Preventive Medicine by Primary Care Physicians

Focus on Deployments

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At least clinical, maybe community

- Clinical Preventive Services - *individuals*
  - Vaccinations and other prophylaxis
  - Disease screening (HTN, CAD, cancer, hyperlipidemia, etc.)
  - Health education (smoking cessation, safety, etc.)
  - Community clinics – TB, STD, etc.

- Community Preventive Services – *populations*
  - Policy, media/marketing, inspections, surveillance, outbreak investigation, etc.
  - Elimination (remove high noise process), engineering (design quieter machine), administrative (rules to decrease noise exposure), and personal protective interventions (earplugs)
  - Research/education
  - “Police Powers of Public Health” – quarantine, confiscate materials, close businesses, investigation
What is Preventive Medicine (PM) and Public Health (PH)?

- Preventive Medicine seeks to prevent all disease and injury to individuals and populations at all times.
- It includes every interaction between a human being and his/her environment.
- It includes environmental factors that might eventually affect people.
- There is nothing that is not Prev Med business.
- There is no one who would not benefit from a Prev Med intervention.
What does Army PM do in garrison?

- Audiology/Hearing Conservation
- CBRNE Defense
- Epidemiology and Disease Control
- Environmental Health (EH)
- Health Physics (HP)
- Health Promotion and Wellness (HPW)
- Industrial Hygiene
- Occupational/Environmental Health
- Public Health Nursing
Preventive Medicine - Audiology/Hearing Conservation

- Hearing screening -
- Periodic
- Pre and post deployment

- Earplug fitting
- Soldier education

- Hazard assessment
- Command consultation
- Research & teaching
Preventive Medicine - CBRNE Defense

Stakeholder education and coordination, hazard assessment, pre-incident planning, post incident mitigation

- Chemical – includes antidote stockpile, decreasing toxic industrial chemical threat
- Biological - includes mass vaccination – influenza, anthrax, smallpox

• Radiological
• Nuclear
• High Explosive

TERROR FARM:
A hypothetical model of a clandestine nuclear compound

STEEL BUILDING:
The terrorists would require one new steel building, like you might find in an industrial park. Here, they would test their samplings and double-check their calculations.

PERIMETER FENCE:
The compound would be surrounded by a barbed wire fence. But security would be tight, so as not to attract attention.

TWO URANIUM SHELVES:
The enriched uranium would be stored a safe distance from the farm house in two outbuildings.

THE MACHINE SHOP/FOODSTORE:
Equipped with a vacuum furnace, the barn would melt the uranium metal bar.

THE BARN:
Once cleaned and sanitized, the barn would be used for storing and testing the product. The barn's gas tanks.

THE FARMHOUSE:
The faction would use the house for storing and testing the product. The barn's gas tanks.

Aum Shinrikyo’s Sarin Facility

The interior of Satani No. 7, a suspected sarin production plant

Chemical plant the first four stages for production

SOLVENT RECOVERY

STEPS 1 - 3

STEPS 4 & 5

STORAGE

Reference: Senate Subcommittee Hearings

NOTE: Group was preparing to produce 7/8 tons of Sarin in a 39 day period.
Preventive Medicine - Epidemiology and Disease Control

Routine surveillance
Passive – getting reports from clinicians, labs, other systems (ESSENSE)
Active – going out and asking health care professionals for the data

Investigations
Outbreaks – hepatitis C in OR patients
Exposures – unsterilized dental equipment
Incidents – hantavirus death
Preventive Medicine – Home, Barracks, Apartments

1. Inspections (by request and on demand)
2. Education
3. Hazard mitigation

- Wall structural damage
- Mold
- Bed allergens
- Space heater
- Unsecure firearms
- Unsecure plug
- Proper food handling/storage
- Poisons accessible
- Lead based paint
- Radon gas
- Plant (falling, poisoning)
- Curtain strings - strangulation
- Rug (tripping)
- Smoking, fire, carbon monoxide
- Unsecure rug
- Hot pot, gas
- Poor indoor air
- Steep stairs, no rail, poor lighting

1. Bed/bath safety
2. Smoking, fire, carbon monoxide
3. Plant (falling, poisoning)
4. Radon gas
Preventive Medicine – Restaurants, Public Areas

**Education** – *Serve Safe*, Food Handlers

**Inspections**
- Food service facilities (fixed and mobile)
- Gyms and pools
- Barber shops
- Any other facility by request/direction

Salmonella
Shigella
E. Coli
HAV
Enteroviruses
Giardia

Injury prevention – cardiac, ortho, overexertion, other
Preventive Medicine – farms, playgrounds, other outdoor areas

- Liquids – fuel, insecticides, pesticides, toxic industrial chemicals
- Heavy equipment, heights, moving vehicles

- Biologics – brucella, Q fever, tetanus, anthrax, leptospirosis, sporotrichosis, coccidiomycosis, etc.
Preventive Medicine - Environment

Environmental incidents – oil spills, pollution, etc.

Interventions – all of the above (spraying, etc.)

WNV, rabies, hazardous insects/animals, water sources, heat/cold
Preventive Medicine - Factory

Chemical - liquid, gas sampling

Noise

Ergonomics, lighting, computer flicker

N95 respirator fitting

Heavy lifting

Injury risk - Moving vehicles, assembly line

Air quality/flow

Incident response

Asbestos/lead/particulates

Education – Individuals, groups, leaders
Preventive Medicine - Hospital

Food and water quality, food handling, waste

Child services inspection, hygiene, immunizations, education

Waste anesthetic gases, infection control, lasers

Mold

TB prevention and control

Chemotherapy agents

Radiation exposure monitoring, source containment, tracking, hazard assessment, nuclear medicine support, incident response, waste disposal, education
Preventive Medicine - Transportation

- Operator physicals
- Drug screening
- Law/rule enforcement
- Medical training
- Occupational and environmental safety
Preventive Medicine – Public Safety

Physical exams
Occupational and Environmental Health
Medical training
Safety and equipment surveillance
Preventive Medicine - Sports

- Padded goal posts
- Breakaway bases
- Turf in good condition
- Safety rules enforced
- Proper screening, equipment and conditioning
Health Promotion

- Periodic health screening/risk assessments
- Education (individuals, dependents, FRGs and units) - Tobacco Cessation, STD prevention, Substance Use, Pregnant Soldier Fitness, “Take Care of Yourself”
- Child and Youth education in schools
- Health fairs
- Media (pamphlets, newspapers, radio, TV, events (parades)
Your first duty station as a staff family physician – what PM stuff to do?

• If a PM doc is around, you can often do as little or much as you would like, and have time for.

• If no PM doc is around, you will find yourself doing a lot more, especially in small facilities.
  – Specialists such as environmental health techs and industrial hygienists will do the sampling, but you will need to interpret the results
Where are the PM docs?
What does Army PM do while deployed?

• Most of the same things as in garrison
• Disease and Non-Battle Injury (DNBI) report
• FOB inspections – latrines, dumps, showers, kitchens, freezers, barracks, etc.
Now you are going to deploy...what PM stuff to do?

• Find out specifics on deployment (where (exactly), when, how)
• Get trained yourself and train others
  – Deployment resources
  – CHPPM Med Threat Briefs
  – Deployment health guides
• Train others
Welcome
The Academy of Health Sciences Fort Sam Houston is known as the "Home of Army Medicine" and "Home of the Combat Medic." The US Army Medical Department Center and School (AMEDDC&S), Academy of Health Sciences (AHS) is the largest medical education and training campus in the world producing nearly 35,000 medical profession graduates every year. Instruction at the AHS includes 315 programs of instruction covering the entire range of Army Medical Department Corps: Medical, Dental, Army Nurse, Veterinary, Medical Service, and Army Medical Specialist Corps. Courses are also available to qualified Department of Defense civilians, other Services, international military and civilian personnel.

Mission
To develop, train, and educate highly skilled military medical personnel and leaders through academic excellence.

Vision
Empower people to provide the world’s best military medical education and training to the Nation today and tomorrow.

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You are now deployed…what PM stuff do you do?

- Most Forward Operating Bases in developed theaters (such as Iraq and Afghanistan) now have reliable internet access (NIPR) and classified networks (SIPR)
- Use the same AMEDD resources that you used predeployment

BLUF – Do everything you did in garrison, and more
Burnout Latrines

Hazards – diesel fuel, fire, dust/particulates, smell

Prevailing winds blew smoke directly into sleeping quarters of division staff
Handwashing Stations

Early

Late

Soap

Spigot
Latrines: early later

1 BCT Tepee
SGT Mattei, 91S, checking 400 gallon water tank at Camp St. Michael

Army 91S = Environmental Science Tech
Checking temperature in the refrigerator van
CPT Christopher Johnson, Environmental Science Officer
Oil fired power plant at Iskandariyah
Russian Reactor, Al Tuwaitha Nuclear Facility

Environmental radiologic issues
Teaching Advanced Life Support in Obstetrics (ALSO) to Iraqi physicians
Clinic at Kirzhah Range
CPT Matson (PA) sews up a patient
Weekly DIVSURG Update

- General Info – Iraqi National Guard, Team Spirit (morale), malaria prevention, heat/skin/eye/GI disease, other diseases, anthrax/smallpox immunizations, field sanitation teams, supplies/logistics, etc.
- DNBI report

DNBI Results OIF1/1.5

- Disease/Injury Categories
  - Rate per 1000 soldiers at risk

- PM Notes (spraying, OH/IH, etc.) and Contact info
On redeployment, more PM to do

- General required surveillance – PDHA, PDHRA
- Surveillance for late presentation of endemic diseases (TB, malaria, leish, etc.)
- Behavioral health issues
- Depleted uranium program
Bottom Line

• Family Physicians will always need to do the clinical portions of Preventive Medicine.

• If a Prev Med doc is not available (such as when they deploy as a battalion or brigade surgeon, or if they are so inclined or so directed, they can do many of the Population Health aspects of PM.

• Questions??????????????