Filling the Gap: Insuring Preventive Medicine Competency in Military Medical School Graduates

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Background
Operation BUSHMASTER is a field training exercise and capstone experience for the students at USUHS. It has been a critical part of the curriculum for xx years. The exercise focuses on both development and evaluation of students as medical officers in a military contingency operation providing health services support in austere settings. After a two week didactic and military planning session, the students “deploy” to a fictitious country in support of an infantry battalion. Over 4-days, the students cycle through a series of scenarios and role-play different positions on a health care team in a Role-1 facility. Students are divided into platoons mentored and graded by dedicated faculty Observer-Controller teams of 8 personnel covering two shifts. Each 24-hour period represents 4 exercise days and graded by dedicated faculty Observer-Controller teams of 8 personnel covering two shifts. Each 24-hour period represents 4 exercise days and

Problem Statement
Preventive medicine (PM) is a key component of military medicine, but often takes a backseat to trauma in training programs. This gap was identified in Operation BUSHMASTER, the culminating military field exercise for undergraduate medical and graduate students at the Uniformed Services University of the Health Sciences. To fill this gap, a comprehensive simulation-based PM curriculum and dedicated PM observer-controller (OC) faculty were developed and implemented to insure military medical leaders obtain PM competencies critical to force health protection.

Curriculum Development

Problem-Based Learning: 7 Characteristics of Problems

- Common, prototypical problem that graduates would be expected to handle
- Serious outcome if not appropriately managed
- Implications for prevention
- Provide interdisciplinary view
- Lead to an encounter of the faculty member’s objectives
- Present a concrete task
- Have a degree of complexity appropriate for students’ prior knowledge

Problem-Based Learning: Characteristics of faculty facilitators

- Start with content expertise
- Develop “problem” expertise
- Have all materials needed for each problem
- Provide interdisciplinary input
- Serious outcome if not appropriately managed

Solution #1
- Elevate PM to a graded position

Solution #2
- Develop cadre of dedicated PM faculty

Solution #3
- Refine PM curriculum and scenarios with specific student outcomes and expected behaviors

PM OC FACULTY GUIDE
- Detailed description of PM Problems by exercise day
- List of learning objectives and expected PM behaviors
- Resources for faculty and students

PM TOOLKIT
- Special Event Guidance on the Control of DNBI in Pandakar
- Table of FBI Incubation Periods
- CDC Guides to Confining and Controlling COVID-19 Outbreaks
- Control of Communicable Disease Outbreaks

UNIT HEALTH & HYGIENE
- Ensure all personnel take the notional malaria prophylaxis (Skittles)
- Conduct daily camp site survey and watering systems with PM technicians
- Instruct platoon on preventive measures for heat, cold, rest, nutrition, PPE
- Monitor health and performance of platoon

Student Feedback
- 89% of students who did not sit role-play as PMO during the pilot agreed that they would have liked the role.
- “Not enough time to fully understand the role of PMO and their importance to the team.”
- “Lack of focus on the PM role is to blame.”
- “PM has a lot of work to do to make it relevant to the field.”
- “We were not sure what PMO means.”

Discussion
Military preventive medicine involves a multidisciplinary team of professionals who integrated well into the platoon faculty-OC team. Other faculty-OCs welcomed the PM-OC’s knowledge and experience for both simulated and real-world inputs into the exercise environment. The diversity of the PM-OC team did not hinder development of PM “problem” expertise. PM-OCs found the PM faculty guide to be the most useful tool for preparation. PM scenarios provided additional opportunities for leadership evaluation especially on a team and organizational level.

Conclusions and Recommendations
- PM is a vital component of military medicine and can be effectively taught and evaluated in a complex, high-fidelity, simulated field exercise.
- A four-year military preventive medicine curriculum will be implemented to better prepare medical students for the BUSHMASTER capstone event and ultimately, to function as military medical leaders.
- Consider investigating if the PM curriculum has any affect on real-world DNBI experienced during the exercise.
- Role play and problem-based learning tools used to implement a PM curriculum in a military field exercise could be utilized to teach PM concepts in other aerospace, military or civilian settings.

References:

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