Assessing Vietnam Veterans’ Awareness of Benefits for Agent Orange Related Diabetes Mellitus Type 2

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Disclosure

Linda O. Bergum, MD, Kirsten Larson and Kayla Schenheit disclosed no relevant financial relationship or interest with a proprietary entity producing, marketing, reselling or distributing health care goods or services.

This program does not include any discussion or demonstration of any pharmaceuticals or medical devices that are not approved by the Food and Drug Administration (FDA) or that are considered “off-label.”
Mr. Speaker, today I rise to pay tribute to Robert J. Erickson, upon the completion of his term as the State Commander of the Disabled American Veterans, Department of Minnesota (DAV MN).
Outline

- Introduction
- Methods
- Results
- Conclusion
What is Agent Orange?

- One of the so-called “Rainbow Herbicides” used by the US military during the Vietnam War
- Mixture of two phenoxy herbicides – 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T)
- Unfortunately, the 2,4,5-T was contaminated with a condensation product called dioxin (TCDD), which is highly toxic to humans
Dioxin Mechanism of Toxicity

- Dioxin
- Aryl Hydrocarbon Receptor Protein (Transcription Factor)
- Cell
- Nucleus
- AHR

- Alters Gene Expression
- Altered Immune Response
- Tumor Promotion
- Endocrine Dysfunction
- Type 2 DM
Who were exposed/affected?

- Men and women serving in Vietnam from 1962 to 1975
  - Spraying, traveling through forests, drinking/bathing in contaminated water
- “Blue Water Veterans” serving on Navy and Coast Guard ships off the coast of Vietnam
- Those serving in the Korean Demilitarized Zone between 1968-1971
- Herbicide testing/storage at US military bases outside the region (Hawaii)
- The people of Vietnam
- Children of those exposed

The Vietnam Women’s Memorial Project
<table>
<thead>
<tr>
<th>Health Conditions Associated with Agent Orange Exposure</th>
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<tbody>
<tr>
<td>• AL Amyloidosis</td>
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<tr>
<td>• Chloracne</td>
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<tr>
<td>• Chronic B-Cell Leukemia</td>
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<tr>
<td>• Diabetes Mellitus Type 2</td>
</tr>
<tr>
<td>• Hodgkin’s Disease</td>
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<tr>
<td>• Ischemic Heart Disease</td>
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<tr>
<td>• Multiple Myeloma</td>
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<tr>
<td>• Non-Hodgkin’s Lymphoma</td>
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<tr>
<td>• Parkinson’s Disease</td>
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<tr>
<td>• Peripheral Neuropathy</td>
</tr>
<tr>
<td>• Porphyria Cutanea Tarda</td>
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<tr>
<td>• Prostate Cancer</td>
</tr>
<tr>
<td>• Soft Tissue Sarcomas</td>
</tr>
<tr>
<td>• Ischemic Stroke</td>
</tr>
<tr>
<td>• Respiratory Cancers</td>
</tr>
</tbody>
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http://www.publichealth.va.gov/exposures/agentorange/conditions/index.asp
Veteran Access to Care Act of 2014

Veterans residing more than 40 miles from a VA medical facility can apply to receive coverage from a non-VA facility.
The Issue: Resource Awareness

Vietnam War

Agent Orange Exposure 1962-1975

Agent Orange Act 1991

Type 2 Diabetes Addendum 2000

Today

~30 Years

9 Years

16 Years

2017
Who is eligible

- Exposure to Agent Orange in Vietnam
  - Exposure on land in Vietnam or on a ship operating on the inland waterways of Vietnam between January 9, 1962 and May 7, 1975
- C-123 Airplanes and Agent Orange Residue
  - Possible exposure of crew members to herbicide residue in C-123 planes flown after the Vietnam War
- Blue Water Veterans
  - Possible exposure on open sea ships off the shore of Vietnam during the Vietnam War
- U.S. Navy and Coast Guard Ships in Vietnam
  - Ships and boats with operations in Vietnam between January 9, 1962 and May 7, 1975
- Korean Demilitarized Zone
  - Exposure along the demilitarized zone in Korea between April 1, 1968 and August 31, 1971
- Thailand Military Bases
  - Possible exposure on or near the perimeters of military bases between February 28, 1961 and May 7, 1975
- Herbicide Tests and Storage Outside Vietnam
  - Possible exposure due to herbicide tests and storage at military bases in the United States and locations in other countries

D. Kleven, rural Minnesota
Shown in Vietnam, 1970
Methods

- 18 question interview developed
- IRB approval granted for this study
- Interviewed 21 Vietnam War Veterans, who were impacted by Type 2 Diabetes and other chronic conditions.
- Veterans contacted by phone or email
  - Disabled American Veterans State Commander, Bob Erickson provided contact information
  - Contacts known to Research Staff
- Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Minnesota
Planning our strategy & Gaining knowledge
Methods

1. Age:
2. Gender: Male    Female
3. What were the dates of your service in Vietnam?
4. In which branch/branches did you serve?
5. What was your military pay grade?
   A) Enlisted
   B) Officer
   C) Other
6. What was your military occupation?
7. Were you exposed to Agent Orange during your time in Vietnam?
   A) Yes
   B) No
   C) Unsure
7a. If yes, please explain.
Methods

8. Have you been diagnosed with Type II Diabetes?
   A) Yes
   B) No
   C) Unsure

8a. If yes, When did you receive this diagnoses?

9. Where is your primary care provider located?
   A) A VA affiliated clinic
   B) A Non-VA affiliated clinic
   C) both
   D) Other: ___
   E) Unsure

10. Is this where you prefer to receive primary medical care?
    A) Yes
    B) No
    C) Other: ___
10a. If it is not where you prefer to receive your medical care, please explain why you receive your care from this facility:

11. How satisfied are you with the primary care you receive?
   A) Extremely satisfied
   B) Very satisfied
   C) Moderately satisfied
   D) Slightly satisfied
   E) Not at all satisfied

12. If you see a primary care provider who is not affiliated with the VA, do you feel he or she is able to help you navigate the VA system when necessary?
   A) Yes
   B) Somewhat
   C) No
   D) N/A

13. Has your primary care provider ever asked about your military service?
   A) Yes
   B) No
   C) Unsure

13a. Is this primary care provider associated with a VA clinic?
14. Has your primary care provider ever asked about exposure to agent orange?
   A) Yes
   B) No
   C) Unsure

14a. Is this primary care provider associated with a VA clinic?

15. Do you receive benefits from the VA to cover the costs of your type 2 diabetes medical care?
   A) Yes
   B) No
   C) Unsure

15a. If no, is it because:
   A) Your healthcare costs are paid by a different insurance carrier
   B) There was a barrier to receiving benefits from the VA
      Describe barrier:____
   C) You were unaware that you could receive benefits from the VA to cover the costs of type 2 diabetes because of your exposure to agent orange
   D) Other:____

15b. If yes, how difficult was it to obtain these benefits:
Methods

15c. If you do receive benefits from the VA to cover your type 2 diabetes costs, did anyone help you obtain your benefits?
   A) Yes
   B) No
   C) Unsure

15c1. If so, who?

15c2. How did they help you obtain benefits?

15c3. If not, how did you obtain your benefits?

16. How do you pay for the majority of your type 2 diabetes healthcare costs?
   A) VA benefits
   B) Medicare
   C) Medicaid
   D) Other insurance provider
   E) Pay out of pocket

17. Do you feel that cost is a barrier to receiving healthcare for your type 2 diabetes?
   A) Yes
   B) Somewhat
   C) No

17a. Explain

18. Were you aware before this interview that your type 2 diabetes health care expenses could be covered by the VA if you were exposed to agent orange during your service?
   A) Yes
   B) Somewhat
   C) No
Results

**Age of Participants**
- 60-62: 9%
- 63-65: 9%
- 66-68: 5%
- 69-71: 27%
- 72-74: 9%
- 75-77: 9%

**Branch of Service**
- Army: 55%
- Navy: 14%
- Air Force: 14%
- Marines: 18%

**Diabetes Status**
- Diabetes: 32%
- Prediabetes: 9%
- No Diabetes: 59%
Veterans Awareness of Exposure to Agent Orange During Service

- Yes: 82%
- Unsure: 18%
- No: 0%
Results

Participant Awareness That Type 2 Diabetes Health Care Expenses Could be Covered by the VA

- No: 62%
- Somewhat: 19%
- Yes: 19%
Results

- Individuals not receiving benefit
- Individuals receiving benefit
Results

- Individuals not receiving benefit
- Individuals receiving benefit
Results

- Individuals not receiving benefit
- Individuals receiving benefit
Results

- Individuals not receiving benefit
- Individuals receiving benefit
Results

Results:

- **All Vietnam Veterans**
  - Aware: 20%
  - Somewhat or not aware: 80%

n=21
Results

All Vietnam Veterans

- Aware: 20%
- Somewhat or not aware: 80%
- Total: n=21

Vietnam Veterans with T2D or Prediabetes

- Aware: 18.2%
- Somewhat or not aware: 81.8%
- Total: n=15
Results

Cost as a Barrier to Receiving Healthcare

62% No
33% Somewhat
5% Yes
Results

Vietnam Veterans that have had PCP Ask About their Military Service

- Yes: 59%
- No: 36%
- Unsure: 5%
Vietnam Veterans with a Non-VA Affiliated PCP that have been Asked About their Military Service

Results

- Yes: 40%
- No: 60%
- Unsure: 0%
Is your PCP (non-VA) able to help you navigate VA system when needed

- No: 27%
- Somewhat: 5%
- Yes: 14%
- NA: 55%
In 2000, Dr. Han Kang of VA's Epidemiology Program published a study that found that the risk of birth defects was significantly associated with the mother's military service in Vietnam.

Future Work

• Complete remaining 29 interviews
  • Female military members
• Paper submission- Research Brief
• Develop online learning tool for CME
• Survey of Rural Physicians
• Meetings with VA docs and admin
• Meet with legislators, senators - State and Federal
• Grant applications
• Outreach to rural clinic/hospital staff - morning conference, grand rounds, etc
Challenges

• IRB Process
• Scheduling Interviews
• Duration of Interviews
• Doubting the benefit
• Limitations of group interviewed
Conclusions

- Vietnam Veterans are largely unaware of their eligibility for the Agent Orange related T2D healthcare benefit
- Majority of Vietnam Veterans are not asked about their military service by their non-VA healthcare provider
- Advise patients to get assistance from their local VFW or DAV when filing a claim to receive this benefit
- *Vietnam veterans exposed to Agent Orange should apply to receive full coverage for their T2D health care costs*
Resource for Physicians and Patients
Thank You

Minnesota Academy of Family Physicians Foundation

University of Minnesota Medical School - Department of Family Medicine and Community Health

Bob Erickson

Sherri Fong

Sam Carlson

Dr. David Power
Resources

VA: http://www.publichealth.va.gov/exposures/agentorange/
http://www.va.gov/vetdata/veteran_population.asp
http://www.vva.org/Guides/AgentOrangeGuide.pdf
http://www.va.gov/directory/guide/division_fish.asp?dnum=1


CDC: http://www.cdc.gov/nceh/veterans

Photos: http://www.nationalmuseum.af.mil/shared/media/photos/071002-F-1234P-022.jpg
http://en.wikipedia.org/wiki/Agent_Orange

http://www.militarytimes.com/story/military/benefits/health-care/2015/02/16/ama-cpt-codes-military-history/2336395/
http://www.vva.org/Guides/AgentOrangeGuide.pdf
https://archive.org/details/USAF-38641