training programs. One of the good news stories is that I am in the process of evaluating applications for universal prevention efforts in the DOD to put some science and rigor into evaluating and testing universal prevention programs because in the DOD we spend a tremendous amount of effort on annual, required training. Coming from and working in the Marine Corps, "Never leave a Marine behind" was one of the big, universal prevention training programs. They found some evidence that teaching RACE, Recognize, Ask, Care, and Escort, was not effective because the Marines were not able to practice it. There was some research that said if we are going to do universal training, we need to spend more time on active skills training to teach people how to intervene, and how to care. There is also partial evidence that we need to be teaching people skills like problem-solving or some other skills that may be more useful.

DR. URSANO: Barbara, do you have any thoughts about our challenges in rolling out programs and application of science to the programs that are a big part of your work?

MS. THOMPSON: I really identify with Dr. Kessler's comment about the human services. I am on the prevention side of the sphere. We do family support programs and it is a very squishy science. How do we do a control where people do not get services? We are not going to do that. In the past 15 years, our focus has been to push out programs, without any evidence base that we knew of, because we knew that families needed support. Now we are taking a step backwards to look at the evidence. We have a five year evaluation plan in process. The Clearinghouse for Military Family Readiness actually does that for us. They look at programs and put them on a continuum of evidence to see where programs are unclear or if programs have some evidence. Unfortunately, about zero have evidence.

We use that as a tool to go back to the military services to think about a logical model before you start a program. What do you want to do with it? What are your outcomes so that we are not just throwing money at programs without having any evidence that they are having an effect? We are in the process of evaluating the Military Family Life Counselors, the non-medical counseling program, as well as our spouse employment program in order to prove that the funding we are receiving is having an impact. That is the buzzword right now in the department. We do not start anything new without having the evaluation piece put into the program that we are piloting. Is there evidence behind that program? That is the bottom line right now.

DR. URSANO: These are very important points. I think Barbara is very much at the point of the spear of many of the questions of these programs. I would synthesize this. There is tremendous focus on the question of outcome measurement. The problem is what to measure, how to measure it, who measures it, and what we do with it. My perspective is that DOD, across the board, is very focused on that question. However, I do not think that we have come close to the spot at which Ron and Matt are presently referring to. For example, and this is really a meta-comment, not a comment on what we have, but of what we do not have. We have a perspective on systems of biology. We do not have a perspective on system programming, planning, and evaluation. There is not a spot in which we have an ongoing quality improvement that is built into a research project over time with three programmatic approaches. We are missing that piece.

There are also severe limitations to our programs that will always be present. They are not present in McDonald's and never will be. Number one is democracy, and number two is the Congress. They tremendously influence what one can do. If

you put a program in Alabama and you have not put a program in Alaska, you may not have that choice. But, we can get better at it. We can get better at what we do, and how to apply systems perspectives to program evaluation. That is a thoughtful question.

Kenneth, do you have any comment on this as a metasystems issue? Another spot that we have touched on with Army STARRS, and General Schoomaker makes this comment — we have never been very good at moving science into application within DOD. We get the science in one spot, we have the line in the other spot, and that transition, as General Schoomaker frequently says, is a bumpy one and it has always been bumpy. That is another piece of our system that is ripe for opportunity to change.

DR. COX: It is a challenging area, as everybody already recognizes, so I just mention in further support of some of the statements that have been made here, that we are currently in a period of transition. There always has been, and probably always will be, extreme pressures for people to act in the face of problems. Not to act is usually not acceptable for a number of reasons, all of which are meant to be good. Commanders, Generals, senior leaders do the best they can in the face of statements like, “Your suicides are going up.” You cannot sit there and say, “We are going to watch it for five years and then we are going to see if we are going to do something.” Maybe you could do better than just taking everybody’s ideas and letting them sprout up all over the place. I always consider them the thousand weeds, not the thousand flowers. How do you identify that? How do you do it in a thoughtful way and a non-harmful way? That is always the trickiest part.

To show that we are open to change, the Army has invested far more attention in the past few years to not letting all good ideas run rampant. They are allowed to terminate programs and we are starting to get better, but not to the level that people here would like to see. Formal program evaluation is far more common now. People are thinking about it. I still have to remind people that when they set up new programs, the budget must include the money to monitor them and that you have to have the outcomes identified prior to the program starting. Then there has to be a process to which you are dedicated and willing to stick to, that you will make changes, which cycles back to the process improvement techniques I talked about. I have to admit, being on the outside of this, that I did not realize that theorists all hated epidemiologists and I am not sure what to do now, because I thought most of my work stemmed from theory somewhere down the road even if I had forgotten it. I hope we can put hands across the border there and work together.

Suicide prevention programs and the Army Resiliency Directorate, which has been an outgrowth that encompasses much of the Comprehensive Soldier and Family Fitness program, have received a great deal of criticism because a high level of funding went into them. We did many things with them and some of the published material was not as rigorous as one would have liked. They have gone back to the table and they are spending time and effort to look at that and try to see if they can answer and address some of the issues that you are talking about here.

DR. URSANO: This area is ripe for a thoughtful group. We are not going to solve it here, but this process of processes is really what we are talking about. Instead of recruiting at Fort Hood, Fort Carson and Fort Bragg, what if we rolled out a program sequentially at those spots, randomized as to which one first rather than testing the program at all three sites at once? That raises all kinds of complex issues

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about how many people and what is there, but that kind of simple addition can reach further down the road to address what Ron said, and it requires more thought.

DR. KESSLER: All the examples I gave were of brand new things that you can try out which are much easier than old things that you pull the plug on. Because you say, "Well, look, everybody has the something or other program, we cannot just take it away." There are a couple things to think of design-wise. One is active comparators. In other words, you do not take it away, you say, "Somebody else has a brilliant idea that we should do it this way." The same amount of money can be allocated using this program rather than this other program that you came with. The second thing you can do is something Shelley and I talked about yesterday. In Army STARRS, we have 70,000 people and we have about 10,000 of them who say they have financial problems. I would bet you that no more than 1,000 of them even know about the existence of your programs. We could take the other 9,000 people who do not use your programs right now and you randomize outreach to evaluate it, not to go backward, but to go forward. What if we contacted them and said, "Gee, I see your service effort. Did you know that we are going to give you a case manager and hold your hand?" One thousand of those people get it and the other eight thousand do not. Did it make any difference to their life?

That is the first thing. If it does not make any difference to your life you say, "Hmm, I wonder what is being done here. Now what else could we do?" There are many brilliant people who have ideas to suggest what else you could do with that same money. If you do not, go to Stevan. He will have some good ideas because he has a theory. The idea is cost-neutrally moving around things in a way so you do more good. It could be targeting to say there are certain kinds of people who need it this way rather than that way.

MS. THOMPSON: You are right. Over the last four years, because of the concerns of the budget cuts, the military services are looking very carefully at the programs that have been pet rocks. Again, there is no standardization across a service or even across an installation at times. The question is how do we first inventory what we have available and then assess what is working. Is it really geared for this millennial generation, or it was created in 1970 and is it still relevant. How do you weed that out or how do you modify it so that it is relevant today and that there is some evidence that it is making a difference in people's lives and they are aware of it.

DR. MOTTOLA: We are talking a great deal about program evaluation and the importance of driving decision-making as we go forward. There are other agencies in the federal government that have been dealing with this for a long time. The Department of Education has an excellent website called, Doing What Works, where they vet robust studies that they find have a positive impact on education. The Consumer Financial Protection Bureau (CFPB) has also been doing some great work on program evaluation as well. There are some other programs in place that this group could probably benefit from looking into.

CAPT ELENBERG: We have theorists and we have epidemiologists. I am the operator specifically responding to Congress on topics related to this and their call to align our efforts and improve what we are doing. Over the past few days, I have learned three things. One, programs need to have process fidelity and measurements so that we know that they are effective. What is really hard is that we move every couple of years. Even when you have process fidelity and assessment, to implement it we have to keep in mind the operational tempo of the service members and think about ways to strategically mitigate that.

The second thing that we need is the epidemiological perspective. We need to identify and answer, at a population level, what it is that we need to track in real time or near real time and how do we track it? We need to do that so we can increase our actionable interventions in a timely manner. This is incredibly important because we have further changes coming associated with financial matters, therefore, we need to get a critical handle on this in short order.

Third, we have to improve outreach. We saturate people with a ton of information at the installation level, but what we continue to hear from the people on the installation is, "Oh, I did not know that this existed." Not only do we have a plethora of programs, we are not necessarily sure which are effective and which are not effective. We have many people who are not even aware of the resources they have. That three-prong approach is what I, as an operator, see coming from what I have learned from you as theorists and epidemiologists.

MS. MCCLELLAND: At the CFPB, we think we are very thoughtful about evaluation when we try to do new things. But the Paperwork Reduction Act (PRA) is another very challenging thing for us to be able to evaluate. It limits whom I can ask and how many questions I can ask of them, and I have to go through the OMB to get approval, which is a very, very long process. If I attend to the rules of the PRA, not only do I never get to the intervention, but it takes me forever to even get approval. That is something that has really been challenging for us at the CFPB.

DR. KESSLER: Two challenges that were just mentioned. One problem with evaluations is that people who want to evaluate things usually invent their own dependent variables. They have shown that their program works according to what they measure, but we cannot figure out whether it works better than something else. One way of dealing with your problem is centralization of the outcome. In other words, if there is a core that says we are monitoring everybody all the time on the same things and this is what we are interested in, you go to one place and you try something and you get evaluated on the basis of that agreed-upon standard so that you do not have to worry about all that with your particular study.

Kimberly, you talked about three challenges, but the third one – that there are all these things that exist that people do not know about – that is an opportunity, too, because you can do experiments with things that exist and because you can randomly assign increased awareness. That is really the opportunity with the crazy patchwork quilt system.

LTC MCGURK: I want to add a fourth item. You will be shocked to hear this from a research guy. There needs to be continual research and development of new interventions. Even the best intervention loses its value when implemented over and over, like the annual prevention training we require of our servicemembers. By the third and fourth time even I do not listen anymore.

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CLOSING DISCUSSION: HOW CAN SCIENCE AND NEW DATA MOVE US FORWARD

DR. URSANO: We have about ten more minutes of open discussion so everybody can make a comment. We will conclude with our panelists making the final comments.

DR. HOBFOLL: I am an advocate of merging good science with good theory. There is a cost to not doing that. The pure epidemiological approach to research is much more expensive because it requires much larger sample sizes because of the number of variables that you have to put into your power analysis. You better be sure it is better because it is much more costly. Ron Kessler might argue that the theory approach is wrong so that would be a bad cost investment, but there is a huge cost in these differences of decisions.

LTC MCGURK: We have a great deal of training that is targeted and stovepiped. We have suicide prevention training, sexual harassment and sexual assault response, and prevention training. In the Army, it would take about 380 days to complete your training in the time it is supposed to take. At the Medical Research and Materiel Command (MRMC) we put out a universal intervention program announcement to find programs. The National Institute on Drug Abuse (NIDA) brought to our attention work on early interventions for children that were targeted for multiple negative outcomes.

Epidemiological work has shown that there are many similar characteristics among people who attempt suicide, commit suicide, have accidental death, and other negative behaviors. If we are able to create projects that involve one single training that will have results on multiple outcomes, it will save money and time. As a medical guy I always hear, "Yes, thank you for that, but how does that fit in operationally?" If it does not, then, "Thank you very much, Doc, go somewhere else." Measuring outcomes across multiple domains, especially with low base rate behaviors like suicide, is a great approach, especially if the intervention is targeting other behaviors. We want to make sure that we are measuring outcomes across both the programs and the research.

DR. COX: The Army has taken some steps in that direction. Note the use of the term, "targeted training." In public health terminology, universal, targeted, and indicated interventions are different concepts. If you are talking about universal training,

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every soldier is supposed to have this training, such as suicide prevention. Universal training takes a great deal of time. Because of the similarity of risk factors and some other more logistically-oriented issues, the Army is creating a combined universal training course for suicide prevention, alcohol and substance abuse awareness and prevention training, and sexual assault and harassment prevention training. They are being combined into a single training course. Instead of taking three days or 24 hours it would be one. Then you have to measure outcomes. The Army is planning to measure what happens. Although you may think of each as having different kinds of outcomes, at least there is interest and I hope we will learn something.

DR. NASH: Listening to the conversation, I kept thinking about the work that I have tried to do over the last ten years, helping to build bridges across cultures. This is the challenge for implementing anything that is going to be useful in military. It is the elephant in the room that is not often talked about — the differences in world views in basic assumptions and cultures. To the extent that each service has its own culture, within each service there are sub-components with their own culture — DOD, academia. The extent to which we ignore that is one reason why things get warped or get stuck. Inertia hampers agility and blocks innovation. We become entrenched in our cultures and we defend them when they are under attack. We have to figure out a way to put these things on the table, to negotiate them, to understand each other, and to build bridges, otherwise we are just going to keep butting heads.

DR. NASSAUER: Speaking of stovepipes and building bridges, and culture and the importance of context, it is critical to take a systems approach as well. Not only do we have differences between services and differences within the services, we stovepipe into medical and nonmedical. All of these family and financial and stress issues are being artificially cleaved off from many of the behavioral health issues we are talking about. If there is some way that we can develop common outcome measures that bridge both communities and help the two communities to talk, we will be better off.

DR. URSANO: That is an excellent comment that many of the civilians may not appreciate. This is an important distinction.

LTC MCGURK: Some of this is messaging. All these different communities want to do the right thing and they think of these programs as their babies. When you tell them that their baby is ugly, immediately, they become defensive. We need to message that, this is not your baby, it is your tool. Your hammer works when you have a nail, but we are going to give you a screwdriver and we are going to give you a pair of pliers for other times when these tools are more appropriate. Maybe we will tell you that there are no nails, so you do not need your hammer, but that does not mean you lose your job.

CAPT ELENBERG: You are 100% right. Presenters yesterday suggested that we already collect a great deal of data, and they are right. We need an information ecosystem that pulls the disparate data from the line side and the health side together so that we can get to some causal analysis, regression analysis, and other analyses. We have it and we can do it. It is a matter of mindset and identifying a need.

CAPT MEYER: The comment about culture is critical. You brought up the example of assessing educational efforts. Are we teaching towards the test? If we are not framing this in the context that the military wants to hear, which is readiness, then we are introducing a source of stigma. I am going here so that I have no financial stress. Is that really a goal that we want? Do we really want to eliminate any mental health stress or is that compromising the mission of readiness? We have

talked about the problem of moving people all the time, but in the military, if you are always switching jobs and you are ready to deploy, that enhances readiness. I was thinking about the culture of the military and how they do these things. Evaluating whatever assessments we design, especially if we use a global assessment, is important. Imagine you are a Wing Commander and your base is stressed out. How are you going to reduce the stress and does it come at the expense of the mission? If so, that could be a bad thing.

DR. NASH: I was a residency training director for two psychiatry residencies in the Navy and I taught psychotherapy. I was always struck by the difference between supportive psychotherapy and other kinds of psychotherapy that are really geared toward change. There is a big difference. In supportive psychotherapy, you support the existing structure and belief systems and defense mechanisms, and that is one of the things that occurs organizationally in the military.

As organizational mental health professionals, we are therapists for the organization. If we want to support existing beliefs and attitudes and say, “Yes, you are right, only the weak get these problems, and the best thing to do is to discharge them all,” that will be perhaps better received than something that is more confrontative. To be able to change, to initiate insight in an organization, you have to do it in the same way a therapist does with any individual or system. You have to do it in a way that they can tolerate, that they can understand, that makes sense from their point of view, where they can have an “Aha” moment. Commanders have to walk a line between giving servicemembers what they want, what they expect versus giving them what they did not know they needed.

DR. KESSLER: I agree. I also think that when we start talking about rationalizing systems in this way we have to realize there is a deeper issue. One of them is that we are in charge of figuring out the best answers to questions, but what we want to maximize is, in some ways, somebody else’s decision. It gets trickier when you have multiple outcomes, as this organization does. Stevan was saying not every commercial organization wants to only make as much money as possible. And Mercedes-Benz, for example, does not want to make the maximum profit. They want to make the best car and they want to make it at a lower profit margin than other people. But the ideas of success are complicated, even in the money field. You do not want to make the most money this year because then you will lose customer loyalty. You are thinking in the long term. But there is some notion of success and it is tricky to figure out what the notion of success is. You do not want every dealer to make the most money. You want to lose some money, in some cases, because you have a reputation to maintain. There are several things and that is just in the money domain. In an organization like this, what is success? It is a very complicated thing.

The other piece is this. Even when we have something narrow and we know what success is and we have perfect knowledge, we get to the value impasse. Ultimately, you bump into this thing and say, “I do not really know what to do because I have not confronted that yet.” As you gain more and more knowledge, you find yourself moving more and more toward that.

I will give an example. Many years ago, the very first big thing I was involved in was a project about decision making in New York — where do you build the next fire department. We had a map of the five boroughs and we knew what the housing structure was, what the probability of a fire was, and if the fire happens, how much money was going to be lost, and how many lives would be lost. We knew what the traffic patterns were, so we knew how long it took to get from here to there because

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of one-way streets and crowds. If it happens at this time of day, that street will be really crowded. I could tell you exactly where to build the next firehouse, except there was a problem. I would build the firehouse in a different place if I wanted to minimize loss of life versus minimize loss of property. So where do you want the firehouse built? I cannot tell you the answer to that, but it was easy because the City of New York said the goal was to minimize the loss of life. But then we get to the really tricky question. Do you want to minimize loss of life or equalize risk of death? If you want to minimize loss of life, never build a fire department in Staten Island, because there are not enough people there. You build every firehouse right in the middle of Manhattan, midtown Manhattan, but then you create great inequality of risk of death. If you ever build a firehouse in Staten Island, however, you are sentencing five people to die the next year in Manhattan because that is how many more deaths there will be. So what do you want to do?

Typically, we do not have to confront those questions because we do not have enough knowledge to make those decisions. In the medical world, going back to the case of Karen Quinlan, all of sudden you say, "Hey, wait a minute. What does life mean?" We are going to confront more of these questions in the future. It is a deep issue. It is an issue that you really want to have though, because you want to be able to have enough control to manage it. This is not a comforting thought, but that is where we are.

DR. URSANO: I would like to bring this back to a military focus. One can use exactly that model for what comprises readiness. If you were to ask what comprises readiness between the Air Force, the Army, the Navy, and the Marine Corps, we already know that there are different balances. If one asks what comprises readiness within the Army there will be debate over resources versus people. Even within the mental health field there would be a debate as to which elements to measure. What we are talking about is the question of what will be measured as the outcome of success. When one begins to ask that question it raises a whole series of other questions.

DR. HOBFOLL: There is a great deal of important discussion here. One can come up with core elements of readiness because our variables are general. There are some basic things that all have to do with readiness. Those are the ones you want to target. That relates to the stovepipe idea. You want to hit on those. Some variables are probably related to a particular readiness and they will cost more. The job here is to find those elements that are more generalizable across different missions. We are not talking about targeted single programming, which is another kind of research and question.

DR. KESSLER: It is also important to realize that when you have a system where there are many outcomes that are desirable and you want individuals to thrive, and you want the system to work, there are many interventions that are not globally optimal. If you can find something that does all the twenty things you want to have happen, "Hooray, do it!" But there are often things you are going to have happen that are going to make people more autonomous and they are going to say, "Gee, I think the Army stinks. I want to get out of here." Is that a good thing or is that a bad thing? And so the best way to go is to have a clear sense of the range of outcomes, the relative importance, and to have an explicit kind of decision rule so you can try to maximize it in a global way. And this is getting back to the stovepipe issue. When you just look at something as your outcome, very often things just are not cost effective.

Bob mentioned some findings in Army STARRS. We found that 4% of people

are at high risk of suicide after leaving the hospital. Can you afford to develop an intervention for one hundred people to save four suicides? That is 5% of all hospitalized patients. They account for 50% of all suicides after leaving the hospital, but only four of them are going to die. Can you afford to do that? It turns out that when you look at other outcomes, we find that another four of them die in a car accident. Maybe that accident was not so accidental because that represents 25% of all car accidents. It turns out that when you look at broader outcomes, 35% of them have some very bad outcomes. Now, all of a sudden, since your interventions are not all that specific, what you are doing is hitting all those things at once. You have got something that, at least in this domain, is a global optimum and you can now say it is cost effective because it is doing all that stuff. Now it might be that there was some bad stuff also, but I think you have a start. When you have a multifaceted system like this, you have to think very broadly and never look at only one outcome because the world is too complicated.

DR. BLIESE: Again, collectively as a field, we have to think about outcomes that are cumulative. When we design a study we have a relatively short-term duration where we try to evaluate its effectiveness. We have to start there. Take financial training as an example. Just to make it very simple, people come to basic training and one group gets some systematic financial training, the other group does not. You can define the outcome as wealth generated over a given number of years. Your hypothesis would be that training would lead to greater wealth in one group than in the other. That makes the whole thing pretty simple. But, it is cumulative. If you changed the knowledge, you probably would not see much difference in the first one, two, three years because they are going to do the same things that every junior enlisted soldier does during that period of time, but there might be a slight difference. If you looked at three years, you might conclude that the effect size was so small as to make it absolutely worthless so why would you do it. However, at the end of the person's career there could be a huge wealth difference between the two groups. We have a number of these types of outcomes that turn out to be cumulative. Health resilience, however it is defined, is probably a cumulative process. You learn certain skills that you build upon that make you better able to adapt. You may not detect differences in the short term, but you do in the long term. Coming back to this collective idea — if we could define certain constructs that are routinely collected like the periodic health assessment, what a great tool we would have. We could collect data on an annual basis that measures depression and other core elements that could be modeled for every person over time. If we are creative, we could go back and say things like, “When did the Army stop the policy or implement a policy of mandatory financial training?” Then we could look back and try to disentangle these cumulative processes.

DR. BOSSARTE: These excellent comments are something that we struggle with in our suicide prevention program at the VA. We tried to figure out exactly who was at the greatest risk for suicide. We spent about two years before we got smart and learned from the Army STARRS program to think about suicide in a risk concentration paradigm, trying to find our groups at greatest risk. We found about twelve groups. We realized that if we were 100% effective at stopping every suicide in every one of the groups we would save about fifty-six lives a year. While fifty-six lives is admirable, it would have absolutely zero impact on our overall suicide rate. The reality of much of the work of the people in this room, myself included, is that it is evaluated by people who are looking for a hard change in an outcome of

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interest. The fact that you have saved fifty-six lives, but you have not decreased the suicide rate is not an acceptable answer. Part of what we have tried to do is use the approaches that Ron has suggested. Do the math and figure out who can we target so we can begin to bend that curve and affect change, to determine the effect size we can estimate. We are taking a risk concentration approach now. About 25% of our suicides are in the top 5% of people with the greatest predicted risk. If we can realize that 25% of effect size that has been estimated for psychosocial interventions, we will realize a 10% change in the suicide rate. That gives us information we can measure to evaluate the success of the programs without implementing a new program. That also gives us an opportunity to look back at the programs we have to understand what is working and what is not working. When do we de-implement a project based on the existing evaluation, and how can we set a target and a threshold that will be able to demonstrate change once it is all done?

DR. URSANO: The comments from Rob, Paul and Dennis, all fit under a term we have not used yet, precision medicine. Precision medicine is probabilistic medicine. It is an important aspect of our thinking forward in terms of where does big data and large programs fit into altering health. Whether one is using a medical or an EAP (Employee Assistance Program) model that is more comprehensive in both settings. Much of what we are talking about is dependent on the resource of big data and how it is put together, how it is constructed, and how we identify the outcome. We would be able to track, while we decide, which ones those will be. There is quite a story contained in everything that is being discussed. I want to be sure we embed it in that perspective as well because that is an ongoing initiative in many areas. It clearly can be informed by this discussion.

Now we will hear final comments from everyone.

MS. THOMPSON: I am very grateful that you included family support in the prevention programs and in this discussion. Many times it is overlooked. As a person who delivers programs, we need to do something after this conference. You are going to write a report, which is wonderful. The one you did on Military Families in Transition is excellent and I use it all the time. There is a next step. How do we inform the people who are providing the programs? How do we do something with this information that will have an impact? We cannot just think about it. We have to have a plan for implementation that needs to be systematic. My last comment is, do not leave out our children. That is where we begin. We need to begin our interventions and our prevention programs with children because they are the future of the force. If we do not think about children we lose track. We are always behind the power curve.

CAPT ELENBERG: Personnel and readiness is honored to be here and to be a part of the Forum. There are many great takeaways. Barbara, as you were saying, things like the periodic health assessment are great tools. They already exist and we can leverage them. We have to remember that we need to understand the families as well. Looking for opportunities to capture metrics on families will be very important. Families have a quantifiable impact and influence on the active servicemembers that is significant. For that whole picture, we will have to look for those additional opportunities as well.

DR. HOBFOLL: Just a note about the ecology of change. The military has had multiple deployments to a war zone for the last ten years. That has changed now. That does not mean that the suicide rate will go down. It does mean that the ecology of what is stressful and what is demanding in military service has radically changed.

That makes the models that have been developed over the last ten years questionable. That is one of the key variables that has affected the outcomes.

DR. BARRETT: I want to say a few things about culture context and systems. Some of it may run a bit counter to what has been discussed, but I have some concerns about generalization from big data. In the end we are trying to deal with individuals rather than groups of individuals. I understand that there are tremendous differences among the different branches of the military. There are also tremendous differences in the way individuals respond to stress. A closer study of individuals, when they are delicate and at their greatest vulnerability, particularly in transition states where transitions are unstable, can benefit from attempts to intervene and provide a more rational and systematic approach to some of the conditions. We need to understand the sources of variability, vulnerability, and resilience at the individual level. The context in which those become important would likely shed considerable light on programs and opportunities. I would take the opposite question of whether or not the more extensive study of the individual can possibly provide the basis for greater generality. That might otherwise be the case and provide the basis for developing global biomarkers, not just necessarily biological biomarkers, but biopsychosocial biomarkers as well.

The scope as well as the depth and breadth of financial and other support services available to members of the military is truly impressive, as is the evident compassion of the individuals and organizations committed to providing those services. The commitment to long-term longitudinal studies providing epidemiological and analytical methodology to collect essential information, to assess value, evaluate need and assess outcomes are also important to ensure effectiveness and to implement change when needed. Although a necessary component of this approach is the collection and analysis of 'big data' it is of vital importance to not lose sight of the individual. One needs to keep in mind that efforts to address suicidality, financial and personal loss, and other aspects that are collectively considered stress-related conditions ultimately do not reduce to treating an "average" or prototypical individual but need to focus on THE Individual. There are unquestionable differences in an individual's response to these stressors and there are potential dangers in overgeneralization that ignores heterogeneity. Individuals bring their idiosyncratic past history into a context that differs significantly in many dimensions and is also different in the different branches of the military. Hence, both the analysis and proposed interventions need to address these issues. It is likely that the level of analysis and focus on the individual may be more costly but it is quite likely that a more extensive study of the individual could produce much more applicable data with more widespread generality. This would offset the cost and provide more effective and long-lasting interventions permitting the identification of a set of 'global biomarkers' that encompass not only biological analyses but a truly systems approach that would also include behavioral and bio-social aspects that would help to stratify individuals and interventional approaches.

A second point to consider and emphasize is the data presented at this meeting had its origin in preclinical or animal behavior analyses. Those studies have demonstrated that reward loss induces stress-like behaviors that, in turn, generate other behaviors ranging from aggression, to drug use and a wide range of behaviors that are variable in their topography and highly dependent on the context in which that loss of reward has occurred. There are quite obvious translational parallels to humans where the environment has changed detrimentally and where many of these responses occur. Animal data has also emphasized the importance of analyzing

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The scope as well as the depth and breadth of financial and other support services available to members of the military is truly impressive, as is the evident compassion of the individuals and organizations committed to providing those services.

these ‘transitional states’ because these are delicate and unstable situations where individuals are quite vulnerable to their current environment. The identification and analyses of these transition states for members of the military, where changes are relatively frequent, somewhat unpredictable as well as not under their control would seem to be critical. Understanding those past and current variables that play a role in vulnerability or susceptibility to environmental contingencies, as well as those past and current features of the individual that imbue resilience would appear to be a matter of high priority.

Finally, and in response to the fact that many of these individuals undergoing significant stress are ‘messy’ by which it was meant that there were considerable ‘co-morbidities’ that existed. For example, there is often pain associated with PTSD, cognitive dysfunction associated with depression and hyperalgesia associated with depression to name a few. Again, this would appear to be another significant reason for focusing on individuals and segmenting those studies to examine novel interventions and approaches for those stratified along these lines.

MS. COLE: My concerns are a little more pragmatic with the move to the new blended retirement system. I am not sure how many of you are aware of this, but servicemembers will need to make decisions about investment in the thrift savings plan as part of their retirement. I am concerned about how we approach positive behavior, and, in general, positive financial decision-making in young servicemembers. This is a big change from doing your twenty years, getting your retirement, and not having to think about it. There will be added stress on the force as a result of that.

DR. URSANO: Potentially, this is an opportunity for a trial as to how we educate people.

MR. SCHNEEWEIS: I want to thank DOD for including organizations that are not part of DOD. We can all play a role. I appreciate the openness to ideas and input from our organizations with the best interest of service men and women at heart.

MS. EGENTOWICH: On behalf of all the Military Relief Societies that were invited, I appreciate the opportunity to present what we have and what we do to help servicemembers reduce financial stress, and stress in general. I look forward to hearing more from this Forum.

MS. McCLELLAND: On behalf of my boss, Mrs. Petraeus, I want to thank all of you for including the Consumer Financial Protection Bureau. During most of my working career, we did not believe that anybody outside of DOD would understand, or have knowledge, or could contribute to our issues. I now know that is not true. This Forum is the perfect example. When we share our joys and our successes and our failures, we all benefit. Today’s servicemember is tomorrow’s veteran. At the start of the Forum, Mr. Stamilio asked, “What has changed?” I want to make sure that the big thinkers in the room realize that access to credit is so much easier for today’s 19 year-old. I had to have three stripes to get a credit card. We all knew it was Sears. They were the first one to give credit to us and then we could get the rest. Today, if a young person thinks about going into the military, they can get three credit cards. We need to remember that it is easier to get in financial trouble early.

CDR SANTIAGO: Yesterday, Ron talked about the potential to, “ready-aim-shoot” when implementing programs and that we should start with the dependent variable and work our way backwards. That is one thing I would like to see happen. In this ongoing discussion about what is success, do we have the dependent variables right? If some day we actually do create a giant DOD data link, will we have the

right dependent variables there to not only show program efficacy, but also to support the theoretical underpinnings of those programs?

CDR MORGANSTEIN: I have been listening to all the anecdotes and the research and thinking back on my own clinical experiences. I wore an Air Force uniform for sixteen years prior to becoming a public health officer. I am reminded of the impact of adverse financial issues on servicemembers and also some of my own experiences. It is striking that there is such a lack of systematic education and training regarding financial management. It is a critical readiness issue that seems to have a profound impact on general well-being, relationship management, overall readiness, and even on extreme outcomes such as suicide. Building things, as Dr. Bliese alluded to, includes the idea of trials to figure out if we can systematically incorporate programs as early as basic training. It also addresses Dr. Meyer's comment about the importance of building anything into the culture of a system, knowing that culture, "eats strategy for breakfast." Anything we come up with that is outside of the military's culture is likely to fail. A way to incorporate that through mechanisms that are palatable, that address basic issues like readiness seems to be the most plausible in terms of long-term efficacy.

CAPT WEST: I was struck by the recurring theme that came up, in terms of my own thoughts, about suicide risk and the trifecta of relationship loss. Financial stress, in a young adult population, legal distress, but in an older population the decline in health and function. The way we have been talking today about one of the key elements of that trifecta has been very helpful.

CAPT MEYER: McDonald's sells apples in its Happy Meals. I assume they include apples because it sells more Happy Meals, not because it is healthy. I recently returned from Korea where we did our sexual assault prevention training on the flight line. There is a Chili's on the base in Korea. You might be gassed in an hour, but there is a Chili's with families and strollers. As we think about financial stress and where our service members are, the best place to buy a Ford F-150 is in front of the BX in Korea, because you do not pay taxes on it and it will be ready for you when you get back home. The context of where our service members are located is complicated, as has been said before.

LTC WYNN: Over the last two days, I have been pondering the discussion on the availability of resources that has come up a number of times. The fact is that we have not really split out the perception of availability of resources from the concept of availability of resources. Our servicemen and women live with the perception of resources, rather than the actual availability of resources. We have discussed that folks with a great deal of money may still commit suicide, and that there are very happy people with almost no resources. Two things come to mind. One, we know that when individuals have a variation in the severity of their depression or bipolar disorder, their perception of stigma and barriers to care similarly varies with their symptom severity. Does your perception of resources change with your mental health condition? As your PTSD gets worse, do you feel like you have fewer available resources? It is a complex interaction to consider, but it is not static. I can say that I just had a bad event, but it is a bad event whether I have significant depression or not. Then, there is the interplay of social media. Every Facebook friend I have evidently has the most amazing life ever, all the time. I cannot believe how great everyone's life is all the time. I wish I had that life. Compared to my Facebook friends, my life is not that great. That is not true of course, but that is the input we get consistently from media and from other information sources — that everyone

It is striking that there is such a lack of systematic education and training regarding financial management. It is a critical readiness issue.

I would like to emphasize the probable value of developing integrated programs, services, and training that addresses multiple outcomes like suicide, accidents, violence, criminal behavior, and other problems we have discussed.

else's life is fantastic. When you add in a bit of depression, a bit of stigma, barriers to care, and financial stress, how does that affect our servicemen and women?

DR. URSANO: It calls out for longitudinal study.

DR. COX: I am always looking for ways to do things that cover a broader ground with less material. We touched on this today. I would like to emphasize the probable value of developing integrated programs, services, and training that addresses multiple outcomes like suicide, accidents, violence, criminal behavior, and other problems we have discussed. In those programs, however, there is one area we did not touch upon, and that is, how do you teach an appropriate level of independence and self-reliance? This applies to behavioral health, to financial stress, and to relationship problems. We desire and recruit servicemembers who will be able to make independent decisions and make the best decisions possible under difficult conditions. We want them to be self-reliant. But, at the same time, how do we ever teach them when to seek help and when to recognize the appropriate thing to do? That is the key missing ingredient in many of these situations and scenarios that we have been discussing. They put it off. Whether it is because of stigma, family ethics, the culture they come from, or they think they are supposed to deal with it themselves. Not to do so is failure.

DR. URSANO: So embedded in there is how do we teach help seeking in a manner that matches those other values.

DR. WALSH: At the beginning of the seminar, you charged us with thinking. The Secretary of Defense is about ready to sign off on the Department of Defense Suicide Prevention Strategy. There are sixty-four objectives under thirteen goals. Many of those objectives have to do with the things that we are talking about like evaluation. We have to evaluate. At the Department of Defense, we have to evaluate all the suicide prevention programs. Are they effective? Then, are we using evidence-based practices throughout all of those programs? There are challenges that I have heard from all of the speakers. The different programs throughout the services are not using common data elements. We do not know what they are measuring and how systematically they are measuring it. That is one of our biggest challenges. One of the things we can learn is that the Military Suicide Research Consortium has a common data element tool, one that measures many different similar elements. That is something that we need to begin to develop or borrow from. The other thing I heard about was the risk of suicide after hospitalization. What about integrated training? I know that the Marine Corps has an integrated behavioral health training program that was rolled out about a year ago. Do they have the tools to evaluate it and to measure it systematically and then to disseminate their findings? They also have a program that targets people who have attempted suicide and have been hospitalized. Do they have the ability to evaluate it and to disseminate those findings?

DR. MOTTOLA: The diversity of roles and perspectives is fantastic and is to be commended. There is even the potential for room and opportunity to go further in terms of diversity of thought. There are many organizations wrestling with similar issues. I spent a great deal of time on financial education. The financial education community has been wrestling with the common measures issue for a couple years now. What makes a robust study, and what types of studies will be effective enough to change policies? I encourage the group to continue what you are doing and reach out to different groups that are struggling with similar issues.

DR. NASSAUER: This came about because of a very narrowly focused inquiry

regarding financial stress and suicide. I want to again, thank you and commend you for broadening the focus. All of the discussions have shown that this issue is extremely complex and involves a host of factors that play into stressors and strains and how people react to those stressors and strains. This will have a host of effects on how the family functions, how the servicemember functions, how ready they are to perform their job, and a number of behavioral health issues that can eventually lead to suicide if unaddressed and untreated. I appreciate the breadth of the discussion and bringing different communities to the table. Over the course of the day and a half, I have heard many parallels. Our research command struggles with making the same kinds of decisions that programs and industry struggle with. I look forward to working with other communities of interest and learning from the lessons they have gained over the years.

DR. URSANO: As a follow on, we intentionally provided everybody's email in the program and hope that it facilitates your networking with each other.

DR. BOOKWALTER: I want to echo the comments on the importance of common data elements. It is a question that I had coming into this meeting. In our study we like to measure financial stress but we do not want to start from square one. We like to learn from what others have learned and from what others have done. At the same time, I am new to research within DOD and I wonder about duplicating efforts. I am looking forward to learning what other groups do and learning how best to work together.

MS. NYLEN: The military aid societies are an unusual addition to the group. Thank you for the opportunity to allow us to be a resource for the servicemembers who need financial assistance. We welcome every opportunity to interact and be of service to the clients. Two things. Please remember that even though current operations are declining in Afghanistan and Iraq, servicemembers will always deploy. Also, financial education and all of the education that you are preparing, has to be delivered in a format that today's servicemember uses. That is not the same context that former educational tools were delivered. We must deliver tools in places where servicemembers reside. Today, that is an electronic format, or places that they live — which is online or in their handheld device.

DR. URSANO: Thank you, Cheri. And thanks to all of the military relief societies for coming. It was an outreach and a different experience for you to come, and it was of great value to have you participate. I have a particular tie to Army Emergency Relief since they so kindly named a scholarship after my father. I always feel closely tied to all of you.

MS. CONNOR: We use the phrase, "We want to be your first line of defense, not your last resort," when we are trying to get past some of the cultural difficulty to reach a servicemember who is reluctant to seek help. I have the great honor of working on a base that is jointly operated so we have all the services represented. We, as aid societies, cross over and help each other with all branches of servicemembers. I get to see them each week. Across all the services, we hear the same problem, "I do not want to ask for help, I am supposed to help you." If we can help break down that barrier, we will have made progress. This Forum was very eye-opening.

DR. WADSWORTH: I have three points. In relation to the trifecta that includes family issues and financial issues, which of course are very intertwined. I also want to point out that they are related to two things that we did not talk about at this meeting that I think are also embedded — gender and power dynamics in relationships. These two things, in turn, are tied to hostility and violence. We have not talked

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much about sexual assault and intimate partner violence here, but financial stressors, and power differentials in families are very implicated in those issues.

Second, I think it is very important for the report that comes out of this conference, to highlight the lack of randomization, experimentation, controlled conditions, and data collection efforts. More often, or I should say less often, because it is not that no one thought about it, it is not that no one tried to do it, it is not that no one knew what to collect, it is not that no one had a clever idea, it is that all those things died on the hill, on the way to implementation. That has been my experience in the last fifteen years. It is not that no one ever thought about it. People are not stupid. People read literature. People know what needs to be done. But the ability to get it done, in these systems, in these stove pipes, in these hierarchies, with these commanders, with these whatever, we die on those hills again and again and again and millions of taxpayers' dollars die with us. That is an important distinction to make in the report. I have seen so many reports where there is no quasi-experimentation, no comparison groups. I really hope that you will dig into that.

DR. URSANO: Shelley, just to capture it in a phrase, and I absolutely agree with you, barriers to implementation are also systematic in our system.

DR. WADSWORTH: Yes, the notion of continuous quality improvement is very important. Fidelity is an untapped frontier in many ways. There are many instances where programs are well designed, have good content, an appropriate strategy, but very little attention on the back-end to consistency of fidelity over time. That is where the rubber meets the road in terms of effectiveness.

DR. McCARROLL: We have talked a great deal about a systems approach, about big data, large scale problems, large-scale budgets, and questions about what works and what does not work. I want to build on Dr. Barrett's comment or at least to dovetail with it. Many programs tend to be universal as opposed to targeted. The question is, how do you get people's attention? How do you get into people's heads? Long ago, when I was in school, I heard a catchy set of phrases from a teacher and I wish I could attribute it to somebody since I cannot take credit for it. The question that we want to think about, to some extent, with regard to the individual, as Dr. Barrett pointed out, is how does that person see the world? Secondly, how does the world see them? Finally, how do they see themselves? If you can get anyone to answer any of those questions, you may have some sense of how to think about making programs available and appealing to people.

DR. URSANO: Nice. Another trifecta. Well said.

DR. NOCK: It is clear that this is a group of people with many different backgrounds that you have brought together, and I am grateful to be part of this. I am struck by the universal passion for a better understanding of these problems and for improving the lives of servicemembers and their families. We all have the same mission, which is nice to see, and it is great to have everyone together on the same page working on this. It is clear from the presentations and discussions that this is complicated, with many moving parts, and with complex interactions. Implicitly we, and others working on this, are a complex group with complex interactions and many moving parts. What we have to do is work together in a coordinated, theoretically-driven, but also data-driven way to improve understanding, prediction, and prevention. The trick is matching the complexity of the problem, and making the complexity in the group less of a barrier than it needs to be. I echo what others have said. I have learned a great deal over the past day and a half. I hope the dialogue and potential collaborations will continue.

DR. URSANO: Remember the words coordination and data-driven.

DR. NASH: I look forward to reading the report of the proceedings. I want to echo Barbara Thompson's first comment about, "what next?" We all brought flowers to the conference report graveyard. We know how many reports are buried there. This is a really important conversation. The voices taking part in it are very clear and profound. The leadership is in the best position to actually make something good from this discussion. So I am going to be watching you, Bob, learning from you to see what next steps you take in wanting to help as we go forward.

DR. URSANO: Part of my next step was to invite you and Barbara.

DR. NASH: The greatest obstacles to constructive improvement and processes, especially in military organizations, which are very tradition bound, are bureaucrats. I am a bureaucrat. I am a staff officer. We are easy to dislike, because we are the obstacles to change. I encourage all of us in the sense of us as cultural therapists, to empathize with the role we bureaucrats play. We are the bone and sinew of the organization. The more stress the organization is under, the more we have to resist change so that our traditions and cultures do not suffer and that the change is focused and leads to something good. We need to become partners in doing good things and not be opponents.

DR. BOSSARTE: I would like to react to the most recent comment first. As a fellow bureaucrat, the good news is there is a process for recognizing the disdain. It is just a form that has to be filled out in triplicate and it will be filed by somebody. Yes, regarding the consideration of how do we make our outcomes valuable to the people we are trying to reach, ultimately, we are trying to help people, but we often do that with our own lens and our own metric of what success is without considering the person in the healthcare system. I work for what we call the patient center care. They have a different impression of what is really important about their life such as gender-based violence to intimate partner violence and the continuum of violence across the outcomes. How do we get people to use the resources even when they know they are available? Our behavioral health autopsy program tells us that about 80% of our suicide decedents were aware of the crisis service resources. They chose not to use them. They knew about access and knew resources were there. The resources were available but they did not activate them. How do we change that? The last thing I would like to say is more of a philosophical comment, and I will speak as a suicide prevention researcher. There is a paradigm shift happening, at least within the Veterans Health Administration, about the way we approach risk. This is not in the clinical setting, but in a program setting. The traditional approach has been through the assessment of risk factors for the detection of risk. We approach each person, we assess their risk factors, and we use that to understand a person's risk. That assumes a certain monotonicity of risk. The idea is that there is a certain distributional model at play here. If we capture people at exactly the right point, we will guard the edge of the cliff. That model is carried forward to many social and behavioral outcomes. There is a different way of looking at this, though. That is through the detection of risk as a precursor to the assessment of risk factors, to understand where we need to look within each person. That is a different way of looking at things, but I think it beautifully brings together the power of epidemiology in clinical services and program implementation, evaluation, and de-implementation, by aligning all of those activities into a single cause.

LTC McGURK: Barbara really nailed it. The important question is, "What is next?" This meeting, in part, was done because Congress tasked DOD Health Affairs,

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The next steps are to use all the brainpower and the positioning of the folks in this room to bring others on board to discuss the plan that will go forward. The plan needs to be multi-pronged to select the ones that are the best.

in one year's time, to have a study that will figure out the relationship between financial strain and suicide. There is no one in this room who thinks that that is possible. We are not going to figure it out in one year. This Forum was a great first step. The Defense Suicide Prevention Office will be involved in the solution. There are many people who will be part of the solution. The next steps are to use all the brainpower and the positioning of the folks in this room to bring others on board to discuss the plan that will go forward. The plan needs to be multi-pronged to select the ones that are the best. It is not going to be with randomization. We will fund research that uses measurements and looks at the effect on important outcomes. We will need a common theme to brief our senior leaders, when we have the chance, to say, "You are getting the best we have now. This is what we recognize as the best. We have come to a consensus based on some agreed upon criteria. We are going to have better stuff and we are going to keep refreshing it for you so you do not have to go look somewhere else. We are going to get smart people to work on it." We will at least get some consensus to say, "Here is the way forward and we are giving you the best services we can possibly deliver."

DR. BLIESE: I have moved to academia and could be accused of being part of the ivory tower. We, in academia, have a responsibility not to make things too complex. For example, we say we are serious about tracking down financial implications and what the impact is for the soldier and the transition. One easy way would be to go to MyPay and ask servicemembers on a quarterly basis to report how much debt they have or to report their financial assets. Suppose we did this on a quarterly basis with one item and asked servicemembers, very simply, if they would report that. Because their information is important for policy, they would probably do it voluntarily. If we go back in and put into MyPay, eighty-seven plus items, because we, as academics want it, it would never get done. Yet with that one item, you could answer many of your questions because you would look at changes in policy and measure the impact. You would be able to see how somebody went from being in debt to being out of debt, whether they committed suicide, whether they left. All of these models could be built from a very simple construct. MyPay would also track the servicemember into retirement. The one thing that every service member will do when they go into the retirement phase is track MyPay. The easy coordination with the VA would help tracking, too. This is a very easy model to implement. It incorporates many of the things here. You could think, in that context, it is not always passive to fill out something about your financial health and that, in itself, could be randomized. The fact that you have to report on your financial status might be a small intervention. You could take half those people and ask them to report on their financial status. Perhaps you have 500,000 participants. The other half does something else with the theory about how that can play out. You would then answer both questions very simply. I throw this out as just an idea to make it practical to say, it is not all pie in the sky. This could be done with some political will.

DR. KESSLER: We have just heard an extraordinary number of ideas. I do not have any summaries. This was a very rich day and a half. I thank you very much, Bob. I look forward to the next steps.

DR. URSANO: Thank you all. You are the conference and it is because you are here that we have been able to think together. I liked Dennis' comment very much, as a summary, that perhaps if we do not have a common vision, we have a coordinated vision. All of you are the next steps. Our invitations to you were not just to think with us. You were chosen to be here because you have the ability, not only to think

with us, but to carry the ball forward. We have thought together. We have different pictures that are coordinated, if not common pictures of the elephant in front of us. We all have action arms. We will certainly work ours, as Bill has suggested, and we will keep you informed of those. If you have a great comment you want to share, send it in. We are together on this as the next step. Thank you all for coming. We look forward to seeing you at the next stop on our adventure.

...perhaps if we do not have a common vision, we have a coordinated vision.

READINGS

GENERAL READINGS

Financial Stress and Health

Social structure, stress, and mental health: Competing conceptual and analytic models

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Financial Stress and Suicide

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Angus J. Duff, Chris C.A. Chan
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Ann Marsh

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Testimony of Hollister K Petraeus before the Senate Committee on Banking, Housing and Urban Affairs

Hollister K. Petraeus

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Hollister K Petraeus before the US Senate Committee on Commerce, Science & Transportation

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A balance sheet perspective on financial stress: Why starting early matters

Ray Boshara, William R. Emmons

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Revaluing the role of parents as financial socialization agents in youth financial literacy programs

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Mental Health / Behavioral Health / Suicide

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The interpersonal theory of suicide

Kimberly A. Van Orden, Kelly C. Cukrowicz, Tracy K. Witte, Scott R. Braithwaite, Edward A. Selby, Thomas E. Joiner, Jr.

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Social Determinants and Mental Health

Position paper on economic arguments for intersectoral interventions that improve the social determinants of health: Mexico

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Alejandro Figueroa-Lara

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Public health agencies and cash transfer programmes: making the case for greater involvement

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Social Determinants of Health Discussion Paper 5: Policy & Practice

Rene Loewenson

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Addressing social determinants of health through intersectoral work: Five public policy cases from Mexico

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http://cstsforum.org/assets/media/documents/AddressingSocialDeterminantsHealthIntersectoralActions_WHO_2010.pdf

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World Health Organization

http://cstsforum.org/assets/media/documents/EconomicsSocialDeterminantsHealth_WHO_2013.pdf**Communicating the economics of social determinants of health and health inequalities**

World Health Organization

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In the Press**Military slightly better with money management**

Wyoming Tribune Eagle

http://www.wyomingnews.com/news/article_0ea95a9d-272c-5595-8de0-60a138aeae69.html**WHO Social Determinants Studies****Position paper on economic arguments for intersectoral interventions that improve the social determinants of health: Mexico**

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PRESENTERS' RECOMMENDED READINGS

James E. Barrett, PhD

Finding translation in stress research

Ahmad R Hariri, Andrew Holmes

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Operant Extinction: Elimination and Generation of Behavior

Kennon A. Lattal, Claire St. Peter, Rogelio Escobar

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Paul D. Bliese, PhD

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Poor subjective sleep quality as a risk factor for death by suicide over a 10-year period

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C. Eldon Mullis, Army Emergency Relief

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Barbara A. Thompson

A balance sheet perspective on financial stress: Why starting early matters

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