

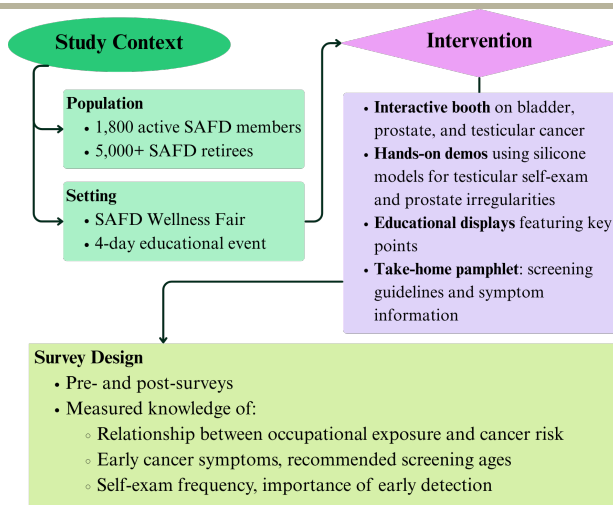
Bridging Occupational Risk and Prevention Policy: A Community-Based Urologic Cancer Education Initiative for Firefighters

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Introduction & Policy Context

- Firefighting is classified as a **Group 1 carcinogenic occupation** by the International Agency for Research on Cancer (IARC)
- Common exposures include **soot, diesel exhaust, PAHs, PFAS**
 - 16% higher risk of bladder cancer**
 - Prostate cancer** is diagnosed **1.21 times more often** in firefighters than non-firefighters
- The Wade Cannon Act** (HB 198 effective June 1st, 2026) in Texas grants free occupational cancer screening annually after five years of service
 - Doesn't specify cancer types or educational standards
 - Leaves gaps in urologic cancer awareness and early detection advocacy
- Federally, the **FIRE Cancer Act of 2025** (H.R. 1610, not yet passed) proposes \$700 million in federal grants to expand firefighter cancer prevention/screening nationwide
- Targeted education booth** introduced at the SAFD Wellness Fair
 - Enhance urologic cancer literacy** and promote **preventive behaviors** among firefighters
 - Serve as a **community-level advocacy model** that can inform future state and federal implementation efforts

Materials and Methods



Results

- 68 firefighters** completed the pre-survey; **48** completed the post-survey
- Average scores increased** from **57.6% to 82.1%** ($p < 10^{-8}$)
- Chi-square tests** showed significant improvement on:
 - Occupational risk factors ($p = 0.0026$)
 - Hematuria as a bladder cancer symptom ($p = <0.00001$)
 - Prostate screening guidelines ($p = 0.0059$)
 - Testicular self-exam frequency ($p = 0.0044$)
- Qualitative feedback** highlighted:
 - Value of **practical, firefighter-specific information**
 - Increased sense of **empowerment** regarding screenings and self-care

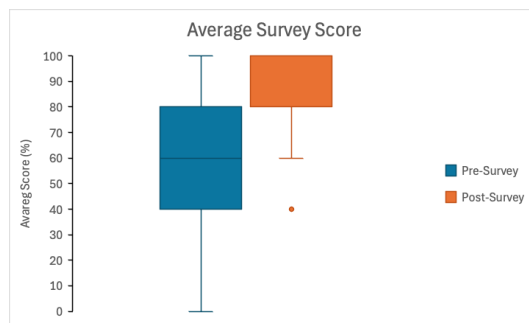


Figure 1. Average participant survey score, as a percentage.

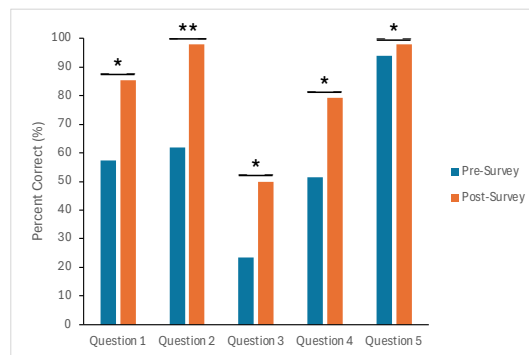


Figure 2. Survey question accuracy, indicating the proportion of correct answers chosen. * $p < 0.01$, ** $p < 0.0001$

Conclusions

- Intervention improved firefighter knowledge of:
 - Urologic cancer risks and symptoms
 - Screening guidelines and self-exam practices
- Addressed a critical gap in existing wellness initiatives
- Pre/post survey show increased awareness and understanding
- Future plans include:
 - Integrating content into future wellness fairs
 - Providing station-level education sessions
- The program offers a scalable model for other high-risk occupations
- Demonstrates the **value of community-provider partnerships** in public health outreach
- Support inclusion of **urologic cancer screening and education standards** in future implementation of Texas HB 198 and federal programs such as the FIRE Cancer Act

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