

Wildland Fire Air Quality Response Program

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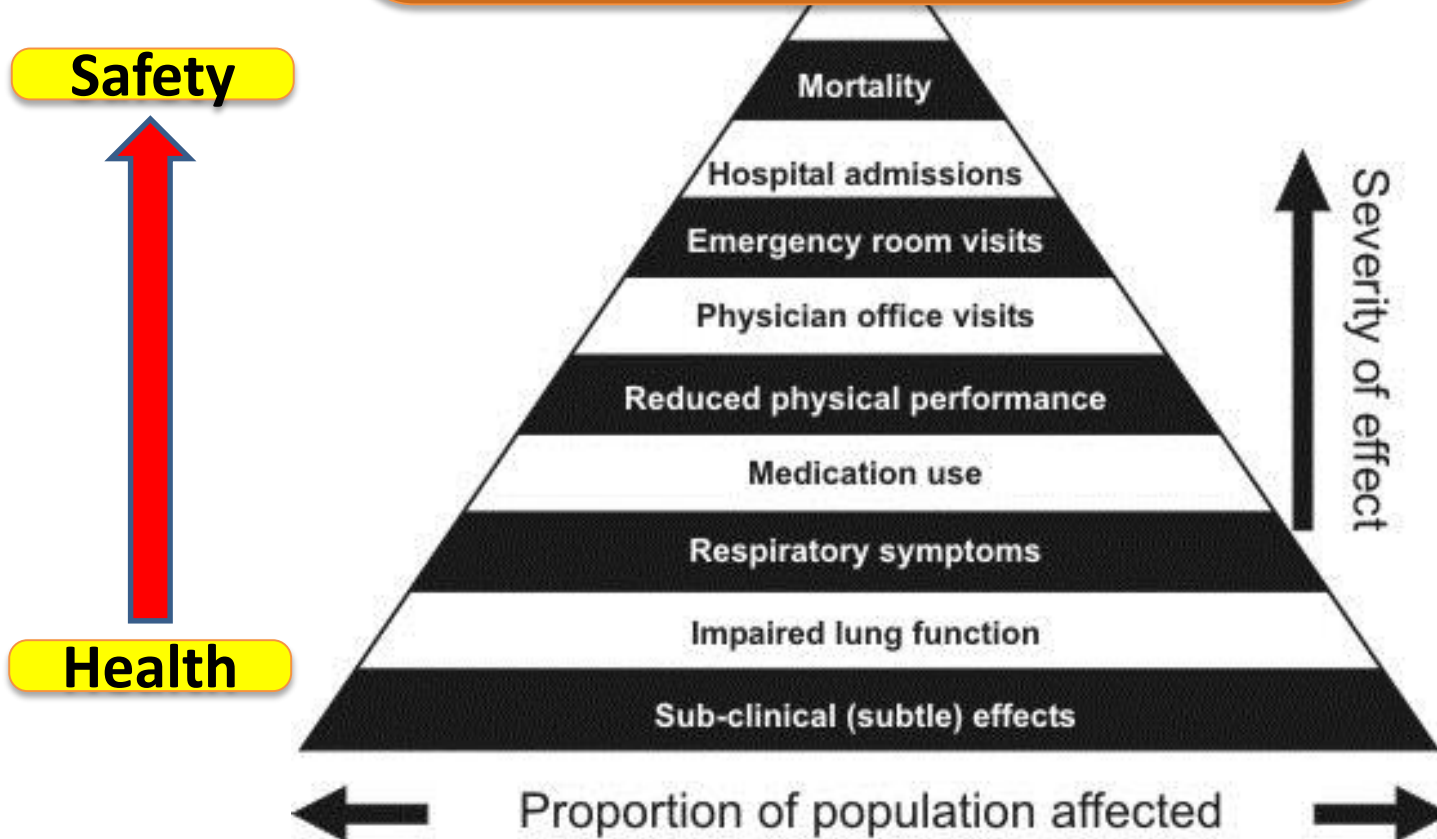


An Evolving Interagency Program-

Wildfire Air Quality Impacts and Prescribed Fire Smoke Management

- One in three households has someone with respiratory issues: child with asthma, COPD, emphysema, etc. 26 million have asthma in US.
- Address sensitive groups at risk: people with asthma, older adults and those of low income. Science: pregnant women, diabetics.
- Public air quality warnings effective and at-risk public responds in kind
- **NO** particulate matter is healthy: Designations & SIPs
- Ozone EPA Science Analysis Effects 60ppb and below
- Medical costs: \$8 to \$80/day/person exposure to wildfire smoke
- Smoke impacts to public are longer at higher levels
- Wildfire Seasons longer and hotter
- Under the Clean Air Act, States obligated to respond and protect the public from high levels of air pollution
- Land managers know more of what the fire will do in terms of: fire spread, growth, intensity, burnouts, fuels, consumption, emissions, weather, duration,...
- Land managers using risk assessment to manage wildfires now.

Transition from public health to public safety impacts



Wildland Fire Air Quality Response Program

Focus for wildland fires through use of Air Resource Advisors:

- 1) Smoke impacts to public health and **safety**
 - 2) Transportation safety (roads & aviation for public & personnel)
 - 3) Fire personnel smoke exposure (on-fireline, ICP, Base Camp)
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- A) Improving how Air Quality considered on incidents and decisions (risks, exposure, strategy, tactics)
 - B) Providing information to public and fire personnel
 - C) Supporting partners (air quality, health departments, county, tribal govt.) addressing public health and safety concerns

Methods-Monitoring, Modeling, Messaging, Coordination

- **Monitoring** – Deployment, Interpretation and Dissemination
 - National Cache of 20 E-SAMPLERs (NFES 5840)
 - EPA contributing 4 E-BAMs –being retrofitted
 - Data via GOES Satellite linkage
 - Data online real-time @ WRCC, EPA AirNow Tech FY15 Public Wildfire Smoke page on AIRNOW – [PM2.5 Only](#)



- **Modeling**–Provided by PNW AirFire Team
- Operational incident / regional / national forecasting of air quality impacts
 - BlueSky Playground
 - Fine-scale (1 km) NWS Fire Behavior Grids
 - National scale meteorology and climatology
 - Complexity Analysis tool under development
 - Monitoring Analysis Tool

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- **Messaging** – Conveyed via ARA's
 - Cohesive message (State/District Health & Air Quality Agencies, National Weather Service)
 - Transportation Safety Alerts and Warnings
 - Incident public meetings
 - State Smoke Blogs
 - Cooperation with State Emergency Response Agencies and Plans
- **Stakeholder and Partner Collaboration**
 - Planning & communication of fire strategy & tactics translated into smoke impacts and response
 - State Emergency Response Plans for Wildfire Smoke
 - EPA , CDC collaborative efforts
 - Coordinate Interagency Program and ARA cadre
 - Agreements, training, position development




Wildland Fire Air Quality Response Program

● National Effort

- Cadre of Air Resource Advisors (THSP-ARA) Developed
- Two Training Sessions Held – Trainee Program
- Training will be held in Spring 2015
- Range of Skills in 24 ARA, 12 trainees
- FS, BLM, FWS, NPS, NRCS, AD-Contractor, EPA???, States: GA, NC, FL
- Coordination/dispatch by Program Manager
- Dispatches: 2011- handful, 2012-13, 2013-25, 2014-39
- Requests: IC, other on IMT, FS Regions, National Forests, National Parks, State Forestry?
- Assignments: Incident Level, Forest, State Level Program Efforts, Agency Admins. ,Area Command , GACC, Regional Wildfire Decision Support Centers

Wildland Fire Air Quality Response Program

- Challenges:
 - Thresholds for warnings and evacuation
 - PM2.5 Limited Monitoring (small #, device type, placement)
 - Other pollutants: monitors, models, display
 - Other pollutants: combined exposure/thresholds
 - Visibility as a surrogate for monitoring (limits, 3-tiers)
 - Program awareness issues and acceptance (ARAs)
 - Incident Management Teams
 - Agency Administrators
 - Stakeholders/Partners
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Wildfire Challenges continued...

- Display of monitored data
 - National, state, tribal, local district, Blogs, Chinese hourly site
 - Thresholds and duration (1-hr, 3-hr, 24-hr, NowCast)
- Communications
 - Who speaks: authority, responsibility
 - Methods: On-grid (Inciweb, PIO, blogs, Facebook, etc.)
 - Off-grid: rural communities and tribal areas
 - State Emergency Response Protocols (pre-season)
- Smoke Alerts
 - Shelter in place – criteria for safely staying inside a structure
 - Air Quality Shelters – criteria, access
 - N95 masks – who, when, providers and messages
 - Role and information for medical providers
 - Kids and schools...