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PRINCIPAL INVESTIGATOR: Ronald Chen

CONTRACTING ORGANIZATION: University of Kansas Medical Center

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14. ABSTRACT

Background: Patients with localized prostate cancer face a confusing decision among many options. The standard options in current guidelines range from active surveillance, surgery, and radiation therapy (RT, various forms). Surgery and RT have evolved/improved significantly. Patients need long-term outcomes (quality of life, cancer control/recurrence, and survival) of modern treatments in order to help them make a treatment decision; however, these data do not exist. The current literature includes outcomes of older surgery and RT modalities no longer commonly used today, or short-term outcomes of modern treatments. This means that patients today do not have the information they need to make an informed decision, and must use outdated data of older prostate cancer treatments. In 2010, the study team worked with a national group of stakeholders including patients to design this study to provide data that are directly relevant to patients and stakeholders. With funding from AHRQ, PCORI and NCI, we enrolled a population-based cohort of newly-diagnosed patients, and have followed them prospectively/annually. Here, we propose to study 8-10 year outcomes.

Hypothesis/Objective: The overall objective of this study is to continue studying an established population-based cohort of localized prostate cancer patients to yield up to 10 years of long-term outcomes among different modern treatment options. The central hypothesis is that long-term quality of life (QOL), treatment-related morbidity, cancer control and survival outcomes differ among the treatment options. Because short-term outcomes are not sufficient in prostate cancer, this proposed study represents significant "value added" to the prior funding which built this cohort, and will provide meaningful results that directly address important current knowledge gaps.

Specific Aims: 1) Directly compare patient-reported outcomes within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and radiation therapy; this will include bowel, urinary and sexual QOL; prostate cancer anxiety; and treatment regret. 2) Directly compare sexual, urinary and bowel morbidity requiring medical intervention and hospitalizations within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and RT. 3) Directly compare cancer recurrence and survival within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and RT.

Study Design: The North Carolina Prostate cancer Comparative Effectiveness & Survivorship Study (NC ProCESS) enrolled a unique, population-based cohort of 1,519 newly diagnosed localized prostate cancer patients across all 100 counties of North Carolina from 2011-2013. Patients have been prospectively followed since enrollment with QOL surveys and abstraction of medical records. The current study proposes to collect data at 8-10 years of follow-up, and create a comprehensive data set that includes these data linked with cancer registry data and insurance claims from Medicare, Medicaid and private insurers to examine the Aims. We are not aware of the existence of another fully prospective, population-based prostate cancer cohort; or another data set that includes these comprehensive, detailed, linked data elements to allow examination of these outcomes.

Impact: This study directly addresses a highest priority research topic identified by the National Academy of Medicine, and studies outcomes most important for patients and other stakeholders. Thus, this study is expected to produce results that are clinically relevant and immediately usable by patients and clinicians to inform treatment decision-making. NC ProCESS is recognized as a well-conducted and high impact study. Our short-term (2-year) published results were made into decision aids for patients and physicians, incorporated into the most recent/2018 ASCO prostate cancer guidelines, and cited in ASCO's Annual Progress Report Against Cancer as one of the highest impact studies in 2017. We expect the long-term outcomes resulting from this proposed study will make a similarly major (and possibly greater) impact. Results from this study will immediately help advance prostate cancer patient care by impacting treatment decisions. The long-term impact from helping patients make informed decisions is improved quality of life (from reducing overtreatment and post-treatment regret), thus enhancing the well-being of all patients, and reducing the mortality from this disease. We will work with national prostate cancer organizations to directly disseminate study findings to patients and their families. This study directly addresses the PCRP Overarching Challenges, "Improve the quality of life for survivors of prostate cancer" and "Reduce lethal prostate cancer in African American, Veterans, and other high-risk populations".

15. SUBJECT TERMS

NONE LISTED

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
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INTRODUCTION

Patients with localized prostate cancer face a confusing decision among many options. The standard options in current guidelines range from active surveillance, surgery, and radiation therapy (RT, various forms). Surgery and RT have evolved/improved significantly. Patients need long-term outcomes (quality of life, cancer control/recurrence, and survival) of modern treatments in order to help them make a treatment decision; however, these data do not exist. The current literature includes outcomes of older surgery and RT modalities no longer commonly used today, or short-term outcomes of modern treatments. This means that patients today do not have the information they need to make an informed decision, and must use outdated data of older prostate cancer treatments. In 2010, the study team worked with a national group of stakeholders including patients to design this study to provide data that are directly relevant to patients and stakeholders. With funding from AHRQ, PCORI and NCI, we enrolled a population-based cohort of newly-diagnosed patients, and have followed them prospectively/annually. Here, we propose to study 8-10 year outcomes.

KEYWORDS

Prostate Cancer
Cancer Registry
Active Surveillance
Quality of Life

ACCOMPLISHMENTS

The PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction.

- **What were the major goals of the project?**
    - *List the major goals of the project as stated in the approved SOW. If the application listed milestones/target dates for important activities or phases of the project identify these dates and show actual completion dates or the percentage of completion.*

Investigators and staff are at the University of Kansas Medical Center and University of North Carolina at Chapel Hill. The major goals of the project, as outlined in the approved SOW, are as follows:

Specific Aim 1: Directly compare QOL and decisional regret within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and radiation therapy (RT).	**Month**	**Personnel**	**Site (KUMC/UNC)**	**Percent Complete**
Major Task 1: Complete patient surveys				
Subtask 1: IRB modification to allow extended follow-up of NC ProCESS cohort (University of North Carolina IRB). (Month 1)	1	Dr. Chen	KUMC & UNC	100%
Subtask 2: Modify study databases, including patient tracking database to include new data elements for this proposed study. Obtain USAMRDC ORP HRPO regulatory approval.	1-3	Dr. Chen	UNC	100%
Subtask 3: First round of annual survey	3-14	Dr. Chen	UNC	100%
Subtask 4: Second round of annual survey	15-26	Dr. Chen	UNC	10%
Subtask 5: Data analysis	7-30		KUMC	0%
Milestone(s) Achieved: By the end of month 26, all patients will have patient-reported outcomes data collected at 8-10 years of total follow-up to provide long-term results. By the end of month 30, data analysis will be completed for Specific Aim 1.				In progress
Specific Aim 2: Directly compare sexual, urinary and bowel morbidity requiring medical intervention within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and RT.				
Major Task 2: Linkage of NC ProCESS patient cohort data with data from the NC Central Cancer Registry and insurance claims				
Subtask 1: Data linkage by UNC CIPHR core facility staff	25-30	Dr. Kuo	UNC	0%
Subtask 2: Creation of analytic data set from linked data	31	Dr. Katz	KUMC	0%

Subtask 3: Data analysis	31-36	Dr. Katz	KUMC	0%
Milestone(s) Achieved: Completion of Aim 2 will provide data on long-term treatment-related morbidity that require medical intervention.				Not yet started
Specific Aim 3: Directly compare cancer recurrence and survival within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and RT.				
Major Task 3: Assess prostate cancer recurrence				
Subtask 1: Collect patient medical records	16-27	Dr. Chen	UNC	10%
Subtask 2: Abstract medical records to assess prostate cancer recurrence	16-30	Dr. Chen	UNC	0%
Subtask 3: Data analysis	31-36	Dr. Katz	KUMC	0%
Milestone(s) Achieved: Completion of Major Task 3 will provide data on long-term cancer control and recurrence rates for patients in different initial management groups				Not yet started
Major Task 4: Assess survival and mortality				
Note, this is accomplished by the data linkage step described above (Major Task 2, Subtask 1). Survival/mortality information is contained in the NC Central Cancer Registry data	21-24	Dr. Kuo	UNC	0%
Subtask 4: Data analysis	25-30	Dr. Katz	KUMC	0%
Milestone(s) Achieved: Completion of Major Task 4 will provide data on overall survival/mortality for patients in different initial management groups				Not yet started

- **What was accomplished under these goals?**
    - *For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. Description shall include pertinent data and graphs in sufficient detail to explain any significant results achieved. A succinct description of the methodology used shall be provided. As the project progresses to completion, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.*

1) Major Activities:

In year 1 of the award period, PI Dr. Ronald Chen transitioned from the University of North Carolina at Chapel Hill (UNC) to the University of Kansas Medical Center having accepted a position as chair of the Department of Radiation Oncology. As a result, a fair amount of time was spent transitioning this award to KUMC and establishing a subcontract with UNC to continue study activities. However, phone surveys with participants continued with little disruption and we were able to complete 95% of year 1 follow-up surveys. Regulatory activities included obtaining IRB approval to continue up to 10 years of follow-up (surveying and medical records collection) with the NC ProCESS cohort; establishing an IRB Reliance Agreement with

KUMC for study team members located at KUMC; and obtaining USAMRDC ORP HRPO regulatory approval.

We conducted annual telephone surveys with NC ProCESS participants, and we continue to collect prostate-specific quality of life, anxiety and decisional regret assessments. Further, we are collecting participants' medical records from healthcare providers and will begin abstracting clinical variables (e.g., documented prostate cancer recurrence and associated treatment). To accomplish each of these major activities, programming updates were made to the Computer-Assisted Telephone Interview (CATI) software (for software-guided telephone interviews) and the web-based tracking system.

Finally, to reduce attrition of participants enrolled in our study, incentives were provided to enrolled participants for completing annual follow-up telephone surveys and signing and returning medical record release forms and HIPAA authorizations.

2) Specific Objectives:

Specific objectives of the research study are to directly compare patient-reported quality of life outcomes and decisional regret; sexual, urinary and bowel morbidity requiring medical intervention and hospitalizations; and cancer recurrence and survival within 10 years of follow-up in men managed by initial active surveillance, radical prostatectomy and radiation therapy (RT).

The Major Tasks in Year 1 (see table above) outline necessary processes for completing these objectives.

3) Significant Results/Key Outcomes (*including major findings, developments, or conclusions (both positive and negative)*:

During Year 1 of the award period, study staff attempted 1164 follow-up phone surveys with a completion rate of 59% (681). There are no major findings to report at this time.

- **What opportunities for training and professional development has the project provided?**
    - *If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.*

Nothing to Report

- **How were the results disseminated to communities of interest?**
    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe how the results were disseminated to communities of interest. Include any outreach activities that were undertaken to reach members of communities who are not usually aware of these project activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.*

Nothing to Report

- **What do you plan to do during the next reporting period to accomplish the goals?**

  If this is the final report, state "Nothing to Report."

  - *Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.*

In the upcoming year, we will continue follow-up phone surveys. We will also collect and abstract medical records. We will prepare an analytic data set to assess the stated objectives of the project. We will link the NC ProCESS patient cohort data with data from the NC Central Cancer Registry and insurance claims data.

We will continue efforts to reduce attrition and keep participants engaged by providing gift cards to participants who complete surveys and return medical records release forms. We will create and mail a newsletter with project updates to enrolled participants; and trace participants who may be lost to follow-up.

IMPACT

Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to:

- **What was the impact on the development of the principal discipline(s) of the project?**
    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe how findings, results, techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research in the principal disciplinary field(s) of the project. Summarize using language that an intelligent lay audience can understand (Scientific American style).*

Nothing to Report

- **What was the impact on other disciplines?**
    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.*

Nothing to Report

- **What was the impact on technology transfer?**
    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including:*
        - *transfer of results to entities in government or industry;*
        - *instances where the research has led to the initiation of a start-up company; or*
        - *adoption of new practices.*

Nothing to Report

- **What was the impact on society beyond science and technology?**
    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*
    - *Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as:*
        - *improving public knowledge, attitudes, skills, and abilities;*
        - *changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or*
        - *improving social, economic, civic, or environmental conditions.*

Nothing to Report

CHANGES/PROBLEMS

The Project Director/Principal Investigator (PD/PI) is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, "Nothing to Report," if applicable:

- **Changes in approach and reasons for change**
    - *Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the agency.*

Nothing to Report

- **Actual or anticipated problems or delays and actions or plans to resolve them**
    - *Describe problems or delays encountered during the reporting period and actions or plans to resolve them.*

Nothing to Report

- **Changes that had a significant impact on expenditures**
    - *Describe changes during the reporting period that may have had a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.*
- **Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents**
    - *Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards, and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee (or equivalent) and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.*

Nothing to Report

- **Significant changes in use or care of human subjects**

Nothing to Report

- **Significant changes in use or care of vertebrate animals.**

Nothing to Report

- **Significant changes in use of biohazards and/or select agents**

Nothing to Report

PRODUCTS

List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state "Nothing to Report."

- **Publications, conference papers, and presentations**
  Report only the major publication(s) resulting from the work under this award.

    - **Journal publications.** *List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

    - **Books or other non-periodical, one-time publications.** *Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: Author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (e.g., book, thesis or dissertation); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

Nothing to Report

    - **Other publications, conference papers, and presentations.** *Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above. List presentations made during the last year (international, national, local societies, military meetings, etc.). Use an asterisk (*) if presentation produced a manuscript.*

Nothing to Report

- **Website(s) or other Internet site(s)**
  List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

Nothing to Report

- **Technologies or techniques**
  Identify technologies or techniques that resulted from the research activities. In addition to a description of the technologies or techniques, describe how they will be shared.

Nothing to Report

- **Inventions, patent applications, and/or licenses**
  Identify inventions, patent applications with date, and/or licenses that have resulted from the research. State whether an application is provisional or non-provisional and indicate the application number. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.

Nothing to Report

- **Other Products**
  Identify any other reportable outcomes that were developed under this project. Reportable outcomes are defined as a research result that is or relates to a product, scientific advance, or research tool that makes a meaningful contribution toward the understanding, prevention, diagnosis, prognosis, treatment, and/or rehabilitation of a disease, injury or condition, or to improve the quality of life. Examples include:

    - *data or databases;*

- *biospecimen collections;*
- *audio or video products;*
- *software;*
- *models;*
- *educational aids or curricula;*
- *instruments or equipment;*
- *research material (e.g., Germplasm; cell lines, DNA probes, animal models);*
- *clinical interventions;*
- *new business creation; and*
- *other.*

Nothing to Report

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

- **What individuals have worked on the project?**

    - *Provide the following information for: (1) PDs/PIs; and (2) each person who has worked at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). If information is unchanged from a previous submission, provide the name only and indicate "no change."*

Name	Project Role	Researcher Identification	Nearest person month worked	Contribution to Project	Funding Support
Ronald Chen	PI			Leads the study, overseeing its execution. Holds weekly meetings with research staff and monthly meetings with co-investigators.	
Matt Nielsen	Co-I (subcontract PI)		1	Oversees the UNC subcontract; meet monthly with PI; provides clinical and research expertise.	
Deborah Usinger	UNC Project Manager		1	Manage all day-to-day aspects of the project; e.g., tracking of data collection, regulatory processes, liaison with Carolina Survey Research Laboratory and Sheps Center for Health Services Research – Web Development Services	
Sarah Walden	UNC Research Assistant		6	Prepare mailings (e.g., gift card incentives to	

				participants for each survey completion), contacting facilities for medical records collection, medical record abstraction; primary point person for NC ProCESS participants.	

- **Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?**

    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*

    - *If the active support has changed for the PD/PI(s) or senior/key personnel, then describe what the change has been. Changes may occur, for example, if a previously active grant has closed and/or if a previously pending grant is now active. Annotate this information so it is clear what has changed from the previous submission. Submission of other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. The awarding agency may require prior written approval if a change in active other support significantly impacts the effort on the project that is the subject of the project report.*

- **What other organizations were involved as partners?**

    - *If there is nothing significant to report during this reporting period, state "Nothing to Report."*

    - *Describe partner organizations - academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) - that were involved with the project. Partner organizations may have provided financial or in-kind support, supplied facilities or equipment, collaborated in the research, exchanged personnel, or otherwise contributed.*
      Provide the following information for each partnership:

        - **Organization Name:**

        - **Location of Organization:** *(if foreign location list country)*

        - **Partner's contribution to the projec**t *(identify one or more)*

            - **Financial support;**

            - **In-kind support** *(e.g., partner makes software, computers, equipment, etc., available to project staff)*;

            - **Facilities** *(e.g., project staff use the partner's facilities for project activities)*;

            - **Collaboration** *(e.g., partner's staff work with project staff on the project)*;

            - **Personnel exchanges** *(e.g., project staff and/or partner's staff use each other's facilities, work at each other's site)*; and

            - **Other.**