Welcome to the
Model Aquatic Health Code Network Webinar

Keep Up with the Model Aquatic Health Code:
Featured Presenter: Michael Beach, PhD

Tuesday, July 24, 2018

Please use your computer speakers to listen to today’s presentation

Questions may be submitted via the chat box

We will begin at 1:00 PM Eastern

Thank you for your interest and attendance!
Join the MAHC Network!

- MAHC Implementation Resources
- Webinar Updates
- Archived Webinars

Email MAHCnet@naccho.org

Stay tuned for more ways to network!
Featured Presenter

Dr. Michael J. Beach

Associate Director for Healthy Water
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Deputy Director
Division of Foodborne, Waterborne, and Environmental Diseases
Centers for Disease Control and Prevention
Keep Up with the Model Aquatic Health Code: The 2018 MAHC 3rd Edition is Out!

Model Aquatic Health Code

NACCHO MAHC Network Webinar
Michael J. Beach, PhD
Centers for Disease Control and Prevention
July 24, 2018
Outline

- MAHC introduction
- How did we get here?
  The CMAHC
- What changed?
- Next steps
- Resources
MAHC Vision

- Healthy and safe aquatic experiences for everyone

Model Aquatic Health Code
CDC Vision translation

- Public pools/waterparks/spas in every community
  - Well operated and they remain open on inspection
- Everyone knows how to swim
- Everyone enjoys the health, social, and family benefits
- Healthy and safe aquatic experiences for everyone
  - Improving swimmer ability, knowledge, and hygiene and improved pool operation leads to:
    - Reducing drowning
    - Reducing chemical and other injuries
    - Limiting disease outbreaks
- The MAHC and CMAHC can achieve the long range vision using incremental change to move aquatics towards the vision
What is the Model Aquatic Health Code (MAHC)?

- Based on science and best practices
  - Code / Annex (data and rationale)
- Resource for creating or updating pool codes
- Goals
  - Reduce risk for outbreaks, drowning, and injury
  - Outline uniform safety and operation standards
- Review and update cycle
  - Advised by the Council for the Model Aquatic Health Code (CMAHC)
  - Meets in October every 3 years to vote on change requests going to CDC
- Endorsed by NEHA, NACCHO, CSTE; awarded the 2017 Kelly Ogle Safety Award by the World Waterpark Association
MAHC Layout and Contents

- Code Language
  - 1.0 Preface
  - 2.0 User Guide
  - 3.0 Glossary of Acronyms, Initialisms, and Terms
  - 4.0 Aquatic Facility Design Standards and Construction
  - 5.0 Facility Operation and Maintenance
  - 6.0 Policies and Management
  - 7.0 Appendices
  - 8.0 References

- Chapter 4 primarily new construction or substantially renovated facilities or venues
MAHC Layout and Contents

- Annex language
  - Scientific rationale for Code language
  - Suggested best practices
  - Regularly updated
  - Superscript “A” in Code means Annex text available
- Used as resource across country
How did we get here? The CMAHC
The Council for the Model Aquatic Health Code (CMAHC) Operational Outline for Proposing MAHC Changes

Input

Change Request

Technical Review & Discussion

CMAHC Triennial Conference Presentations

Membership Voting

Board of Directors

CDC

Standing Committees

Ad Hoc Committees

7 Technical Support Committees

CMAHC???
The aquatics equivalent of the Conference for Food Protection that works on the FDA Food Code
2017 CMAHC Conference: Outcomes

- 2017 CMAHC Conference completed with >100 in-person attendees
  - 179 Change Requests submitted
    - Reviewed by Technical Review Committee with assistance by seven Technical Support Committees
    - 68% (122/179) of CRs passed and sent to CDC
- Recommendations sent to CDC, discussed, MAHC edited, and cleared
  - 2018 Edition released July 18, 2018
  - See track changes version of MAHC to see exact changes in context
What changed?
General Layout

- Code: 183 pages (vs. 289)
- Annex: 256 pages (vs. 371)
- All references: all cited by number in Chapter 8 vs. being in footnotes
- Section 3.3: updated to include full references, names, and years of referenced codes, standards, and laws
Disinfection and Water Quality: *Legionella* Contamination

- (NEW) Guidance for remediation and testing of aquatic venues suspected of and/or contaminated with *Legionella*
  - Adapted from established CDC guidance at: https://www.cdc.gov/legionella/downloads/hot-tub-disinfection.pdf
Disinfection and Water Quality: Float Tanks (CMAHC Ad Hoc Committee)

- (New) Guidance for floatation tank regulation
  - Written as stand alone unit:
    - Plan submittal
    - Materials
    - Equipment standards
    - Electrical systems and components
    - Circulation system
    - Disinfection
    - Ventilation
Disinfection and Water Quality: Float Tanks (CMAHC Ad Hoc Committee)

- (NEW) Guidance for flotation tank regulation
  - Operating permits
  - Electrical, plumbing, disinfection, and ventilation systems
  - Cleaning
  - Fecal/vomit/blood contamination response
Disinfection and Water Quality: Disinfectant Feeders (CMAHC Workgroup)

- (New) Performance criteria for disinfectant feeder sizing
- Feeders shall be designed to maintain the minimum free chlorine concentrations specified in the MAHC at all times.
- Sizing based on the following examples of chlorine-demand factors:
  - Aquatic venue - surface area, volume, use/space (e.g., agitated water), type (e.g., spa)
  - Indoor vs. outdoor
  - Anticipated maximum number of bathers per day
  - Cyanuric acid/stabilizer used
Disinfection and Water Quality: Chemical Testing

- (New) Numerous pool chemicals (stabilizers, pool-grade salt, clarifiers, flocculants, defoamers, pH adjustment chemicals) must meet NSF/ANSI Standard 50 or 60 and/or EPA FIFRA registration
- (More flexible) Calcium hardness levels raised to 2500ppm
- (More flexible) Lowers secondary disinfection performance to a minimum 2-log reduction for all venues except interactive water play aquatic venues
Lifeguard and Bather Supervision: Other Changes

- (New) Requires lifeguards if alcohol served at aquatic venue
- (New) Requires lifeguard personal protective equipment to be on person or rescue tube
- (Strengthened) Clarifies glare assessment for lifeguard positions
  - “glare conditions are assessed from each lifeguard position as identified in the Zone of Patron Surveillance to determine if the AQUATIC VENUE bottom and objects in the POOL are clearly visible to QUALIFIED LIFEGUARD staff throughout operating hours”
Risk Management and Safety: Noise Reduction (CMAHC Ad Hoc Committee)

- (New) Adds acoustic criteria to natatorium design to reduce noise levels
  - Uses established specific design criteria and materials to reduce noise in indoor aquatic facilities (already used in other types of buildings)
  - Requires sound absorbing materials be used to keep sound absorption coefficient to specific level
  - New construction/substantial renovation
Risk Management and Safety: Chemical Release Injuries

- (Strengthened) Additional requirements to prevent chemical release events by improving chemical control and feed system interlocks and no/low flow deactivation
  - Requirements to ensure chemical control and feed systems shut off when recirculation systems shuts down.
  - Challenge testing of system required
  - Mandatory bather evacuation (system shutdown, backwashing)
    - Bathers cannot re-enter until >5 minutes after system turned on
  - Visual alarm required if feeder is disabled through the electrical interlock – for new and replacement installations
Risk Management and Safety: Other Changes

▪ (New) Adds certification for pool lifts
  – “All POOL lifts shall be CERTIFIED, LISTED, AND LABELED in accordance with UL 60335-2-1000, and be installed and used in accordance with the manufacturer’s installation instructions and ICC/ANSI A117.1”

▪ (More flexible) Clarifies handhold wording for lazy rivers
  – Example “Bathers In or On Tubes Exception: Handholds shall not be required where BATHERS are required to be in or on a tube while in the LAZY RIVER”

▪ (More flexible) More flexible requirements for closure and reopening
Model Aquatic Health Code

Next steps
Current MAHC Adoption

Help us update the map!
Tell us how you use the MAHC
E-mail MAHC@cdc.gov

4 full adoptions, 4 partial adoptions by 4 states, 1 Canadian province, 3 U.S.G agencies,
At least 18 states/counties in the process of, or considering, adoption.
Ongoing CDC Work

- Posting MAHC check lists for routine use
- Mini-MAHCs
  - Summary of code language to address specific problems
    - *Cryptosporidium* reduction (in clearance)
    - Hygiene-diaper changing (in process)
    - Chemical gassing/exposure events (in process)
- Check out
  - MAHC Aquatic Inspector iPad App
    (https://www.cdc.gov/mahc/app.html)
    - Search for “Aquatic Inspector” from App Store on iPad
  - MAHC inspector training (in collaboration with NEHA, coming soon)
Ongoing CMAHC Work

- CMAHC Committees in place
  - Chlorine stabilizers
  - Indoor aquatic facility ventilation design & air quality
  - Coming soon: splashpad re-design
  - Other issues: shell design

- Standing Committees in place
  - Annex revision
  - CMAHC/APSP Code Consistency
Get Prepared

- Join CMAHC and be part of ongoing work to improve aquatics
- CMAHC Change Requests for 2020 conference now accepted
- Start working with your professional group on what is needed
  - 3-year cycle gives more time for thoughtful creation, writing, and vetting of new Change Requests (should translate to higher passage rates)
- Get involved in using the MAHC and/or the adoption process whether you are public health or aquatics sector
Resources

The Model Aquatic Health Code (MAHC): An All-inclusive Model Public Swimming Pool and Spa Code

The MAHC-based model inspection form and cheat sheet are now available!

Information For Specific Groups

- Potential MAHC Adopters
- Public

Model Aquatic Health Code

www.cdc.gov/mahc

Search the MAHC

www.cmahc.org/search-the-mahc.php
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- Carl Nylander: Technical Review Committee Co-Chair
- Amanda Tarrier: Technical Review Committee Co-Chair
- Technical Review Committee
- CMAHC Board of Directors
- CMAHC Ad-Hoc & Technical Committee(s)
Contact Us

- Questions about the Model Aquatic Health Code?
  
  ► Email MAHC@cdc.gov
For more information, contact CDC 1-800-CDC-INF0 (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Next CMAHC Conference:
October 2020