The “Average” U.S. Aggregate Worker
The “Average” U.S. Aggregate Worker

“Have I been affected by potential exposures at work?”
NSSGA S&H Guiding Principles

NSSGA:
- “Advocates that members maintain a strong and unwaiving commitment to safety and health at workplaces.”
- “Urges members to establish safety and health programs that will develop a knowledgeable workforce capable of recognizing, analyzing and avoiding inherent hazards of the crushed stone and sand and gravel work environment.”
- “Pledges to work toward the prevention of all occupational injuries and illnesses.”
Genesis of the NSSGA OHP

• Mandate of NSSGA Board of Directors
• NSSGA Safety & Health Guiding Principles
• Developed by the Industrial Hygiene Subcommittee of the NSSGA Safety & Health Committee
• Multiple peers reviews
• It’s still under development…
Key Principles of the NSSGA OHP

• Voluntary program, strong expectations
• Comprehensive structure, ample direction
• Company-specific implementation
• Not a substitute for MSHA/OSHA compliance
Potential Aggregate Production Hazards

- Respirable crystalline silica
- Nuisance particulates
- Noise
- Welding (& cutting) fumes
- Mineral fibers
- Solvents
- Diesel exhaust
- Temperature stress
NSSGA OHP Outline

1. Senior management commitment
2. Program communication, promotion & training
3. Exposure assessment
4. Exposure control
5. Medical surveillance
6. Smoking cessation
7. Program evaluation
1. Management Commitment

- Formal declaration of company commitment
- Signed by the highest ranking company officer
- Forwarded to NSSGA
2. Communication, Promotion & Training

- Need to market & communicate to workers
- Need to focus on benefits & concerns:
  - Prevent the occurrence of occupational illness.
  - Better manage existing occupational illness.
  - Identify non-occ. illness currently unknown to the worker.
  - Improve worker morale.
  - Improve regulatory compliance.
  - Improve costs & productivity.
Communication, Promotion & Training

• Need to market & communicate to workers
• Need to focus on benefits & concerns:

“Who will pay for this?”

“Are you doing this to look for drugs and alcohol?”

“Why are you doing this now?”

“What’s the union’s involvement?”

“Who will have access to my data?”

“Will I lose my job if an abnormality is found?”

“Will it hurt...?”
3. Health Hazard Assessment

- Industrial hygiene competencies
- Analytical laboratory selection
- Qualitative exposure assessment
- Quantitative exposure assessment
- Exposure data analysis
Industrial Hygiene Competencies

• Level 1: Sampling Technicians
  – NSSGA/MSHA Dust & Noise Workshop graduates

• Level 2: Industrial Hygienists
  – Degreed and non-degreed professionals

• Level 3: Certified Industrial Hygienists
  – CIH, CAIH, ROH, etc

• Resources: Staff, Consultants, Others
Exposure Assessment

- Targeted sampling: Where are the problems?
- Case closing sampling: Is the problem resolved?
- Random sampling: Representative? HEGs?
- Data analysis: Conducted by industrial hygienists
4. Exposure Control Program

• Controls developed based on exposure data

• Hierarchy of controls applied:
  - Substitution/elimination
  - Engineering
  - Administrative
  - Personal protective equipment
Exposure Control Program - Dust

- Water trucks
- No silica in the media
- No dry sweeping
- Respirators
- Surfaced mine roads
- Water sprays
5. Medical Surveillance

- Enrollment based on exposure assessment
- Baseline & periodic medical evaluations
- Emphasis: respiratory & auditory systems
- Clinic selection, test & equipment specification
- Physician & technician qualification
- Data analysis & communication
- Records retention & confidentiality
Respiratory Screening

- PFT
- X-ray
- Work history
- Exposure history
- Physical exam
Auditory Screening

- Audiometric test

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6. Smoking Cessation

- Synergistic relationship between smoking, silicosis & tuberculosis.
- Primary contributor to lung cancer, emphysema & chronic bronchitis, chronic obstructive pulmonary disease (COPD).
- Heavily cardiovascular risk factor.
7. OHP Evaluation

- Need to assure on-going effectiveness
- Periodic (annual?) audits
- Potential metrics:
  - % of targeted jobs that have been assessed
  - % of workforce exposed at 50% of applicable OEL
  - % of exposed workforce covered by 1° controls
  - % of workforce with positive medical tests
  - % of workers with non-occupational disease
  - % of smokers who have permanently quit
Next Steps

• Finalize OHP document
• Obtain necessary approvals
• Develop OHP Kits
• Communicate OHP to member companies
• Develop OHP training series
• Implement