Best Practice Guide

Standard for Aquatic Facility Environments (SAFE-D)

National Environmental Health Association

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Standard for Aquatic Facility Environments (SAFE-D) Background

Leaders and researchers in environmental health, as well as the public, experience challenges in gathering, comparing, and using information on aquatic facility inspections. There are over 3,000 environmental and public health agencies across the United States, and each agency collects and manages aquatic information in unique processes and files. This variety of processes leads to challenges in analyzing the data collected by each agency.

To address the need for standardizing data across agencies, the Centers for Disease Control and Prevention (CDC) and the National Environmental Health Association (NEHA) partnered to develop a data standard for aquatic facility inspection information. This project was supported by CDC cooperative agreement OT18-1802 Strengthening Public Health Systems and Services through National Partnerships to Improve and Protect the Nation's Health.

To develop the data standard, NEHA gathered aquatic facility inspection data from jurisdictions in four states and reformatted the data into useful datasets. The process took one year to complete. Prior to the data standard, each local government agency used different terms to express the same values and inspection fields for aquatic facility data. This led to thousands of uniquely formatted spreadsheets and datasets, which were challenging to analyze at a state or national level. In addition, most inspection information was not “open data,” which required research teams to request inspection information from hundreds of local environmental and public health agencies and then “scrape” that information from non-comma-separated value (CSV) files. Data standardization led to a better understanding of the current landscape of aquatic facility inspection data and demonstrated that a data standard could help everyone interested in aquatic facility safety access and use inspection information efficiently.

Standard for Aquatic Facility Environments (SAFE-D)

The Standard for Aquatic Facility Environments (SAFE-D) is a model which focuses on key facility and violation data identified in aquatic facility inspection forms from state and local jurisdictions. SAFE-D is the result of two years of work building a uniform format for publishing aquatic facility inspection information across jurisdictions with clarity and consistency, while being adaptable to any change in internal technology or practices. The standard is designed to be flexible enough to accommodate diversity in aquatic facility inspection systems while publishing useful facility and venue inspection information. SAFE-D’s design is based on the critical fields within the Model Aquatic Health Code (MAHC) and an extensive ecosystem scan of over 1,000 environmental health agency inspections. The MAHC was developed by a stakeholder group of over 400 aquatic health experts from around the United States through leadership from the CDC. SAFE-D reflects the critical violations within the MAHC’s aquatic facility inspection form and the inspection priorities of the stakeholders. Elements of the MAHC have been adopted by aquatic facility inspectors across the United States, and therefore the MAHC was a useful resource in the development of the SAFE-D model.

The SAFE-D model is a necessary tool to accurately share and compare aquatic facility inspection data from numerous agencies. With the different types of inspection forms and spreadsheets used to

collect and transfer data between agencies, it is imperative that a standard be available to allow jurisdictions to compare and share valuable aquatic facility data. It is an uphill climb to improve aquatic regulatory programs within agencies when most of the inspection data is dissimilar to each other. In the past, comparing aquatic facility data from multiple agencies was excessively cumbersome, which likely took up a substantial amount of time and manpower. The SAFE-D model answers the call for sharing standardized aquatic inspection data. The work has already been developed and tested with the jurisdictions from four states as demonstration sites. It is up to local health agencies to take advantage of the benefits of SAFE-D and begin standardizing data using this model. Individual agencies can choose how they want to publicly share their data, but the SAFE-D model removes barriers and empowers agencies to share data amongst themselves as well as with state and national organizations. Analysis of this shared data can help jurisdictions identify trends, address challenges, develop resources to meet workforce needs, and improve aquatic programs.

So, what else can be done with standardized data of aquatic facility inspections using the SAFE-D model? This data can be made publicly available to people using aquatic facilities. Like food inspection data, aquatic facility data can also be shared on public platforms to provide transparency to the communities served and demonstrate that these locations are being regulated. The public should be empowered to make informed decisions on whether to visit a particular aquatic facility. Another benefit of using this model is the ability to share uniform data with decision makers and funders. Gaps, successes, and opportunities identified by analyzing aquatic data can be presented to boards of health, federal partners, and other decision makers to request funding to improve state and local agency aquatic programs. This is an important step in building agency aquatic programs through focused initiatives, increased workforce, and any other proposed project.

Understanding aquatic facility data helps local health jurisdictions improve their aquatic programs and bolster community health and safety. By standardizing aquatic inspection data, SAFE-D aims to provide value to the local, state, and national organizations responsible for sharing and analyzing these data.

Model Aquatic Health Code (MAHC)

CDC's MAHC is a set of guidelines to prevent injury and illness at public (non-backyard) aquatic venues, such as pools, hot tubs, and water playgrounds. These guidelines bring together the latest science and best practices to help jurisdictions save time and resources when they develop and update pool codes. These codes outline the specific rules that designers, builders, and managers of public aquatic venues must follow to maximize the fun and the health benefits of water-based activities."[1]

[1] https://www.cdc.gov/mahc/index.html

Best Practices

Before publishing a set of inspection results, it's important for state and local health agencies to have a plan for keeping their data up to date. Open Data quickly becomes stale if it is not kept up to date. This is particularly important when working with public health data so as to keep communities healthy and safe.

Below is a list of best practices for keeping datasets up to date. It is not designed to be exhaustive.

- Work with data providers to make sure that the technical, organizational, and legal mechanisms are in place to have regular access to the data. This may mean working with a vendor to set up automatic data exports, working with other teams within the organization to ensure there is continuous access to data beyond the scope of the initial implementation, and verifying with the legal team that there is an ability to publish or share data.
- Make sure to include your internal information technology (IT) professional to provide any technical support on the mechanisms.
- Do not rely on manual processes to transform data. Manually transforming data using spreadsheet tools can be an effective way to mockup data into the standard, but as early as possible, consider building an automated Extract, Transform, and Load (ETL) process to generate data files programmatically. That process can then be run automatically to generate data automatically.
- The organization should establish the frequency dates for data to be published. Moreover, the organization should adhere to their established publication dates and communicate if there are issues related to a missed/problematic publication date.
- Create and publicly document mechanisms by which users of the data can provide feedback about any issues they find within the datasets.

The more investment into making this process regular, automatic, and monitored, the easier it will be to maintain in the long term.

Other Standards Referenced

The SAFE-D specification references other data and measurement standards. This is done to leverage the work of respected standards bodies such as the American National Standards Institute (ANSI) and International Organization for Standardization (ISO) to ensure consistency in how values are measured and recorded from one inspecting agency to the next. Examples of standards utilized include:

- ISO 8601 Date Time: A broadly adopted standard format for how dates and times are recorded in data files, in order to ensure consistent processing from one data file to the next.
- ISO 7393-2:2017: A commonly used standard for how to measure free chlorine and bromine in pool water and other water sources.
- ISO 10523:2008: A similar standard for how to measure pH values in pool water and other water sources.
- ANSI/APSP-11 2012: A standard for measuring other pool chemical values like alkalinity, calcium hardness, etc.
- INCITS 38:2009: A geographic data standard for the commonly used two letter state codes like “WA” and “GA.”

Inspections Feed

The inspections feed provides detailed information about the inspections of aquatic facilities and venues. The feed can be divided into three sections:

- Information about the facility, including identifier, name, and address information.
- Information about the aquatic venue, including venue type and risk categorization.
- The details of the inspection, including the final score, any critical violations that were recorded, and other notes. Only critical violations that would cause the venue to fail its inspection are recorded. Others may be included in the notes field.

The records in this file are presented at the inspection level and will be repeated for each inspection, recorded at the time of the inspection. This can also be used to track changes in the venue or facility over time. The Inspections CSV file includes three sets of fields:

Facility Information

The following fields represent a facility that contains one or more aquatic venues. A facility is a location such as an apartment complex, hotel, waterpark, public pool complex, amusement venue, or public park:

- Facility ID (optional): The internal identifier, used by the agency supplying the data, for this facility. This can be its license ID, or any other unique identifier.
- Facility Name (required): The provided name for the facility.
- Facility Address (required): The physical street address of the facility.
- Facility Address 2 (optional): If provided, the second line of the street address for the facility.
- Facility City (required): The city that the facility resides within.
- Facility State (required): The state that the facility resides within, following the ANSI two-letter state abbreviations from INCITS 38:2009.
- Facility Postal Code (required): The USPS Zip Code, represented as a 5-digit Zip Code, or a ZIP+4 if available.
- Facility County (required): The full name of the county in which the facility resides.
- Facility Latitude (optional): The decimal latitude for the facility (may be provided if the location of the facility has been geocoded to a latitude and longitude).
- Facility Longitude (optional): The decimal longitude for the facility (may be provided if the location of the facility has been geocoded to a latitude and longitude).

Venue Information

The following fields represent the venue (i.e., the aquatic attraction being inspected):

- Venue Type (required): designated type for the venue, which must be one of the following:
  - Pool
  - Hot Tub / Spa
  - Wading Pool
  - Interactive Water Play
  - Venue Flotation Tank
  - Other (i.e., lazy river, water slides and landing pools)
- Venue Risk Type (optional): risk type of the venue, using a numeric notation of one through three.

Inspection Results

The bulk of the fields in the feed are those related to the inspection itself. This section includes the details of when and why the venue was inspected, if available, the outcome of the inspection (such as score or pass/fail), and details of any critical violations encountered during the inspection.

Inspection Details

- Inspection Date (required): The date and time at which the inspection occurred. If possible, include the time of the inspection, but it is acceptable to provide only a date. This value must be encoded as an ISO 8601 DateTime.
- Inspection End (optional): The date and time at which the inspection ended, if recorded. This value must be encoded as an ISO 8601 DateTime.
- Inspection Score (optional): If the reporting agency records a score – numeric, letter grade, etc. – for the inspection, it should be provided.
- Inspection Purpose (required): the reason for this inspection must be mapped to one of the following values:
  - Routine
  - Complaint
  - Follow-up
  - Illness
  - Incident
  - Other
- Inspection Jurisdiction (optional): If multiple jurisdictions are reporting/sharing their inspection data within this feed, include this field to differentiate them. This value must also be present in the Jurisdiction Information Feed, if provided.
- Inspection Passed (required): whether the venue passed or failed its inspection (i.e., “True” if the inspection was passed).

Test Values

The following are values for chemical tests conducted as part of an inspection. As pools generally use either chlorine or bromine as a disinfectant, the value for the chemical not used may be left blank.

- Free Chlorine (required): free chlorine level, measured using ISO 7393-2:2017 if possible. If bromine is used instead of chlorine as a disinfectant, do not provide a value here.
- Free Bromine (required): free bromine level, measured using ISO 7393-2:2017 if possible. If chlorine is used instead of bromine as a disinfectant, do not provide a value here.
- pH Value (required): pH level, measured using ISO 10523:2008 if possible.
- Total Alkalinity (optional): measured in parts per million, measured using ANSI/APSP-11 2012 if possible.
- Calcium Hardness (optional): measured in parts per million, measured using ANSI/APSP-11 2012 if possible.
- Cyanuric Acid (optional): measured in parts per million, measured using ANSI/APSP-11 2012 if possible.
- Water Temperature (optional): measured in degrees Fahrenheit.

Required Safety Checks

The following records represent checks that **must be** passed during every inspection, in the form of Boolean (“true” or “false”) values:

- Enclosure (required): all barriers (e.g., fencing, walls, gates, and doors) are in good repair.
- Main Drain Visible (required): water is clear, and the main drain is visible.
- Safety Equipment (required): appropriate safety equipment is present and in good repair (includes but is not limited to a life ring and/or rope, a shepherd's hook, or an operable pool phone).
- Disinfectant Level (required): proper disinfectant levels are maintained.
- pH Balance (required): pH value is between 7.2 and 7.8.
- No Imminent Health Hazards (required): no other health hazards that would warrant a closure of the venue.

These are checks for imminent health hazards, which are violations of critical rules that would cause the venue to fail its inspection and be closed. Failure (a value of “false”) for any of these checks **must** constitute a failure of the inspection and a closure of the venue. All fields must be included.

Since all checks are required for a venue to have passed its inspection, a passing inspection (value of “True” for “Inspection Passed”) means all these checks were also passed. However, since a single failed check will cause an inspection to be failed, not all of the checks are necessary in case of failure (value of “False” for “Inspection Passed”).

For example:

- If the inspection was passed, all six of the above fields must also be "True."
- If the inspection failed because the main drain was not visible, that field would be marked "False" to note that it was a failed check, but other fields could be left empty to note that they were not checked.

Optional Checks

The following Boolean records represent additional checks that may be made during an inspection for safety or public health:

- Access Controls (optional): all self-closing/self-latching gates or doors operational.
- Electrical Protections (optional): protected overhead electrical wires/GFCI electrical receptacles.
- Signs Present (optional): "depth" and "no diving" markers and stair stripes are in good repair and visible.
- Drain Gate Secure (optional): main drain grate secured in place and in good repair.
- Supervision (optional): adequate supervision of the aquatic facility is provided.
- Recirculation Pump (optional): recirculation pump is approved, in good repair, and in operating condition.
- Filter (optional): filter is approved, in good repair, and in operating condition.
- No Unauthorized Alterations (optional): no substantial unauthorized alterations or equipment replacement.

If these checks are performed by a given jurisdiction, the given field should be included in the data file. If for any reason a given agency does not verify or record a check for an "optional" field, that field should not be included. Unlike the required checks, failure (report of "False") for any of these checks does not necessarily constitute a failure of the inspection and a closure of the venue.

Inspection Notes

As a free-text field, the Inspection Notes field must be checked to make sure it is not inappropriately divulging any personally identifiable information about individuals involved with the venue or facility, such as names, email addresses, or phone numbers. These values can be redacted by replacing them with other text or removed entirely. If necessary, reporting agencies may need to omit optional fields like the Inspection Notes field if it is determined they cannot reliably redact them.

Included Fields

- Inspection Notes (recommended/optional): Use this to share any other notes provided by the inspector, such as the need for training or poor maintenance of an aquatic facility. This field may be used to explain adverse findings observed during an inspection. This field is beneficial when providing detailed documentation of a complaint or outbreak investigation.

Detailed Inspections Schema

Below is a detailed technical schema for the inspections data feed, including datatypes and other details. The file should be named in such a way that it is clear the file represents inspection information.

Field Name	Description	Data Type	Required?	Formatting Details
Facility ID	Internal identifier for this facility, license ID, etc.	Text	Optional	
Facility Name	Name of Facility	Text	Required	
Facility Address	Facility street address line one	Text	Required	Please follow the standard USPS address formatting rules, including street type abbreviations
Facility Address 2	Facility street address line two	Text	Optional	Optional if not recorded
Facility City	Facility city	Text	Required	
Facility State	Facility state abbreviation	Text	Required	ANSI two-letter state abbreviations from INCITS 38:2009
Facility Postal Code	USPS Zip code	Text	Required	ZIP+4 if available, otherwise seven-digit Zip code
Facility County	County name	Text	Required	
Facility Latitude	Geocoded or recorrect latitude of the facility	Number	Optional	The geocoded decimal latitude for the facility
Facility Longitude	Geocoded or recorrect longitude of facility	Number	Optional	The geocoded decimal longitude for the facility
Venue Type	The venue type (pool, hot tub, etc.)	Enumeration	Required	Allowed values: Pool, Hot Tub/Spa, Wading Pool, Interactive Water Play Venue, Flotation Tank, Other
Venue Risk Type	The risk type of the venue	Number	Optional	Use standard 1-3 representation for risk types.
Inspection Date	The date and time at which the inspection occurred. If possible, include the time of the	DateTime	Required	Use ISO8601-compliant dates Ex: Date: MM-DD-YYYY Time:12-hr clock

Field Name	Description	Data Type	Required?	Formatting Details
	inspection, but it is acceptable to provide only a date.			(hh)(mm)(am/pm)
Inspection End	The date and time at which the inspection ended, if recorded	DateTime	Optional	Use ISO8601-compliant dates Ex: Date: MM-DD-YYYY Time:12-hr clock (hh)(mm)(am/pm)
Inspection Score	The final score for this inspection	Text	Optional	Any score format is allowed, but the scoring parameters should be detailed in the metadata CSV
Inspection Purpose	The purpose of this inspection	Enumeration	Required	Allowed Values: Routine, Complaint, Follow-up, Illness, Incident, Other
Inspection Jurisdiction	If multiple jurisdictions are represented within a feed, include this field to differentiate them	Text	Optional	
Inspection Passed	The final outcome of the inspection – whether the venue was closed or open	Boolean	Required	"True" means the venue remained open, "False" means it was closed
Free Chlorine	Free chlorine (ppm)	Number	Required	Measured using ISO 7393-2:2017 if possible
Free Bromine	Free bromine (ppm)	Number	Required	Measured using ISO 7393-2:2017 if possible
pH Value	pH	Number	Required	Measured using ISO 10523:2008 if possible
Total Alkalinity	Total alkalinity (ppm)	Number	Optional	Measured following ANSI/APSP-11 2012
Calcium Hardness	Calcium hardness (ppm)	Number	Optional	Measured following ANSI/APSP-11 2012
Cyanuric Acid	Cyanuric Acid (ppm)	Number	Optional	Measured following ANSI/APSP-11 2012
Water Temperature	Water Temp (F)	Number	Optional	Measured following ANSI/APSP-11 2012
Enclosure	Enclosure: fencing, walls, gates, and	Boolean	Required	

Field Name	Description	Data Type	Required?	Formatting Details
	doors in good repair			
Access Controls	Self-closing/Self-latching gates or doors operational	Boolean	Optional	
Electrical Protections	Protected overhead electrical wires/GFCI electrical	Boolean	Optional	
Signs Present	"Depth" and "no diving" markers; stair stripes; in good repair and visible	Boolean	Optional	
Drain Gate Secure	Main drain grate secured in place and in good repair	Boolean	Optional	
Main Drain Visible	Water is clear, main drain visible	Boolean	Required	
Safety Equipment	Appropriate safety equipment present and in good repair	Boolean	Required	
Supervision	Adequate supervision of the aquatic facility	Boolean	Optional	
Disinfectant Level	Tested disinfectant level within specified bounds	Boolean	Required	
pH Balance	pH value tested between 7.2 and 7.8	Boolean	Required	
Recirculation Pump	Recirculation pump: approved, good repair, operating	Boolean	Optional	
Filter	Filter: approved, good repair, operating	Boolean	Optional	
No Unauthorized Alterations	Substantial unauthorized alterations/equipment replacement	Boolean	Optional	
No Imminent Health Hazards	Other: Imminent Health Hazards are a 10-point critical violation	Boolean	Required	Document any other imminent health hazards not noted in other optional or required fields.

Jurisdiction Information Feed

The jurisdiction's feed provides metadata about the inspecting jurisdiction, including:

- The jurisdiction name and type
- Details about its scoring system, if applicable
- A place to provide, in a machine-readable fashion, the regulations used to determine pass or fail on the safety checks within the inspection results feed

Since the records in this file are presented at the level of the jurisdiction, most reporting agencies will only provide a single data record in this feed. However, if information about inspections from multiple jurisdictions is aggregated into a single inspections file, the jurisdiction feed should include one record per jurisdiction represented. The Inspections CSV file includes three sets of fields, broken into three sections and described below.

Agency and Jurisdiction Details

These fields provide information about the agency and jurisdiction itself:

- Inspecting Agency (required): The legal name of the agency performing the inspections.
- Jurisdiction Name (required): The legal name of the reporting jurisdiction.
- Jurisdiction Type (required): The type of jurisdiction, such as state, city, county, etc.

Scoring Information

If a value for Inspection Score is provided in the Inspections Feed, this section must be included, and it is used to document the scoring system used in reported inspections.

- Scoring Minimum (required if scoring): The lowest value that could be recorded for an inspection.
    - Example: 0 for a 100 to 0 scoring system, or F for an A to F alphabetical scoring system.
- Scoring Maximum (required if scoring): The highest value that could be recorded for an inspection.
    - Example: 100 for a 100 to 0 scoring system, or A for an A to F alphabetical scoring system.
- Scoring Passing (required if scoring): The minimum value that must be recorded for an inspection to pass.
    - Example: 60 for a 100 to 0 scoring system, or D for an A to F alphabetical scoring system.
- Scoring Regulation (optional): The actual text of the regulation detailing how scores are assigned, or a description written for regular consumers of the data.

Inspection Check Regulations

The remaining fields are used to document the regulations used in the “Safety Checks” section of the Inspections Feed. If a given field is used within the Inspections field, the text or simplified description of the regulation should (but is not required to) be provided.

All fields below, if used, should contain the text of the detailed regulation.

- Free Chlorine Regulation (optional)
- Free Bromine Regulation (optional)
- pH Value Regulation (optional)
- Total Alkalinity Regulation (optional)
- Calcium Hardness Regulation (optional)
- Cyanuric Acid Regulation (optional)
- Water Temperature Regulation (optional)
- Enclosure Regulation (optional):
- Access Controls Regulation (optional)
- Electrical Protections Regulation (optional)
- Signs Present Regulation (optional)
- Drain Gate Secure Regulation (optional)
- Main Drain Visible Regulation (optional)
- Safety Equipment Regulation (optional)
- Supervision Regulation (optional)
- Disinfectant Level Regulation (optional)
- pH Balance Regulation (optional)
- Recirculation Pump Regulation (optional)
- Filter Regulation (optional)
- No Unauthorized Alterations Regulation (optional)

Detailed Jurisdictions Schema

Field Name	Description	Datatype	Required?
Inspection Agency	The agency performing inspections for this jurisdiction	Text	Required
Jurisdiction Name	Name of the jurisdiction this data file is for	Text	Required
Jurisdiction Type	Type of jurisdiction, ex: State, County, City	Text	Required
Scoring Minimum	The minimum score possible. Ex: 0, F, etc.	Text	Optional
Scoring Maximum	The maximum score possible. Ex: 100, A, etc.	Text	Optional
Scoring Passing	The minimum score necessary to pass. Ex: 60, D, etc.	Text	Optional
Scoring Regulation	The test of the regulation detailing how inspections are scored	Text	Optional
Free Chlorine Regulation	The text of the detailed regulation	Text	Optional
Free Bromine Regulation	The text of the detailed regulation	Text	Optional
pH Value Regulation	The text of the detailed regulation	Text	Optional
Total Alkalinity Regulation	The text of the detailed regulation	Text	Optional
Calcium Hardness Regulation	The text of the detailed regulation	Text	Optional
Cyanuric Acid Regulation	The text of the detailed regulation	Text	Optional
Water Temperature Regulation	The text of the detailed regulation	Text	Optional
Enclosure Regulation	The text of the detailed regulation	Text	Optional
Access Controls Regulation	The text of the detailed regulation	Text	Optional
Electrical Protections Regulation	The text of the detailed regulation	Text	Optional
Signs Present Regulations	The text of the detailed regulation	Text	Optional
Drain Gate Secure Regulation	The text of the detailed regulation	Text	Optional
Main Drain Visible Regulation	The text of the detailed regulation	Text	Optional
Safety Equipment Regulation	The text of the detailed regulation	Text	Optional
Supervision Regulation	The text of the detailed regulation	Text	Optional
Disinfectant Level Regulation	The text of the detailed regulation	Text	Optional

Field Name	Description	Datatype	Required?
pH Balance Regulation	The text of the detailed regulation	Text	Optional
Recirculation Pump Regulation	The text of the detailed regulation	Text	Optional
Filter Regulation	The text of the detailed regulation	Text	Optional
Flotation Tank Regulation	The text of the detailed regulation	Text	Optional
Flotation Tank Turnover Regulation	The text of the detailed regulation	Text	Optional

Definitions

Aquatic Venue: A water feature that is inspected by the inspecting agency (e.g.,pool, hot tub, etc.)

Boolean: A binary variable, having two possible values called “true” and “false.”

Barrier: A fence, wall, building wall, or combination thereof, which surrounds the pool area and effectively obstructs access into the pool area.

Comma-separated values (CSV) file: A text file that has a specific format which allows data to be saved in a table structured format.

Dataset: A collection of related data which may be accessed individually or in combination or managed as a whole entity.

Data Type: A particular kind of data item, as defined by the values it can take, the programming language used, or the operations that can be performed on it.

Extract, Transform, Load (ETL): A data integration process that combines data from multiple data sources into a single, consistent data store which is located into a data warehouse or other system.

Facility: A licensed or permitted location, business, or organization that contains one or more aquatic venues (e.g., hotel, school, amusement park, apartment complex, etc.)

Imminent Health Hazard: A threat or danger to health or safety that is consideredto exist when there is evidence sufficient to show that a product, practice, circumstance, or event creates a situation that merits immediate correction or cessation of operation to prevent injury or illness.

Inspecting Agency: The government agency performing the inspection itself

Inspection: An instance where an inspector visits an aquatic facility or venue, performs checks of health and safety regulations, optionally assigns a score, and determines whether an aquatic facility is allowed to remain open

Jurisdiction: A geographic region over which the inspecting agency performs inspections

Model Aquatic Health Code (MAHC): A set of guidelines to prevent injury and illness at public (non-backyard) aquatic venues, such as pools, hot tubs, and water playgrounds. Developed through the leadership from the CDC.

Publish: Make content available online.

Open data: Information or content made freely available to use and redistribute, subject only to the requirement to attribute it to the source.

Risk Type: Frequency of inspections conducted per year.

- **Risk Category 1**: 1 inspection per year.
    - Summer venue only with past excellent inspection reports.
- **Risk Category 2**: 2 inspections per year.
    - Pools with limited prior history of non-compliance
    - Category 3 location with historical documentation to have achieved active operational control of illness and injury risk factors
    - Summer or year-round operation
- **Risk Category 3**: 3 inspections per year.
    - Pool serving populations at increased risk of illness such as diaper-aged children (children < 5 years old)
    - Pool serving large numbers of people
    - History of waterborne illness, injuries and/or complaints
    - History of non-compliance with provisions related to illness/injury risk factors or critical items
    - Year-round operation