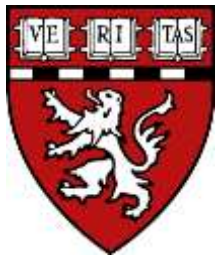


US Air Force Airmen's Perceptions after Receiving Genome Sequencing: Preliminary Results from the MilSeq Project

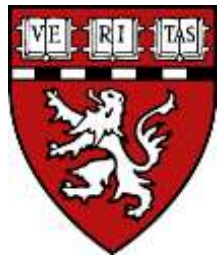
Rebecca Hsu
October 25th, 2019



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US Air Force Airmen's Perceptions after Receiving Genome Sequencing: Preliminary Results from the MilSeq Project

Rebecca L. Hsu, Stacey Pereira, Jill O. Robinson, Rubaiya Islam, Mary Majumder, Efthimios Parasidis, Maxwell J. Mehlman, Kurt Christensen, Megan D. Maxwell, Carrie Blout, Matt Lebo, Jacqueline M. Killian, Mauricio De Castro, Robert C. Green, Amy L. McGuire

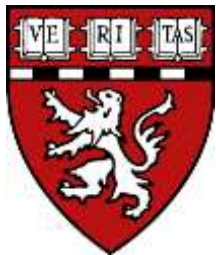


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No Conflicts of Interest to Disclose

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Acknowledgements and Disclaimer

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Learning Objectives

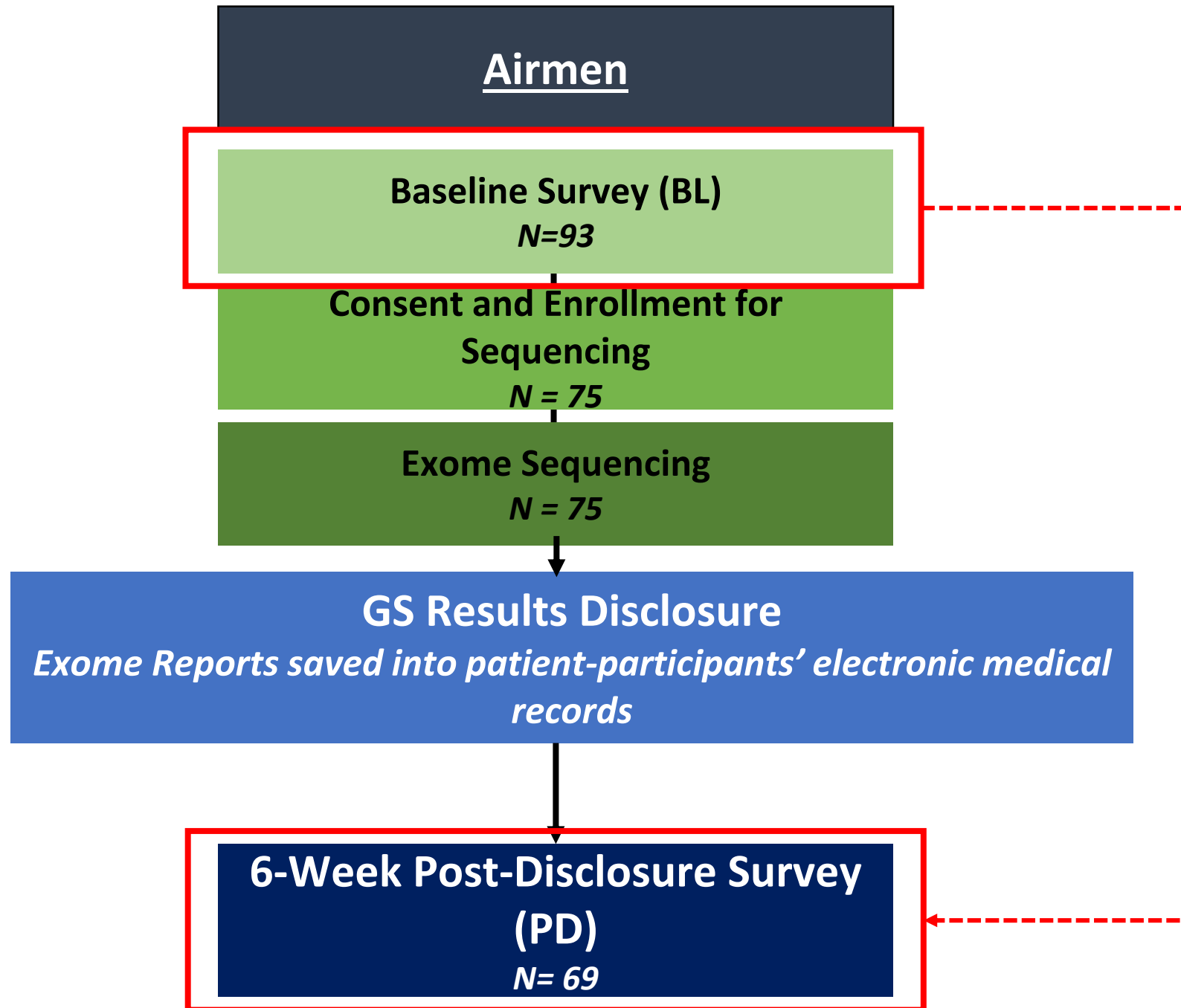
1. Describe Air Force participants' perspectives towards genome sequencing (GS) in the military setting, before and after receiving their own GS results
2. Describe Air Force participants' attitudes towards the utility, benefits, and risks of GS in the Air Force after receiving GS results
3. Identify implications of these findings for integrating genome sequencing into the clinical care of active duty Airmen



The MilSeq Project: Enabling Personalized Medicine through Exome Sequencing in the U.S. Air Force

- Use of genomic sequencing (GS) in active-duty military settings poses unique considerations
- Little currently known about the perspectives of military members' toward GS
- Pilot study exploring the integration of GS into the clinical care of ostensibly healthy Airmen in the USAF

MilSeq Project Study Flow



Airmen Characteristics		N=69
<i>Age, in years</i>		
	Mean (SD)	35.57 (8.5)
<i>Gender,</i>		
	Male	52%
	Female	48%
<i>Race/Ethnicity,</i>		
	Hispanic or Latino	19%
	Non-Hispanic White	70%
	Non-Hispanic Other	10%
	Prefer Not to Answer	3%
<i>Education,</i>		
	Did not graduate from college	35%
	College graduate or higher	65%
<i>Annual Household Income,</i>		
	≤ \$99,999	64%
	≥ \$100,000	36%



The MilSeq Project: Enabling Personalized Medicine through Exome Sequencing in the U.S. Air Force

- Airmen received GS reports with monogenic disease risk, disease-associated risk alleles, carrier status, and pharmacogenomic information
- **We compared Airmen's attitudes toward benefits and risks of GS, Air Force-specific GS considerations, and perceived utility of GS before (BL) and after (PD) receiving GS results**

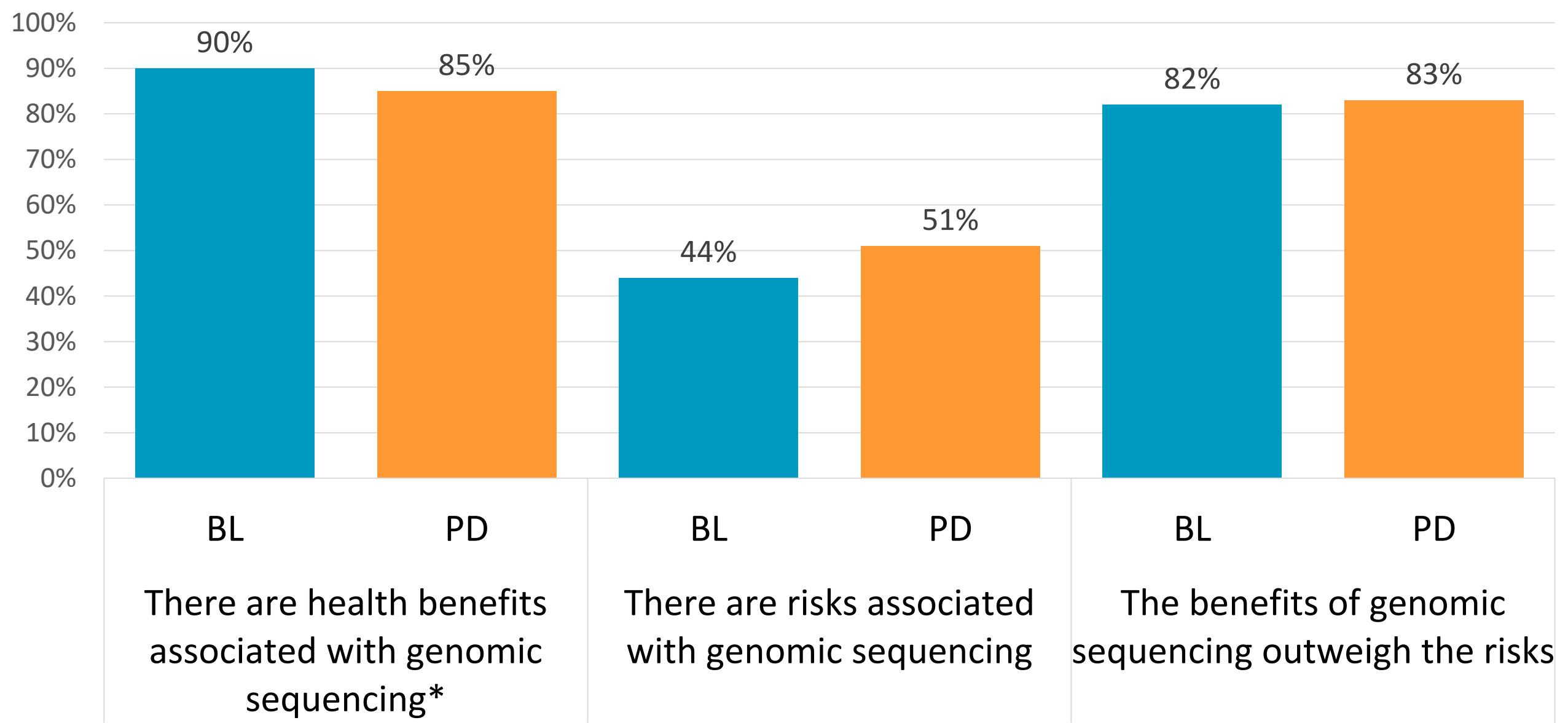
Sequencing Yield

Result Type	Airmen who received finding: N=69	% Total Airmen
Monogenic finding	10	14%
Carrier finding	61	88%
Disease associated risk allele	34	49%
Pharmacogenomic information (PGx)	69	100%
➤ Pgx not including warfarin	65	94%

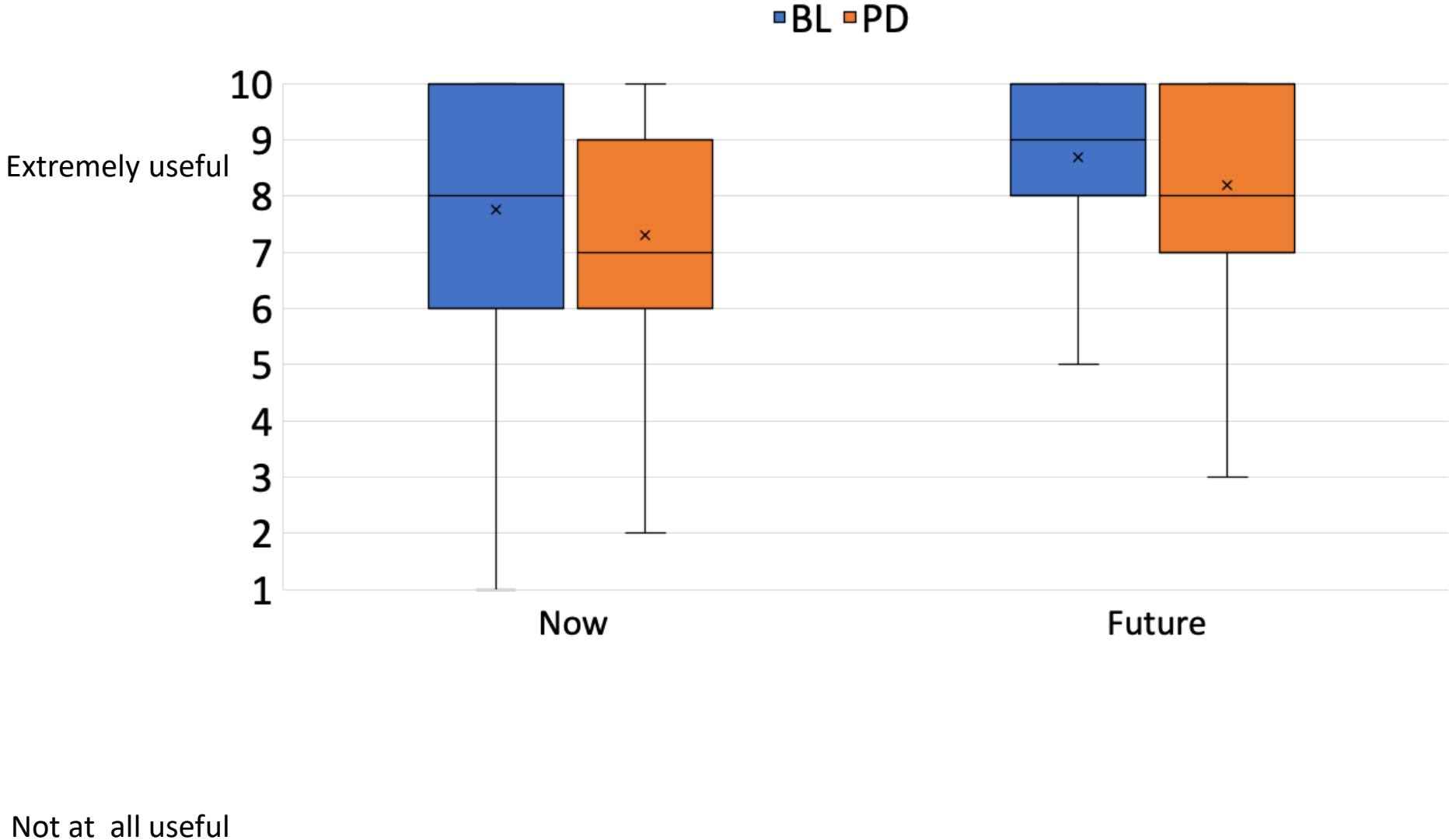
Benefits and Risks

% Agree/Strongly Agree

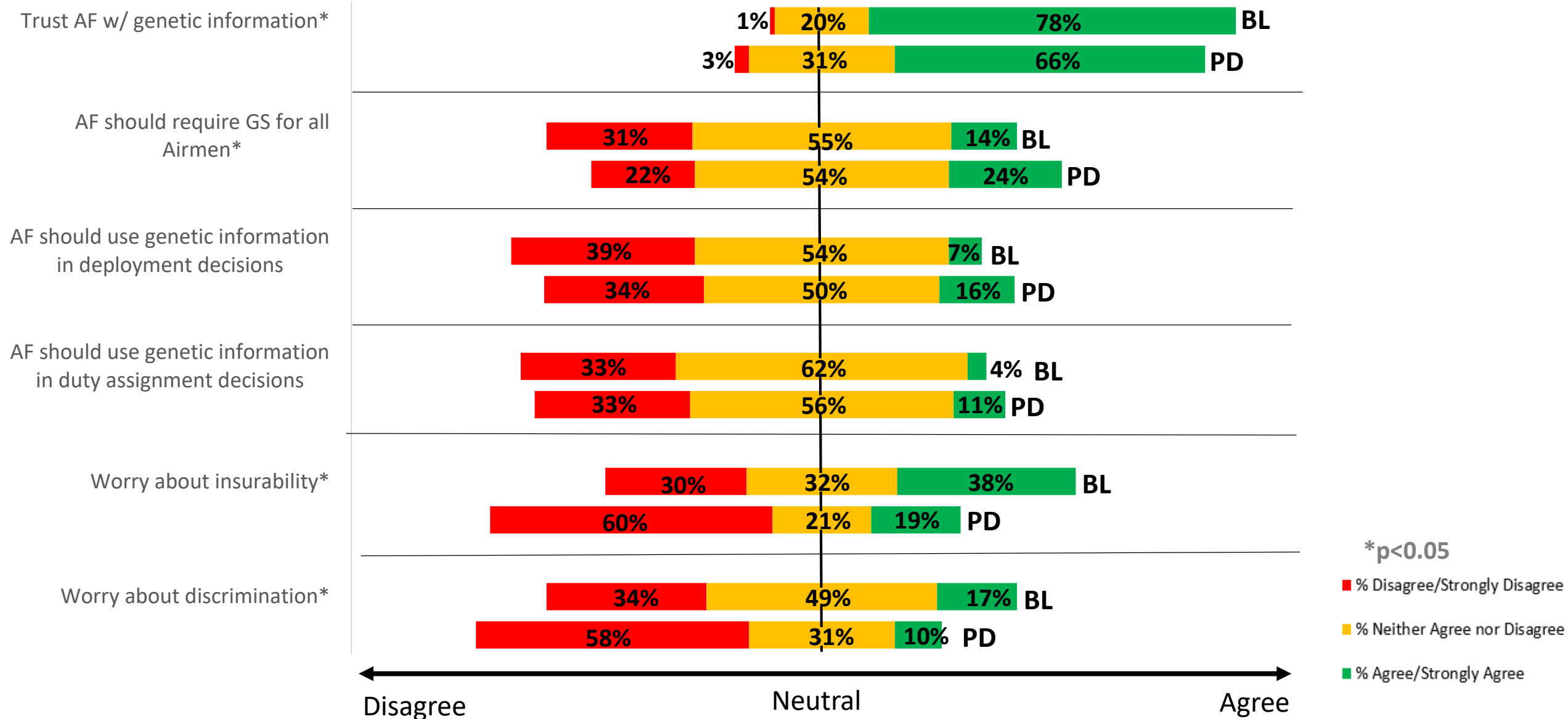
*p<0.05



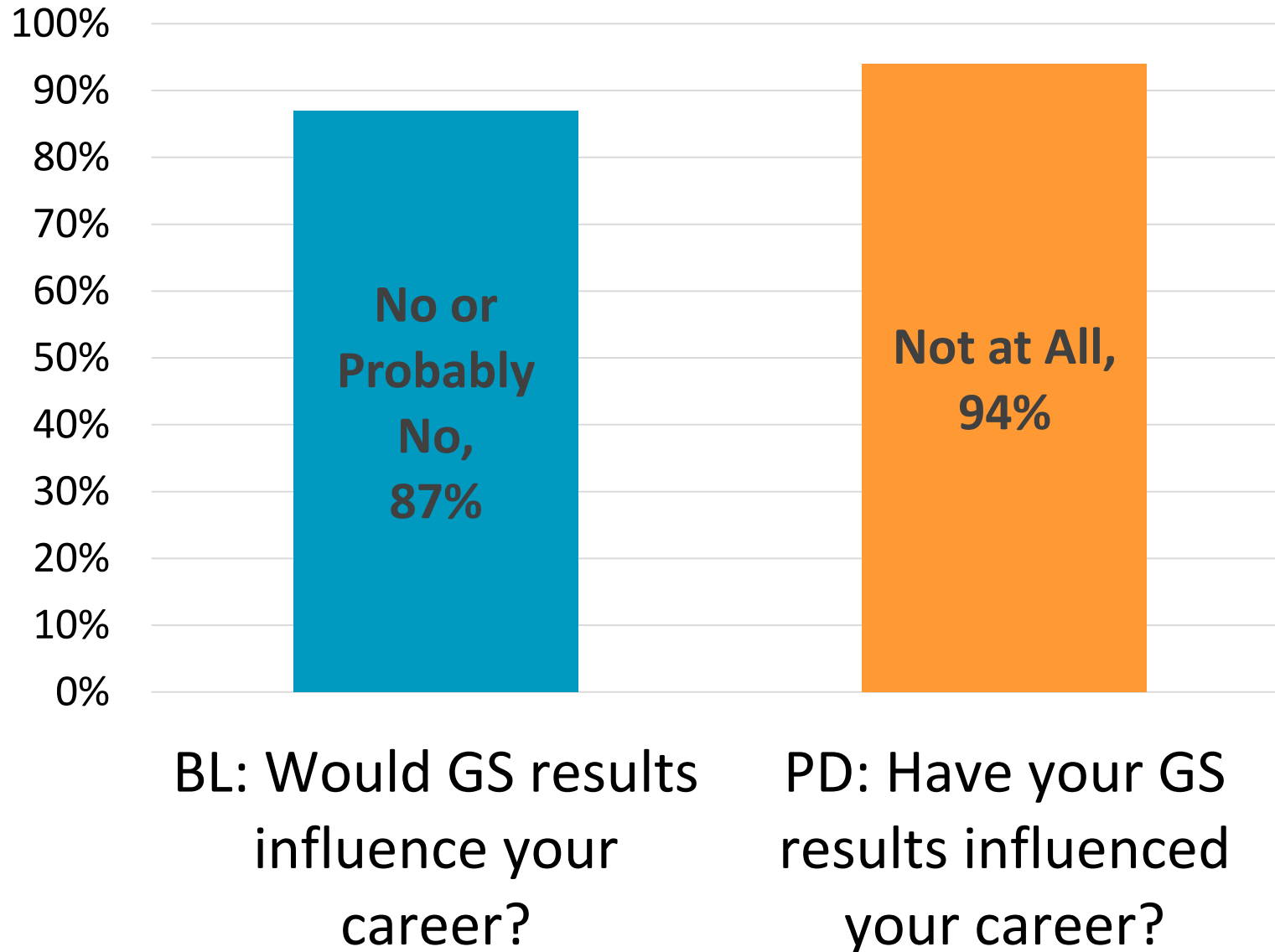
How useful do you think genomic sequencing is for managing your health?



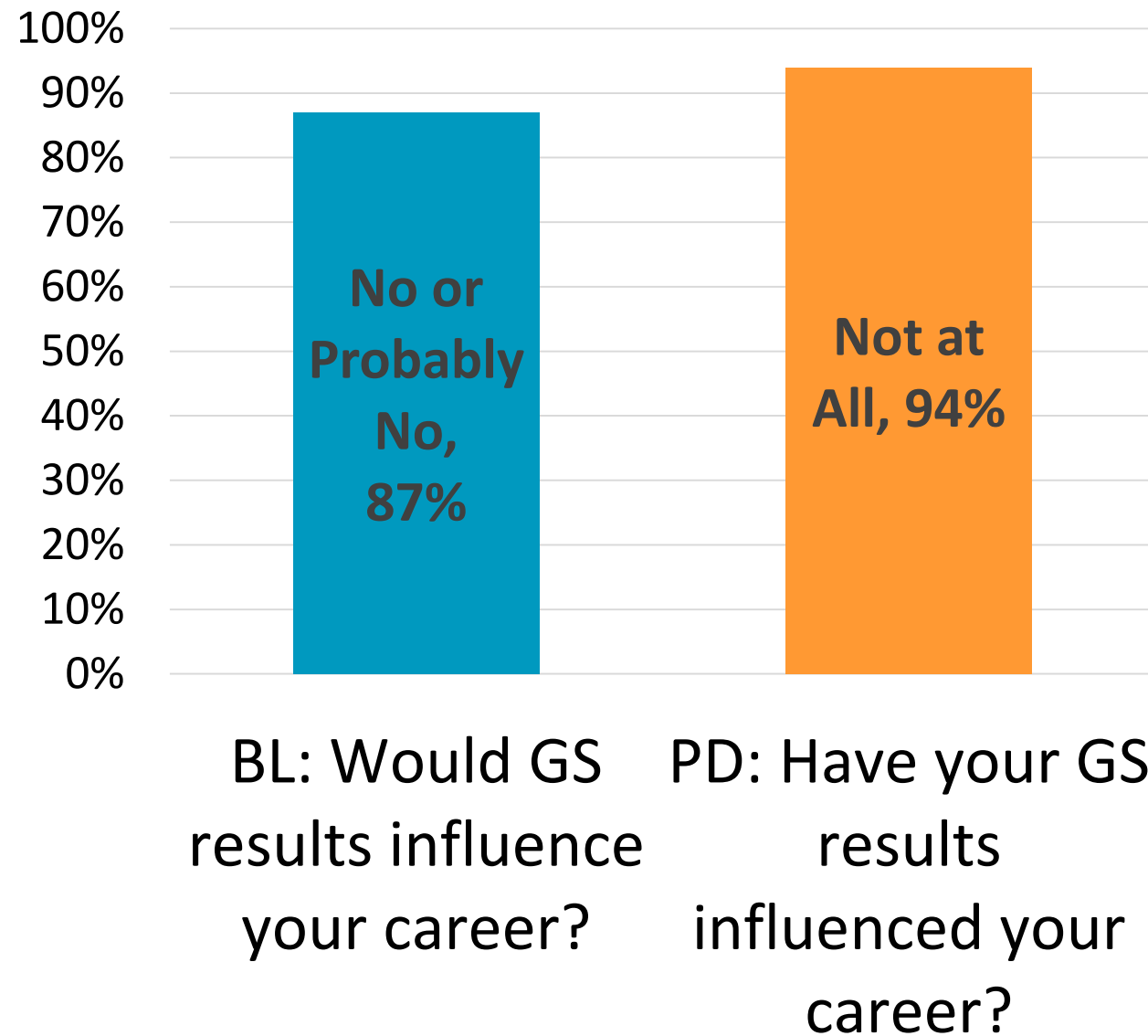
Airmen Attitudes towards GS Before (BL) and After (PD) Receiving Results



GS results influence USAF Career?



GS results influence USAF Career?



How did your genomic sequencing results influence your career?

n = 4

“It will aid me to take proper health measures to ensure I am still physically/emotionally/mentally able to perform my military duties and fulfil my career obligations.”

“Encourage to maintain healthy [sic]”

“I need to stay healthy. This sort of check up drives a mindset to stay healthy, even if it is not necessarily something I can control”

- Airmen perceived utility and health benefits from undergoing GS and receiving results, and were less concerned about insurance and discrimination after receiving results
- Airmen were cautious about GS information being used for military purposes both before and after receiving results, but trusted the USAF with their genetic information and did not think their GS results impacted their careers
- Suggests members of the USAF may be receptive to the incorporation of GS in a military setting, with potential use limitations
- Future research should explore the long-term impact of incorporating GS into military healthcare. For example, will Airmen use their GS results to make health care, reproductive, or other medical decisions?



Limitations

- Study population consisted of convenience sample of USAF Airmen interested in receiving GS
- Small study population limited ability to do analysis by result type returned
- Results may not be generalizable to Air Force at large, the broader US military, or civilian populations

MilSeq Project Team

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Overall
MilSeq Project Workflow

