



WASHINGTON STATE UNIVERSITY
**College of Pharmacy and
Pharmaceutical Sciences**

National Academy of Sciences, Committee to Conduct a Feasibility of Assessing Veteran Health Effects of Manhattan Project (1942-1947) Related Waste meeting, public information gathering session, July 18, 2024

Military Veterans at the USTUR

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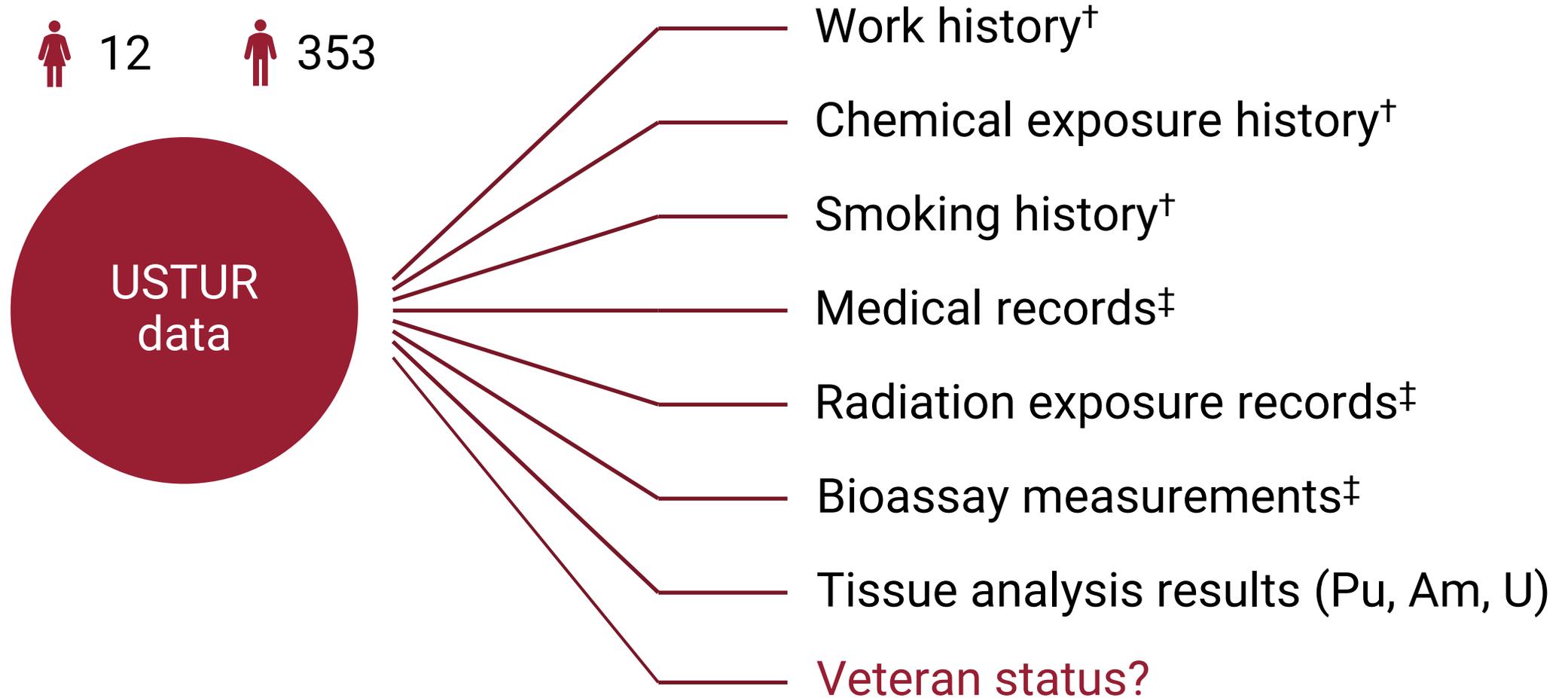
"Learning from Plutonium and Uranium Workers"

US Transuranium and Uranium Registries

- Established in 1968, a research program to follow up occupationally exposed workers by studying the biokinetics and tissue dosimetry of the actinides (mainly plutonium)
- USTUR Registrants: former nuclear workers (mostly DOE) who donate organs and tissues, or their entire bodies, for post-mortem radiochemical analysis
- Since 1992, it has been operated as a federal grant to Washington State University



Unique Data Resource



† - self-reported

‡ - Records are available for the time period when a Registrant was employed at a national laboratory



USTUR Personal/Medical History Questionnaire

- We do not systematically collect information about veteran status
- But we do know that some of our Registrants served in the military
- Self-reported work histories

PERSONAL/MEDICAL HISTORY

Personal History

Name	Social Security	Date	
Street Address	City	State	Zip
Birth Date	Sex <input type="checkbox"/> M <input type="checkbox"/> F	Height	Weight
Physician Name	Physician Address/Phone		

Employment History

Job Title/Type of Work	Employer	Address or Location	Dates (From-To)

Radiation Exposure History

Have you ever been exposed to or worked with: (please check (✓) the appropriate boxes)							
	Yes	No	Dates (From-To)		Yes	No	Dates (From-To)
Plutonium				Americium			
Uranium				Thorium			
Radium				Other Transuranics			
Strontium-90				Other Radioactivity			

	Yes	No	Do Not Know
Do you have a documented deposition of radioactivity in your body?			
If yes, what isotope(s)?			
How Much?			
Have you ever been routinely monitored for radioactivity in urinalysis or			

4.	Pu - 238	X	1944	Los Alamos Laboratory	U.S. Army
5.	Pu - 239	X	"	"	"
6.	Am - 241	X	"	"	"



How Many USTUR Registrants were Veterans?

- 12 **self-reported** work at a national laboratory through the military
 - ✓ 11 US Army at Los Alamos
 - ✓ 1 US Army at Oak Ridge
- 7 self-reported military service, but did not associate it with employment at a national laboratory
 - ✓ Infantry, Radar, Air Corp
- We cannot confirm non-veteran status

365 Registrants



122 Employed 1942-47



19 Military service



12 Military service at a national laboratory



Identifying Veterans from Worksite Records

- If we didn't have the USTUR questionnaire, would we have been able to identify these individuals as nuclear veterans based on worksite records?
 - ✓ Source: medical records
- 1 Registrant who worked at Oak Ridge could be identified from his obituary, but not from worksite records
- Out of 11 Registrants who worked at Los Alamos while serving in the military
 - ✓ 7 could have been identified based on post-1947 records
 - ✓ 1 could have been identified based up records from 1942-1947
- The following slides focus on Los Alamos



Identification of Veterans: post-1947

- 7 Los Alamos workers could have been identified as military based on post-1947 records
 - ✓ Participation in a follow-up program: UPPU occupational histories or other summaries, audiological examinations (from the 1980s)
 - ✓ Subsequent civilian employment: Rocky Flats health history, Los Alamos job applications

AUDIOLOGICAL EXAMINATIONS

NAME	[REDACTED]			DATE OF BIRTH	[REDACTED]	OCCUPATION	[REDACTED]	SHIFT	[REDACTED]	I.D. NO.	[REDACTED]	
Occupational History (Beginning with last previous, working back to first job.)							DEPT.					
	EMPLOYER	CITY	DUTIES	LENGTH OF SERVICE	NOISE EXPOSURE		EAR PROTECTIVES					
1.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
2.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO					
3.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO					
4.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO					
	MILITARY SERVICE	TIME SERVED	BRANCH	EXPOSURE TO GUNFIRE & NOISE								
	LOS ALAMOS	1943 - 1946	ARMY	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO								
	CHECK IF YOU HAVE OR HAD ANY OF THE FOLLOWING											



Identification of Veterans: 1942-1947

- 1 Los Alamos worker could have been identified as military based upon records from 1942-1947
 - ✓ Statement in a letter that his intake exceeded limits set by Lt. Col.
 - ✓ History of exposure says “see records as GI”



Availability of Medical and Exposure Records

- Few Los Alamos records date back to the 1940s
- Medical records typically pertain to routine exams
 - ✓ X-ray record
 - ✓ Urinalysis (non-radiological)
 - ✓ Hematological report
- Exposure records
 - ✓ Contaminated accident reports
 - ✓ Hazard reports
 - ✓ Nose counts/nasal swipes
 - ✓ Plutonium in urine

<u>DATE:</u>	<u>TYPE OF HAZARD</u>	<u>EXTENT OF HAZARD</u>	<u>LOCATION</u>
Nov. 1945	49	Large	
Dec. 1945	49	Large	
Jan. 1946	49	Large	
Feb. 1946	49	Large	
March 1946	49	Large	
May 1946	49	Large	



Availability of Chemical Exposure Records

- The USTUR requested industrial hygiene records from worksites
 - ✓ Frequently, no information was available
 - ✓ Available information from Los Alamos included: copies of reports authored by the Registrant that discussed chemical methods for some of his work, non-chemical accidents (injury to wrist)
- Los Alamos medical and exposure records
 - ✓ One case mentioned chemical exposures from the 1940s
 - ✓ Possibly other information can be gleaned (e.g. plutonium acid)
- UPPU records
 - ✓ Summaries of potential or known chemical exposures



Summary

- We were able to confirm that 7 out of 11 USTUR Registrants were employed at Los Alamos through their military service
- However, this was largely based on their continued employment at a national laboratory, or participation in a follow-up program
- Possible sources of information to identify Los Alamos employees who served in the military
 - ✓ Post 1947 health histories, questionnaires, audiological exams, etc.
 - ✓ Personnel records (job applications for those who continued to work as civilians)
 - ✓ Obituaries
- Industrial hygiene records are limited





Questions

