Brainstorm, Problems, Solutions 12/99
Draft -- Not for Circulation

GROUP 1 (OUTSIDE ROOM)

DBP PROBLEMS

Cancer

- Continuing concern with cancer endpoint
- Spectrum of concern (varying levels)
- Nothing new re: endpoint
- High level of uncertainty with dose response
- Uncertainty from alternative treatment, i.e. shift in specification and creation of other DBPs
- Cancer data might under represent the health impact because of other routes of exposure to water
- Variations in exposure in distribution system (special and temporal)
- Uncertainty & incomplete data on range of DBPs and which pose greatest health risk

DPB SOLUTIONS

Cancer

- Need for lower MCLs
- No compelling reason to lower MCL 80/60 ok
- Require lower exposure
- Need for lower MCL to 40/30
- Require reduced peaks
- Need to optimize the system
- No need to change MCL but, should regulate maximums for peaks
- Control DBP system outliers
- Improve reliability of measurements treatment and the system
- Monitor, outliers trigger action plans
- Target sensitive populations for higher level of protection
- Rewards – reduce monitoring where demonstrated reduced DBPs
- Site specific annual average
- Maximize non-regulatory initiative
- Action levels for maximum DBP's
- Trigger communication
- Characterize system specific baseline exposure RE: DBPs so can know if new techniques affect baseline (do no harm)
- Increase number of samples and measurements (i.e. move from quarterly to monthly)
- Regulatory approach for consecutive systems

DBP Problems: Reproductive

- Repro evidence of endpoint is compelling
- Repro evidence is compelling
- Variation in exposure
- Repro data suggests problems
- Multiple routes of exposure

- Need information on:
  -dose response
  -more epi data
- clear hazard ID little data on dose response
- how to ensure universal availability of safe drinking water
  -availability
  -cost
  -comparability

DBP Solutions: Reproductive

- Monthly monitoring, more frequent monitoring to detect peaks
- Communication action plans – trigger
- Better, more complete monitoring better cross sections
- Action levels that trigger more monitoring
- More research and data collection
- MX-MCLG treatment techniques as a surrogate for DBPs
- FACA commitment to Stage 3
- Go for the outliers within and across system or overall
- Improve performance without technology shifts
- Source water protection

MICRO Problems

- Might be risks, but not enough to know how /where uncertainty on the extent
- Too much focus on treatment source water, at the expense of distribution system contamination
- Current physical removal of crypto not enough …inadequate water treatment for microbial
- Inadequate monitoring methods and tools to accurately characterize crypto exposure or microbial.
- Source water contamination is beyond control of utility
- Inactivation may drive new technology (possibly create worse problems)
- Adequacy of barriers for unfiltered systems
- Emerging pathogens got to keep finding them
- Water availability
- Some facilities are not getting appropriate credit for actual filter removal

Micro Solutions

- Inactivation needed
- More focus on distribution systems and regrowth
- Set performance goals (e.g. 4 log -- absolute level) allow any combination of source control, removal and inactivation (provide credits)
- Increase reliability – reduce variability more protection
- Non-traditional water delivery for sensitive population
- Target outliers
- Site specific solutions
- Better monitoring, notification, source water and distribution control
- Develop control approaches tied to different bins -- finished water quality
- Look at non-regulated controls
- Stage 3
- Multi barrier approach

- Clean water for all
- New technologies may handle new pathogens
- Do no harm

GROUP 2 (BIG ROOM)

Non Regulatory
- Increase partnership participation
- Improve public awareness of affect of risk of crypto to general population
- Increased attention to BMPs training, incentives for improvement.
- Incentives for watershed protection at the local level.

Principles
- Recognize this as an ongoing process of phased regulation and commitment to engage
- Avoid major technology shifts without understanding unintended risk consequences
- Interest in reducing potential risks of exposure at low cost
- FACA needs tools to communicate why action is necessary.
- Allow treatment on case by case basis
- Focus on items with high degree of certainty
- Do no harm
- Maximize overall risk reduction at each point along process (source – treatment – distribution)

Problem (Microbial)
- Emerging pathogens
- Extent controlled currently and in proposed regulations

Problem:
- How do we address filtered/unfiltered systems
- How to categorize by source water quality and treatment effectiveness (inactivation, physical removal)

Option:
- Look at treatment requirements under criteria to avoid filtration

Problem: Microbial
- How to identify high risk systems (uniqueness of each system)
- Virus inactivation (how much)
- Certainty about how to characterize risk

Option:
- Identify monitoring that will identify high risk systems
  - indexing
  - individual organism
  - temporal variability
  - frequency/timing
- Look at FS/RL

- Use watershed characteristics to distinguish low from high risk
- Measure crypto (technology improvements)
- Source water (sewage out fall)
- Safe water risk inputs
- Incentives

Problem: Microbial
- How to reduce microbial risk in high risk systems

Option:
- Convential treatment improvements
- Add disinfection
- Watershed protection
- Evaluate consequences and costs of technology choices
- Incentives for local decision making
  - Incentive is monitoring so don't have to treat
  - Safe water protection (involvement of TMDLs)
    - Give logcredit for watershed protection, enhanced existing treatment
- Multiple pathways
  - Role
  - Performance of system
    - Credit for involvement in safewater partnership and or accreditation program and or other ideas for optimization of operations

Problem: Microbial
- Risks in distribution systems
- Cross connections
- Uncovered reservoirs
- Other

Options:
- Address now in part vs. and or other regulatory action
  - TC rule
  - Other

Problem:
- System reliability
- How to identify unreliable /poorly managed systems

Options:
- Performance of system
  - Credit for involvement in safewater partnership and or accreditation program and or other ideas for optimization of operations

Problem: (DBPs)
- Whether stage 1 Rule adequately controls for brominated species

Options:
- Change regulatory endpoint to include individual species
  - MCL for individual species
  - Technology/cost implications

Problem:
- Risks not well defined
- A concern for risk

Option:
- More research to understand risk
- Potential for reducing risk and costs

Problem (DBPs)
- Concern about repro and developmental health affects
- Not much new information on cancer
- Equity in distribution systems across and with in plants
- Concern that change in technology may cause increased risk (unknowns)
- Need to address outliers
  - Discuss magnitude of problem
  - Some populations getting more exposure
- How to identify high risk waters (TOL/Bromide)

Options:
- Frequency and location of monitoring
- Site specific annual averaging
- Define and measure improvement
  - Maxes
  - Caps
  - Sites specific
  - Lower averages vs. maxes 80/60 40/30
  - Location vs. temporal maxes
- Identify what technologies are available to address problems and at what cost (look for least cost options)
- Identify what to monitor for
  - THMs
  - HAAs
  - Brominated species
- Keep 80/60s/caps and include caps for brominated sp

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