

## Public Comments and Responses for Fecal-Vomit-Blood Contamination Response Module Code and Annex after First 60-day Review Period

Informational Copy: NOT Open for Public Comment

### 1. Alan Picard, Univ. of Alaska Anchorage (Anchorage, Alaska)

- *Comment:* I have no issue with the guidelines except wanting clarification on the Blood and Vomit part of the proposed guidelines. We currently are not allowed to have swimmers in the pool with open wounds, but have always used the idea that a water proof band-aid covering would be sufficient coverage. But since a band-aid gets bloody It appears with the guidelines as proposed any amount of blood is sufficient to requiring pool closure. Is that the intent? The same on the vomit, if a swimmer has a hard workout and or swallows water causing them to vomit even a small amount does this require a closure of the pool? We already follow CDC guidelines on fecal matter so it would only require a small tweak of our procedures to meet the new MAHC guidelines, but clarification on the others would be appreciated.

*Changes to Module/Annex:*

6.5.3.4. There is little if any public health hazard from a well maintained pool being contaminated with blood since bloodborne pathogens do not survive well under extreme dilution or in 1-3 ppm free chlorine. This is also discussed in the MAHC Annex. The risk from swimming with an open wound is to the swimmer with the wound as there is increased potential for pathogens entering the open wound---no open wounds should be allowed in the aquatic venue unless they are covered with a waterproof, occlusive bandage. The section has been altered to make closure due to blood contamination voluntary (e.g., to satisfy swimmer concerns) as the MAHC intended.

6.5.3.3 Vomit has the potential to contain pathogens causing GI illness such as norovirus so vomit contamination should be considered as potentially infectious. The most likely risk would be from norovirus. De-contamination would be similar to a formed fecal accident. It is difficult for a code to differentiate between the causes of vomiting (reflux vs. infections) so the MAHC has to cover the potential for pathogen exposure. Vomiting of a little water is unlikely to be observed while vomiting up the contents of a meal as worded in the MAHC (e.g., whole stomach discharge of vomit in 6.4.1.3.4.1) is likely to be observed and will require remediation. No change to section.

### 2. David Hornsby, Gwinnett County Environmental Health (GA)

- *Comment:* 6.5.3.2. -- Another option for checking high chlorine levels are the commercially available DPD titration powder test kits. -- Annex Section 6.5.3.2

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changed to: Operators should use chlorine test strips that can measure free available chlorine in a range that includes 20 mg/L, or make dilutions using chlorine-free water for use in a standard DPD test kit, or use a DPD titration powder test kit.

*Changes to Module/Annex:* Agreed. Changes made in document.

### 3. Ed D'Alessio, New York State Department of Health

- *Comment:* 6.5.3.2.1. -- Any operator that uses a chlorine disinfectant that includes stabilizer (cyanuric acid, dichlor, or trichlor) would not likely have non-stabilized chlorine to raise the residual to 40 ppm. If trichlor or dichlor is used to raise the free chlorine to 40 ppm, a high level of cyanuric acid would remain in the pool after the disinfection process. Dilution of the pool water with fresh water is the only way to reduce the level of cyanuric acid. Storage of non-stabilized chlorine "in case of an incident" is not an option, since it would degrade over time, render it less effective, and waste money. Therefore, a non-stabilized chlorine compound would probably have to be purchased after the incident occurred. -- change to "In pool water that contains chlorine stabilizer such as cyanuric acid, the pH shall be lowered to 6.5 and the free chlorine residual shall be raised to 40 mg/L using a non-stabilized chlorine product and maintained for at least 30 hours or an equivalent CT value as shown in the Annex.

*Changes in Module/Annex:* Annex Section 6.5.3.2 had the following added to the end of the section: "It is important that the operator use a non-stabilized chlorine product when raising the free chlorine residual to 40 mg/L. If a stabilized product such as dichlor or trichlor were used, a high level of cyanuric acid would remain in the pool after the hyperchlorination process. The cyanuric acid level in pool water can only be lowered by dilution of pool water with make-up water. Since chlorine products degrade over time, it is not recommended that non-stabilized chlorine products be stored in case of a fecal incident. The operator could either purchase a non-stabilized product at a pool supply store or buy unscented household bleach (sodium hypochlorite) product that has a label indicating it is EPA-approved for use as a drinking water disinfectant.

Along with the pH level and free chlorine residual, the cyanuric acid level should be checked and adjusted if necessary prior to reopening the pool."

Agreed; changes made in document.

### 4. John Linn, Busch Entertainment Corporation

- *Comment:* There is a need to address procedures for water through water features during disinfection. Concern about contaminated water in piping and water features such as dump buckets if water recirculation is not maintained, but also concerned

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about recirculating 20mg/l water through slides and other water-aerosolizing features for 13 hours. Add wording to the appendix which clarifies what can/should be done to ensure the required chlorine residual is maintained in all water during the specified time frame. Also probably should add a clarification to the appendix that the slide and other water feature surfaces are to be disinfected per 6.5.4.4, though this may not be practical. Probably needs some discussion.

*Changes to Module/Annex:* Agreed, discussion is warranted. Currently there are no standardized protocols on cleaning these aquatic features. Added annex language stating water features shall be well drained and disinfected per manufactures instructions’.

## 5. International Association of Amusement Parks and Attractions (IAAPA)

- *Comment:* Definitions,
  - “Aquatic Venue”: This definition specifically includes “fountains,” meaning the Scope could be stretched to include for a fountain that is designed and purposed solely for decorative purposes. In order to avoid any confusion, exclusionary language should be provided for decorative fountains.

*Comment:* Current definition of Aquatic Venues is “water intended for recreational or therapeutic purpose.” Decorative fountains do not meet this definition. The word “fountain” is no longer included in the definition.

- “High Risk”: The term “risk” is not recommended in this application, indicating that some level of risk may be acceptable. Suggest deleting this definition, or at least coming up with a term other than “risk.”

*Comment:* Definition has already been changed on CDC website to increased risk.

- “Pool”: Replace the word “impounded / standing” with “captured.”

*Comment:* Definition was changed to “captured.”

- “Water Feature”: This is a fairly broad definition that includes for pools. If it was not intended to be so broad, perhaps some examples would make it clearer.

*Comment:* Agreed. Term is actually now “Aquatic Features” and includes spray features and waterslides as examples in definition. Aquatic Feature means an individual component within an aquatic venue. Examples

include mushrooms, slides, buckets, spray guns/nozzles, and other play features.

*Changes to Module/Annex:* Changes have been made to the definitions posted on CDC website.

- *Comment:* ANNEX 6.5.3.2, Second Paragraph -- “*The inactivation time should only be started once the chlorine level is reached in the pool.*” -- It is unclear what is intended by this statement. Does the chlorine level have to reach a particular level before the inactivation time can be started? Or is it started when you take your first measurement? Perhaps it could be made clearer by replacing the word “reached” with “measured.”

*Changes to Module/Annex:* Agreed. Language changed in document.

- *Comment:* 6.3.3.4.1: Suggest that only designated incident responders are required to be trained.

*Changes to Module/Annex:* Agreed. Changed to “at least one incident responder is available at all times pools are open for operation.”

- *Comment:* 6.3.3.4.1: Please provide a definition of “Universal Precautions

*Changes to Module/Annex:* MAHC changed to delete reference to this term. MAHC refers readers to OSHA bloodborne pathogen standard.

- *Comment:* 6.5.1.3: Suggest removal of this Section. If equipment and supplies are not readily available, it only hinders the operator in a longer downtime, and does not specifically address a safety or regulatory need.

*Changes to Module/Annex:* Disagree, no change. Operators should verify weekly with their other routine activities to ensure proper equipment and supplies are readily available. If items are not available, the proper procedure cannot be followed and may lead to improper procedures or equipment being used which would place employee and bather safety at risk.

- *Comment:* 6.5.3.2.1: Suggest that this Section be stricken from the Code until further research can establish a more robust set of requirements for pools that may utilize chlorine stabilizers. If the requirement must stay, suggest softer language (i.e. as is currently drafted in the CDC Guidelines for response to fecal release). The inactivation time should only be started once testing indicates that the intended free chlorine level (20 ppm or other free chlorine concentration based on inactivation time in table above) has been is reached in the pool.

*Changes to Module/Annex:* Agreed. 6.5.3.2.1. has been moved to the annex with softer language. The additional wording suggested has also been included in the language.

## 6. Richard Falk, pool owner.

- *Comment:* 6.5.3.1.1 -- A new section should be added "Pools containing chlorine stabilizers 6.5.3.1.1" and also 6.5.3.3.1. Also, section 6.5.3.2.1 is too generic and will significantly overdose with chlorine if the CYA level is not 50 ppm. There is already a section 6.5.3.2.1 that gives a procedure for decontamination for a diarrheal-stool when CYA is used, but there is no such counterpart for a formed-stool and it makes no sense to contaminate as strongly for the formed-stool. One can calculate the equivalent FC required for a given CYA level. I suggest a protocol using the FC as a percentage of CYA level (or, for more accuracy, a chart of FC vs. CYA levels). -- Suggested wording change: 6.5.3.1 delete the sentence "However, at this time there is no standardized protocol to compensate for chlorine stabilizers" though you can keep the subsequent portion "[At this time,] there is no data determining how the inactivation of Giardia is affected by chlorine stabilizers under pool conditions."

*Changes to Module/Annex:* Agree that there is no standardized protocol, but disagree on the proposed language change. Moved discussion to annex.

- *Comment:* Add/change the following two sections:
  1. Formed-stool (pools containing chlorine stabilizers) 6.5.3.1.1 In pool water that contains chlorine stabilizer (i.e. cyanuric acid), lower the pH to 7.0 if the stabilizer is 30 ppm or to 6.5 if the stabilizer is higher than 30 ppm and then raise the FC level to be 70% of the CYA level and maintained for at least 25 minutes.
  2. Diarrheal-stool (pools containing chlorine stabilizers) 6.5.3.2.1 In pool water that contains chlorine stabilizer (i.e. cyanuric acid), lower the pH to 6.5 and then raise the FC level to be 95% of the CYA level and maintained for at least 30 hours.

3. (as noted in the Basis for Comments section, I believe Crypto should be handled by means other than high chlorine doses; I believe chlorine dioxide from sodium chlorite overnight would be the most practical and effective; long-term, microfiltration would limit the number of days the parasite could spread).

*Changes to Module/Annex:* This protocol needs to be further evaluated and data collected before implementing wording.

Regarding Point #3: Agreed, but no language change. Chlorine dioxide has the potential to be an alternative but has not yet been approved by EPA for this use and can be hazardous unless appropriate safety protocols are included. CDC will evaluate further recommendations once more data are available. At this point, requiring micro- or ultra-filtration could be cost prohibitive and it is unclear how this would be required and implemented.

- *Comment:* Annex 6.5.3.2 – don't suggest using test strips to measure high chlorine levels. The FAS-DPD chlorine test can easily measure up to 50 ppm FC, though one should use a small sample size to save on reagent when measuring high shock levels (i.e. use a 5 ml sample size so that one drop equals 1 ppm FC).

*Changes to Module/Annex:* This section has been reworded to offer a solution in preferred order of use, however test strips are still included as an option, although not the best. The food service industry uses test strips routinely.