Comprehensive Disaster Assessment and Readiness Toolkit (CDART)

NEHA Quarterly Preparedness Webinar

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CDART Overview

- **Hurricane Maria Response - Health Care Facility Assessments**
- **Hurricane Maria Recovery – Preparedness Assessments**
- **COVID-19 Response – Vaccine Distribution Dashboards in Puerto Rico**
- **Next Steps and Other Uses of CDART**

Response-Driven Data Needs

- How can we collect and enter data?
- How can we manage data?
- How can we view data?
- How can we use data?

Hurricane Maria Response (2017) - Health Care Facility Assessments

Hurricane Maria Response in Puerto Rico: Developing CDART for Healthcare Facility Assessments

- **Request from Puerto Rico Department of Health (PRDOH) to Department of Health and Human Services/Incident Response Coordination Team:**
  - Assigned to the Public Health Branch (PHB) by Federal Health Coordinating Official (FHCO)
- **Included data elements from PRDOH assessment tools**
  - Questions included
    - Operational unit capability
    - Bed census
    - Structural damage
    - Medication/medical supply needs

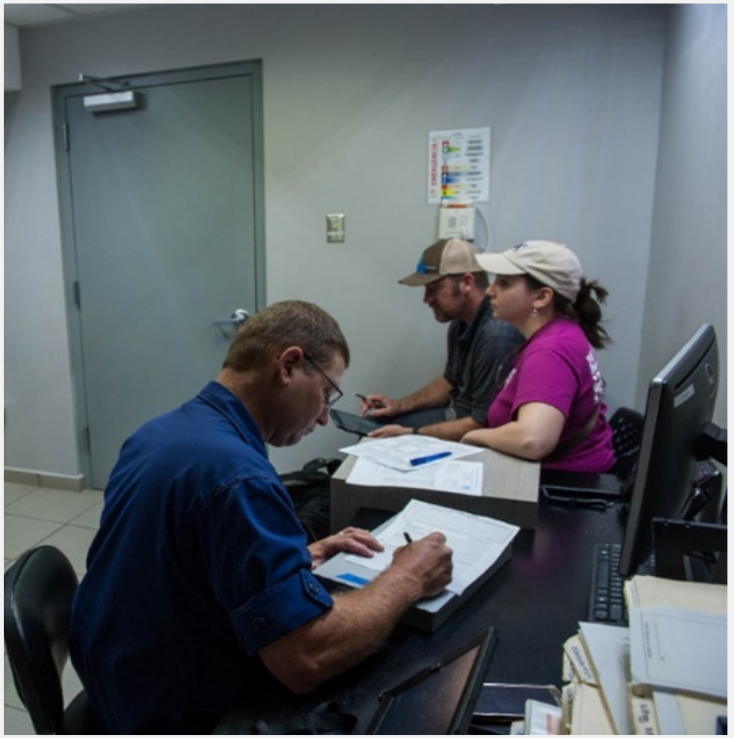


Photo credit: Public Health Branch staff

Initial Health Care Center Assessment Coordination Map, mid-October 2017

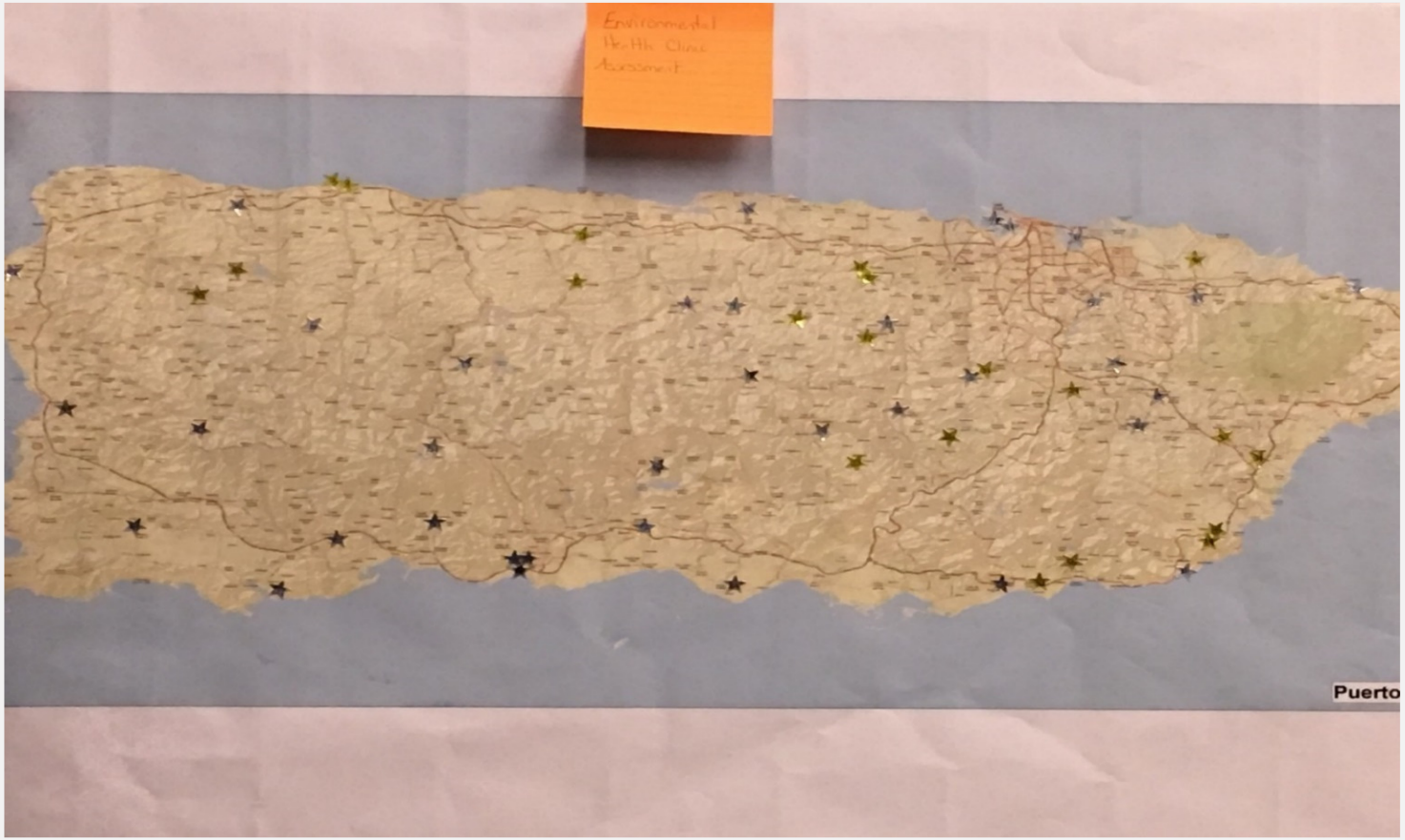
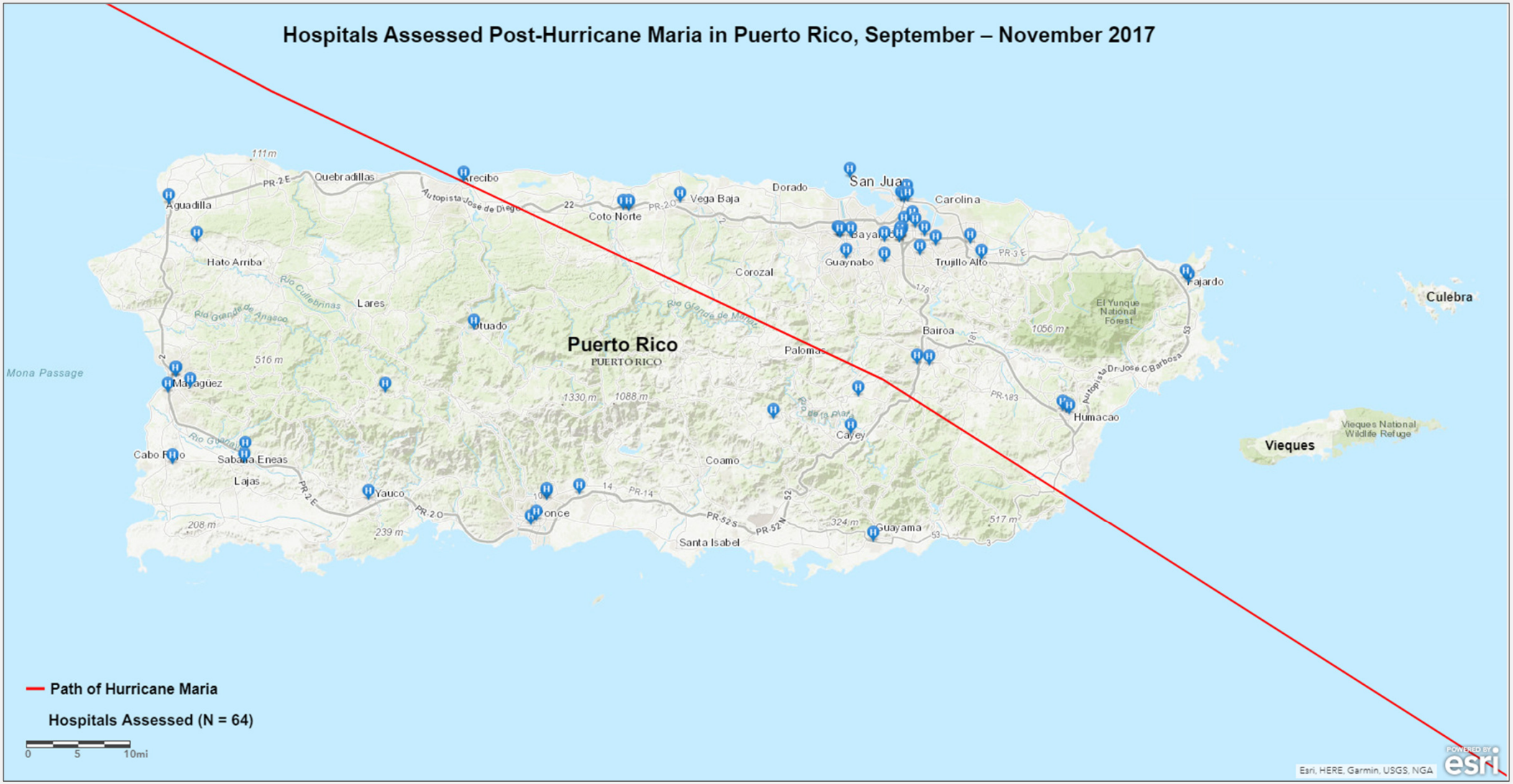


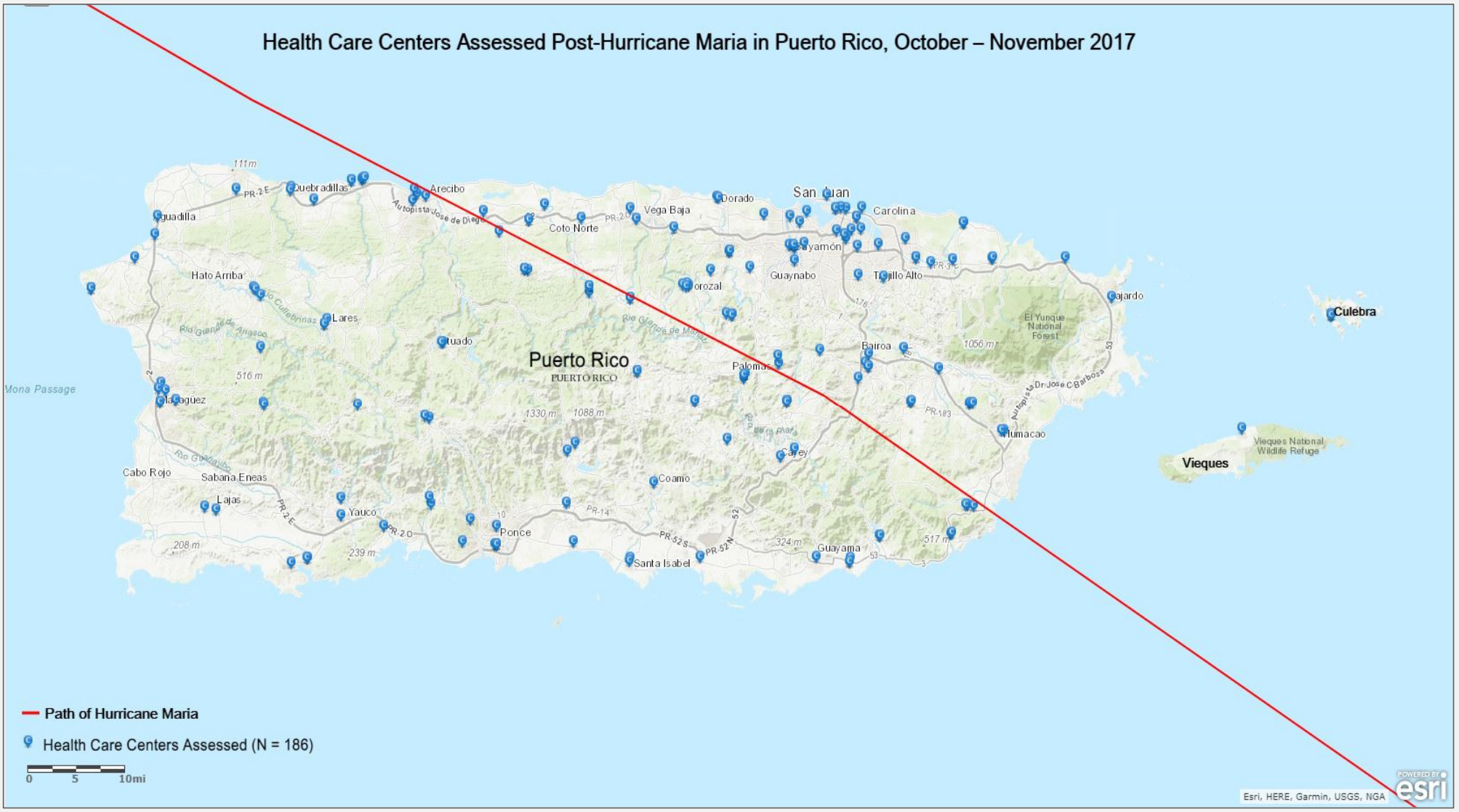
Photo credit: ATSDR staff

Hospital and Clinic Assessment Data Collection

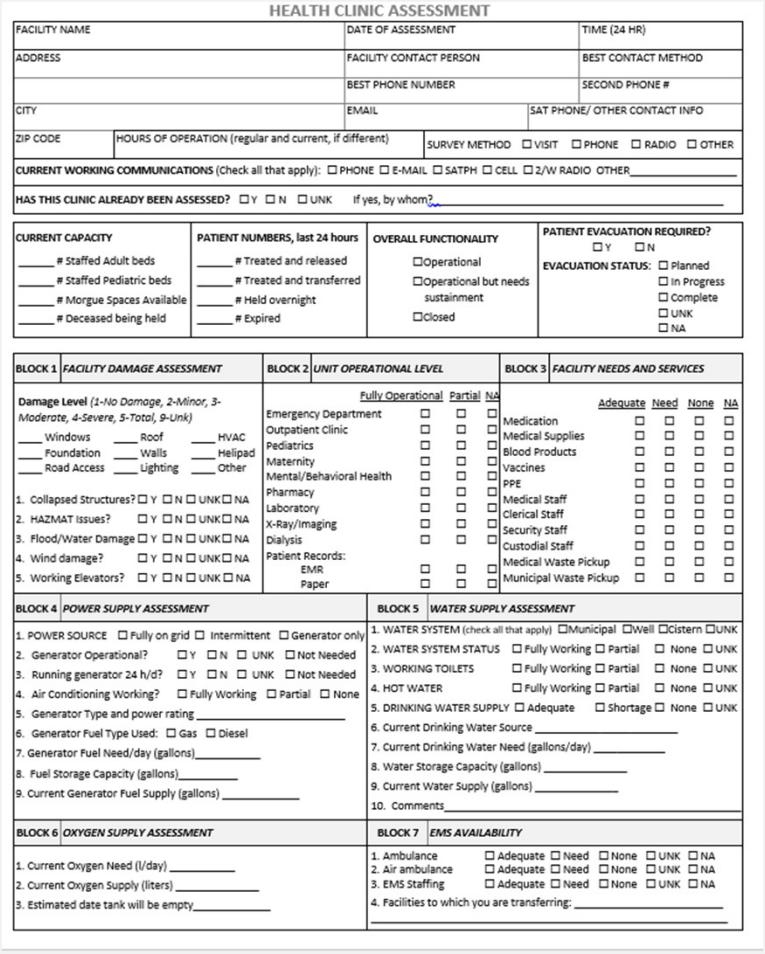
- Initial assessment of sub-set of hospitals and health care centers
- Followed by a tiered approach for hospitals and health care centers (determined by the FHCO and PRDOH)
  - 14 high-priority hospitals
  - 16 high-priority health care centers
  - A total of 64 hospitals and 186 health care centers were assessed
- Information collected was used to prioritize response activities
  - Provided to federal agencies for situational awareness of hospital capabilities (e.g., ER and ICU operational unit status)
  - DOD temporary field medical treatment facility
  - Temporary repair of high-priority hospitals and health care centers initiation and submission of public assistance requests for repairs
  - Data collected were used to help drive recovery efforts for hospital and health care center infrastructure needs

Hospitals Assessed Post-Hurricane Maria in Puerto Rico, September – November 2017




Health Care Centers Assessed Post-Hurricane Maria in Puerto Rico, October – November 2017
Puerto Rico
PUERTO RICO
San Juan
Culebra
Vieques
Vieques National Wildlife Refuge
El Yunque National Forest
Mona Passage
Path of Hurricane Maria
Health Care Centers Assessed (N = 186)
0 5 10mi
Esri, HERE, Garmin, USGS, NGA

Hospital and Clinic Assessment Tools



HEALTH CLINIC ASSESSMENT

FACILITY NAME	DATE OF ASSESSMENT	TIME (24 HR)
ADDRESS	FACILITY CONTACT PERSON	BEST CONTACT METHOD
	BEST PHONE NUMBER	SECOND PHONE #
CITY	EMAIL	SAT PHONE/ OTHER CONTACT INFO
ZIP CODE	HOURS OF OPERATION (regular and current, if different)	SURVEY METHOD ☐ VISIT ☐ PHONE ☐ RADIO ☐ OTHER

CURRENT WORKING COMMUNICATIONS (Check all that apply): ☐ PHONE ☐ E-MAIL ☐ SATPH ☐ CELL ☐ 2/W RADIO OTHER_____

HAS THIS CLINIC ALREADY BEEN ASSESSED? ☐ Y ☐ N ☐ UNK If yes, by whom?_____

CURRENT CAPACITY	PATIENT NUMBERS, last 24 hours	OVERALL FUNCTIONALITY	PATIENT EVACUATION REQUIRED? ☐ Y ☐ N
_____ # Staffed Adult beds	_____ # Treated and released	☐ Operational	EVACUATION STATUS: ☐ Planned
_____ # Staffed Pediatric beds	_____ # Treated and transferred	☐ Operational but needs sustainment	☐ In Progress
_____ # Morgue Spaces Available	_____ # Held overnight	☐ Closed	☐ Complete
_____ # Deceased being held	_____ # Expired		☐ UNK
			☐ NA

BLOCK 1 ***FACILITY DAMAGE ASSESSMENT***

Damage Level *(1-No Damage, 2-Minor, 3-Moderate, 4-Severe, 5-Total, 9-Unk)*

____ Windows ____ Roof ____ HVAC
____ Foundation ____ Walls ____ Helipad
____ Road Access ____ Lighting ____ Other

1. Collapsed Structures? ☐ Y ☐ N ☐ UNK ☐ NA
2. HAZMAT Issues? ☐ Y ☐ N ☐ UNK ☐ NA
3. Flood/Water Damage ☐ Y ☐ N ☐ UNK ☐ NA
4. Wind damage? ☐ Y ☐ N ☐ UNK ☐ NA
5. Working Elevators? ☐ Y ☐ N ☐ UNK ☐ NA

BLOCK 2 ***UNIT OPERATIONAL LEVEL***

	Fully Operational	Partial	NA
Emergency Department	☐	☐	☐
Outpatient Clinic	☐	☐	☐
Pediatrics	☐	☐	☐
Maternity	☐	☐	☐
Mental/Behavioral Health	☐	☐	☐
Pharmacy	☐	☐	☐
Laboratory	☐	☐	☐
X-Ray/Imaging	☐	☐	☐
Dialysis	☐	☐	☐
Patient Records: EMR	☐	☐	☐
Paper	☐	☐	☐

BLOCK 3 ***FACILITY NEEDS AND SERVICES***

	Adequate	Need	None	NA
Medication	☐	☐	☐	☐
Medical Supplies	☐	☐	☐	☐
Blood Products	☐	☐	☐	☐
Vaccines	☐	☐	☐	☐
PPE	☐	☐	☐	☐
Medical Staff	☐	☐	☐	☐
Clerical Staff	☐	☐	☐	☐
Security Staff	☐	☐	☐	☐
Custodial Staff	☐	☐	☐	☐
Medical Waste Pickup	☐	☐	☐	☐
Municipal Waste Pickup	☐	☐	☐	☐

BLOCK 4 ***POWER SUPPLY ASSESSMENT***

1. POWER SOURCE ☐ Fully on grid ☐ Intermittent ☐ Generator only
2. Generator Operational? ☐ Y ☐ N ☐ UNK ☐ Not Needed
3. Running generator 24 h/d? ☐ Y ☐ N ☐ UNK ☐ Not Needed
4. Air Conditioning Working? ☐ Fully Working ☐ Partial ☐ None
5. Generator Type and power rating _____
6. Generator Fuel Type Used: ☐ Gas ☐ Diesel
7. Generator Fuel Need/day (gallons)_____
8. Fuel Storage Capacity (gallons)_____
9. Current Generator Fuel Supply (gallons) _____

BLOCK 5 ***WATER SUPPLY ASSESSMENT***

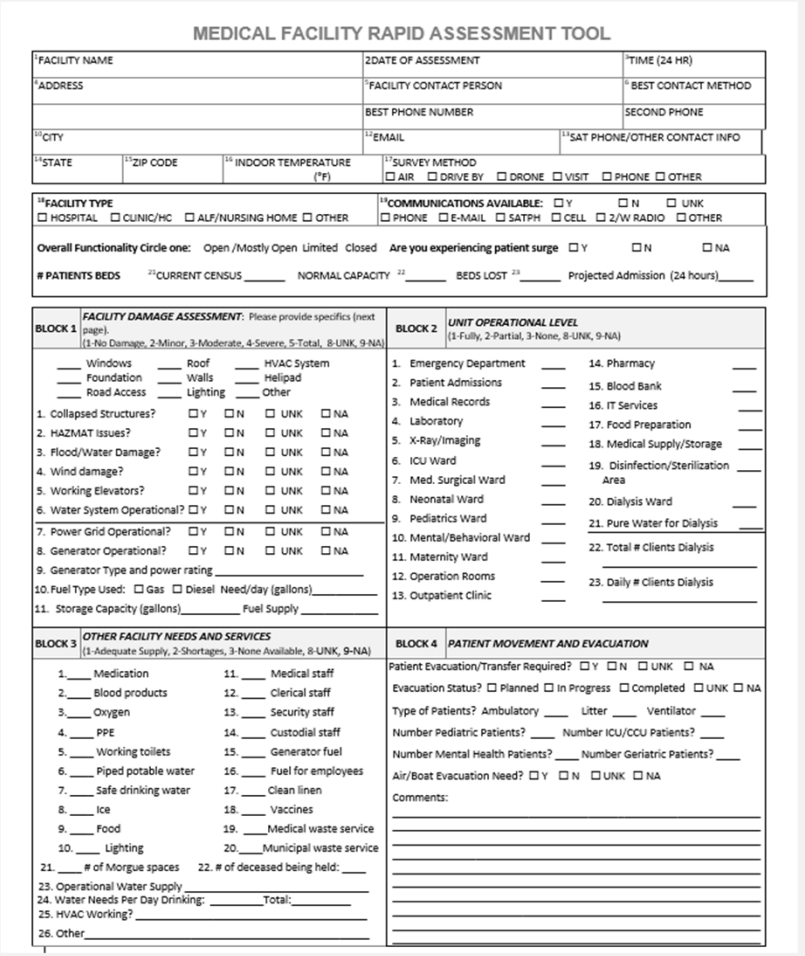
1. WATER SYSTEM (check all that apply) ☐ Municipal ☐ Well ☐ Cistern ☐ UNK
2. WATER SYSTEM STATUS ☐ Fully Working ☐ Partial ☐ None ☐ UNK
3. WORKING TOILETS ☐ Fully Working ☐ Partial ☐ None ☐ UNK
4. HOT WATER ☐ Fully Working ☐ Partial ☐ None ☐ UNK
5. DRINKING WATER SUPPLY ☐ Adequate ☐ Shortage ☐ None ☐ UNK
6. Current Drinking Water Source _____
7. Current Drinking Water Need (gallons/day) _____
8. Water Storage Capacity (gallons) _____
9. Current Water Supply (gallons) _____
10. Comments_____

BLOCK 6 ***OXYGEN SUPPLY ASSESSMENT***

1. Current Oxygen Need (l/day) _____
2. Current Oxygen Supply (liters) _____
3. Estimated date tank will be empty_____

BLOCK 7 ***EMS AVAILABILITY***

1. Ambulance ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
2. Air ambulance ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
3. EMS Staffing ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
4. Facilities to which you are transferring: _____



MEDICAL FACILITY RAPID ASSESSMENT TOOL

[1]FACILITY NAME	[2]DATE OF ASSESSMENT	[3]TIME (24 HR)
[4]ADDRESS	[5]FACILITY CONTACT PERSON	[6]BEST CONTACT METHOD
	BEST PHONE NUMBER	SECOND PHONE
[10]CITY	[12]EMAIL	[13]SAT PHONE/OTHER CONTACT INFO
[14]STATE / [15]ZIP CODE	[16]INDOOR TEMPERATURE (°F)	[17]SURVEY METHOD ☐ AIR ☐ DRIVE BY ☐ DRONE ☐ VISIT ☐ PHONE ☐ OTHER

[18]**FACILITY TYPE** ☐ HOSPITAL ☐ CLINIC/HC ☐ ALF/NURSING HOME ☐ OTHER

[19]**COMMUNICATIONS AVAILABLE:** ☐ Y ☐ N ☐ UNK ☐ PHONE ☐ E-MAIL ☐ SATPH ☐ CELL ☐ 2/W RADIO ☐ OTHER

Overall Functionality Circle one: Open /Mostly Open Limited Closed **Are you experiencing patient surge** ☐ Y ☐ N ☐ NA

 # PATIENTS BEDS [21]CURRENT CENSUS _____ NORMAL CAPACITY [22]_____ BEDS LOST [23]_____ Projected Admission (24 hours)_____

BLOCK 1 ***FACILITY DAMAGE ASSESSMENT***: Please provide specifics (next page). (1-No Damage, 2-Minor, 3-Moderate, 4-Severe, 5-Total, 8-UNK, 9-NA)

____ Windows ____ Roof ____ HVAC System
____ Foundation ____ Walls ____ Helipad
____ Road Access ____ Lighting ____ Other

1. Collapsed Structures? ☐ Y ☐ N ☐ UNK ☐ NA
2. HAZMAT Issues? ☐ Y ☐ N ☐ UNK ☐ NA
3. Flood/Water Damage? ☐ Y ☐ N ☐ UNK ☐ NA
4. Wind damage? ☐ Y ☐ N ☐ UNK ☐ NA
5. Working Elevators? ☐ Y ☐ N ☐ UNK ☐ NA
6. Water System Operational? ☐ Y ☐ N ☐ UNK ☐ NA
7. Power Grid Operational? ☐ Y ☐ N ☐ UNK ☐ NA
8. Generator Operational? ☐ Y ☐ N ☐ UNK ☐ NA
9. Generator Type and power rating _____
10. Fuel Type Used: ☐ Gas ☐ Diesel Need/day (gallons)_____
11. Storage Capacity (gallons)_____ Fuel Supply _____

BLOCK 2 ***UNIT OPERATIONAL LEVEL*** (1-Fully, 2-Partial, 3-None, 8-UNK, 9-NA)

1. Emergency Department ____
2. Patient Admissions ____
3. Medical Records ____
4. Laboratory ____
5. X-Ray/Imaging ____
6. ICU Ward ____
7. Med. Surgical Ward ____
8. Neonatal Ward ____
9. Pediatrics Ward ____
10. Mental/Behavioral Ward ____
11. Maternity Ward ____
12. Operation Rooms ____
13. Outpatient Clinic ____
14. Pharmacy ____
15. Blood Bank ____
16. IT Services ____
17. Food Preparation ____
18. Medical Supply/Storage ____
19. Disinfection/Sterilization Area ____
20. Dialysis Ward ____
21. Pure Water for Dialysis ____
22. Total # Clients Dialysis _____
23. Daily # Clients Dialysis _____

BLOCK 3 ***OTHER FACILITY NEEDS AND SERVICES*** (1-Adequate Supply, 2-Shortages, 3-None Available, 8-UNK, 9-NA)

1. ____ Medication
2. ____ Blood products
3. ____ Oxygen
4. ____ PPE
5. ____ Working toilets
6. ____ Piped potable water
7. ____ Safe drinking water
8. ____ Ice
9. ____ Food
10. ____ Lighting
11. ____ Medical staff
12. ____ Clerical staff
13. ____ Security staff
14. ____ Custodial staff
15. ____ Generator fuel
16. ____ Fuel for employees
17. ____ Clean linen
18. ____ Vaccines
19. ____ Medical waste service
20. ____ Municipal waste service
21. ____ # of Morgue spaces
22. # of deceased being held: ____
23. Operational Water Supply _____
24. Water Needs Per Day Drinking: _____Total:_____
25. HVAC Working? _____
26. Other_____

BLOCK 4 ***PATIENT MOVEMENT AND EVACUATION***

Patient Evacuation/Transfer Required? ☐ Y ☐ N ☐ UNK ☐ NA
Evacuation Status? ☐ Planned ☐ In Progress ☐ Completed ☐ UNK ☐ NA
Type of Patients? Ambulatory ____ Litter ____ Ventilator ____
Number Pediatric Patients? ____ Number ICU/CCU Patients? ____
Number Mental Health Patients? ____ Number Geriatric Patients? ____
Air/Boat Evacuation Need? ☐ Y ☐ N ☐ UNK ☐ NA
Comments:

Data Entry Requirements

- Paper-based surveys resulted in a large amount of time for data entry and QA/QC of data. Also, the manual data entry process could introduce errors
  - Field assessment forms often had to be rewritten at the end of the day due to legibility issues (timing of a subset indicated this took an estimated 15 minutes)
  - Manual data entry was time-consuming and subject to error (timing of a subset indicated this took a minimum of 30 minutes)
  - QA/QC of data entry (timing of a subset indicated this took a minimum of 15 minutes)
  - Paper based survey administration resulted in approximately 1 hour of staff time per survey for data entry needs (~72 hours/week)

App Development

- In order to alleviate data entry time and error, the PHB collaborated with the Puerto Rico Planning Board and PRDOH to develop app-based electronic surveys
- Additionally, FEMA logistics provided 10 tablets to test the pilot CDART application in the field
  - The app allows for immediate data collection and entry in the field
  - App used Environmental Systems Research Institute (ESRI) Arc-GIS online Survey 123 (S123) Connect georeferenced electronic forms.
  - Field teams can upload pictures to the site-specific survey
  - Puerto Rico Planning Board developed a dashboard for each tool showing real-time information, such as power status, communications status, and operational capacity
- The PHB field teams piloted the app from October 31, 2017 to November 18, 2017

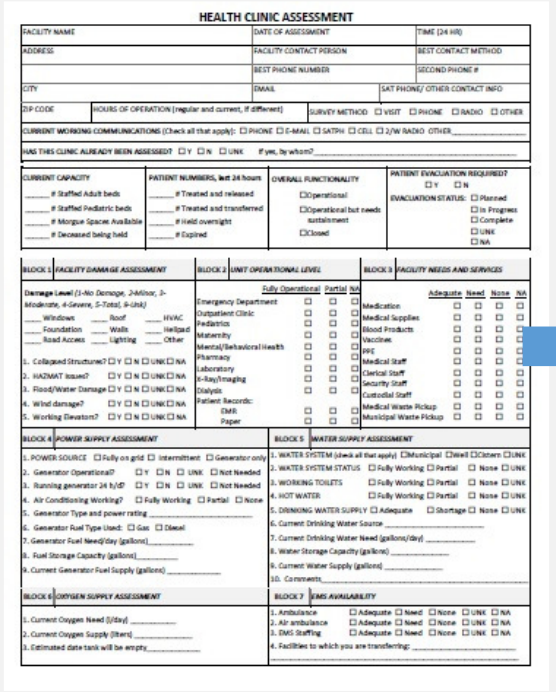
Hurricane Maria Recovery – Preparedness Assessments

CDART Pilot Project in Puerto Rico

- **Tool Development and Training for PRDOH**
  - Readiness check and status check (app-based and web link self-reporting tool)
  - Post-disaster assessments
  - Translate tools into ESRI Survey123 electronic form and tablet-based application
  - Create CDART Tablet Go-Kits (shown here)
  - Create visual dashboards
  - Pilot tools
  - Training manuals and operational methodologies
  - Train PRDOH staff on development of tools and implementation of assessments

Photo credit: ATSDR staff

Data Workflow


HEALTH CLINIC ASSESSMENT

FACILITY NAME | DATE OF ASSESSMENT | TIME (24 HR)

ADDRESS | FACILITY CONTACT PERSON | BEST CONTACT METHOD

BEST PHONE NUMBER | SECOND PHONE #

CITY | EMAIL | SAT PHONE/ OTHER CONTACT INFO

ZIP CODE | HOURS OF OPERATION (regular and current, if different) | SURVEY METHOD ☐ VISIT ☐ PHONE ☐ RADIO ☐ OTHER

CURRENT WORKING COMMUNICATIONS (Check all that apply): ☐ PHONE ☐ E-MAIL ☐ SATPH ☐ CELL ☐ 2/W RADIO OTHER

HAS THIS CLINIC ALREADY BEEN ASSESSED? ☐ Y ☐ N ☐ UNK If yes, by whom?

CURRENT CAPACITY
_____ # Staffed Adult beds
_____ # Staffed Pediatric beds
_____ # Morgue Spaces Available
_____ # Deceased being held

PATIENT NUMBERS, last 24 hours
_____ # Treated and released
_____ # Treated and transferred
_____ # Held overnight
_____ # Expired

OVERALL FUNCTIONALITY
☐Operational
☐Operational but needs sustainment
☐Closed

PATIENT EVACUATION REQUIRED? ☐ Y ☐ N
EVACUATION STATUS: ☐ Planned ☐ In Progress ☐ Complete ☐ UNK ☐ NA

BLOCK 1 FACILITY DAMAGE ASSESSMENT
Damage Level (1-No Damage, 2-Minor, 3-Moderate, 4-Severe, 5-Total, 9-Unk)
_____ Windows _____ Roof _____ HVAC
_____ Foundation _____ Walls _____ Helipad
_____ Road Access _____ Lighting _____ Other

1. Collapsed Structures? ☐ Y ☐ N ☐ UNK ☐ NA
2. HAZMAT Issues? ☐ Y ☐ N ☐ UNK ☐ NA
3. Flood/Water Damage ☐ Y ☐ N ☐ UNK ☐ NA
4. Wind damage? ☐ Y ☐ N ☐ UNK ☐ NA
5. Working Elevators? ☐ Y ☐ N ☐ UNK ☐ NA

BLOCK 2 UNIT OPERATIONAL LEVEL

	Fully Operational	Partial	NA
Emergency Department	☐	☐	☐
Outpatient Clinic	☐	☐	☐
Pediatrics	☐	☐	☐
Maternity	☐	☐	☐
Mental/Behavioral Health	☐	☐	☐
Pharmacy	☐	☐	☐
Laboratory	☐	☐	☐
X-Ray/Imaging	☐	☐	☐
Dialysis	☐	☐	☐
Patient Records: EMR	☐	☐	☐
Patient Records: Paper	☐	☐	☐

BLOCK 3 FACILITY NEEDS AND SERVICES

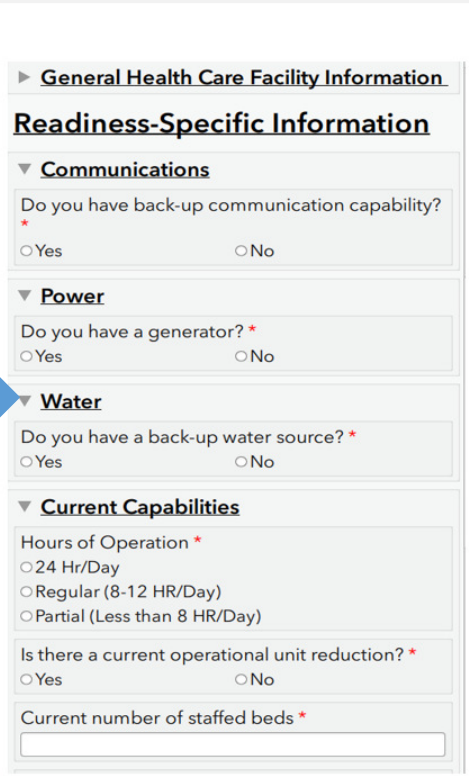
	Adequate	Need	None	NA
Medication	☐	☐	☐	☐
Medical Supplies	☐	☐	☐	☐
Blood Products	☐	☐	☐	☐
Vaccines	☐	☐	☐	☐
PPE	☐	☐	☐	☐
Medical Staff	☐	☐	☐	☐
Clerical Staff	☐	☐	☐	☐
Security Staff	☐	☐	☐	☐
Custodial Staff	☐	☐	☐	☐
Medical Waste Pickup	☐	☐	☐	☐
Municipal Waste Pickup	☐	☐	☐	☐

BLOCK 4 POWER SUPPLY ASSESSMENT
1. POWER SOURCE ☐ Fully on grid ☐ Intermittent ☐ Generator only
2. Generator Operational? ☐ Y ☐ N ☐ UNK ☐ Not Needed
3. Running generator 24 h/d? ☐ Y ☐ N ☐ UNK ☐ Not Needed
4. Air Conditioning Working? ☐ Fully Working ☐ Partial ☐ None
5. Generator Type and power rating _____
6. Generator Fuel Type Used: ☐ Gas ☐ Diesel
7. Generator Fuel Need/day (gallons)_____
8. Fuel Storage Capacity (gallons)_____
9. Current Generator Fuel Supply (gallons) _____

BLOCK 5 WATER SUPPLY ASSESSMENT
1. WATER SYSTEM (check all that apply) ☐Municipal ☐Well ☐Cistern ☐UNK
2. WATER SYSTEM STATUS ☐ Fully Working ☐ Partial ☐ None ☐ UNK
3. WORKING TOILETS ☐ Fully Working ☐ Partial ☐ None ☐ UNK
4. HOT WATER ☐ Fully Working ☐ Partial ☐ None ☐ UNK
5. DRINKING WATER SUPPLY ☐ Adequate ☐ Shortage ☐ None ☐ UNK
6. Current Drinking Water Source _____
7. Current Drinking Water Need (gallons/day) _____
8. Water Storage Capacity (gallons) _____
9. Current Water Supply (gallons) _____
10. Comments_____

BLOCK 6 OXYGEN SUPPLY ASSESSMENT
1. Current Oxygen Need (l/day) _____
2. Current Oxygen Supply (liters) _____
3. Estimated date tank will be empty_____

BLOCK 7 EMS AVAILABILITY
1. Ambulance ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
2. Air ambulance ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
3. EMS Staffing ☐ Adequate ☐ Need ☐ None ☐ UNK ☐ NA
4. Facilities to which you are transferring: _____


General Health Care Facility Information

Readiness-Specific Information

Communications

Do you have back-up communication capability? *
○ Yes ○ No

Power

Do you have a generator? *
○ Yes ○ No

Water

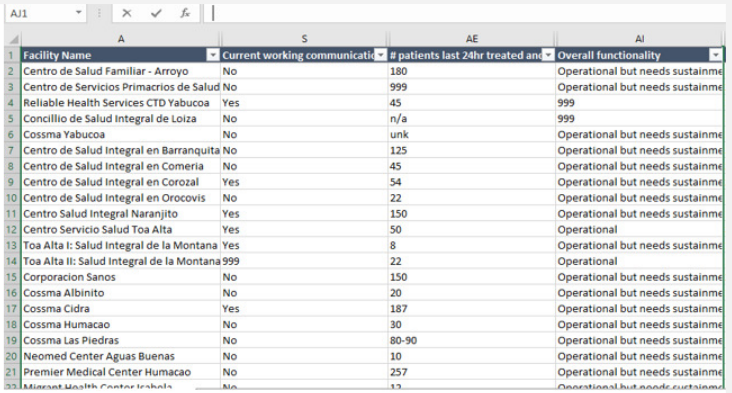
Do you have a back-up water source? *
○ Yes ○ No

Current Capabilities

Hours of Operation *
○ 24 Hr/Day
○ Regular (8-12 HR/Day)
○ Partial (Less than 8 HR/Day)

Is there a current operational unit reduction? *
○ Yes ○ No

Current number of staffed beds *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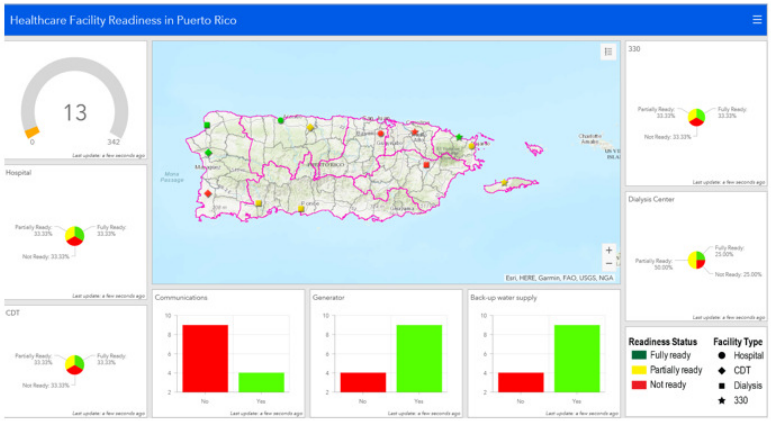
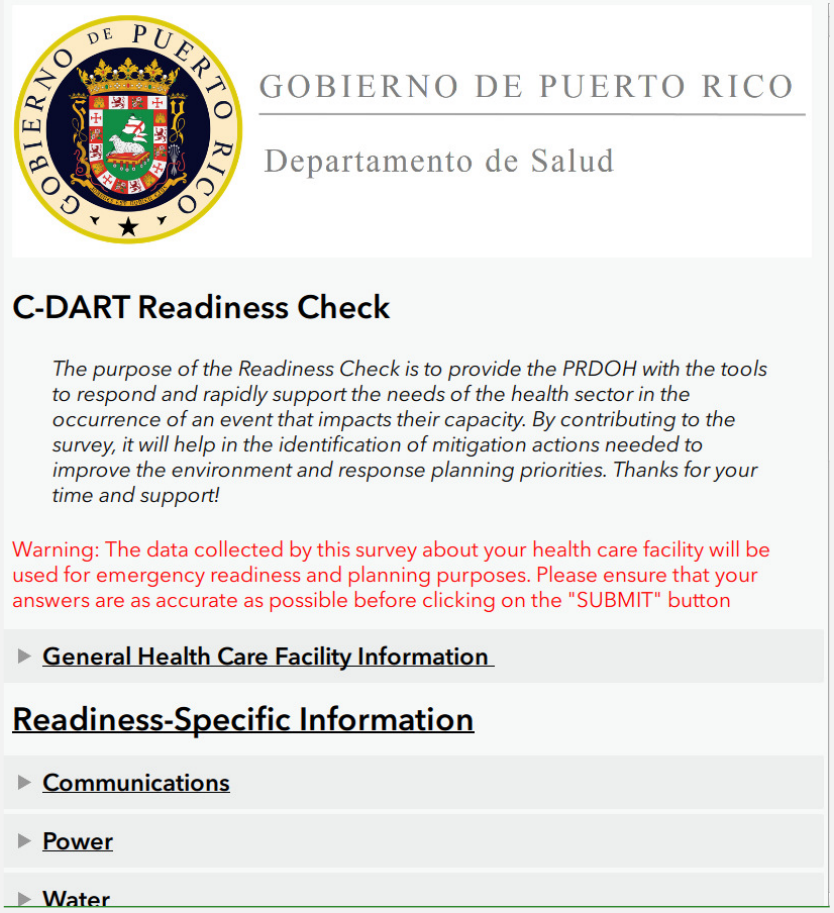
	A	S	AE	AI
1	Facility Name	Current working communicatic	# patients last 24hr treated and	Overall functionality
2	Centro de Salud Familiar - Arroyo	No	180	Operational but needs sustainme
3	Centro de Servicios Primacrios de Salud	No	999	Operational but needs sustainme
4	Reliable Health Services CTD Yabucoa	Yes	45	999
5	Concillio de Salud Integral de Loiza	No	n/a	999
6	Cossma Yabucoa	No	unk	Operational but needs sustainme
7	Centro de Salud Integral en Barranquita	No	125	Operational but needs sustainme
8	Centro de Salud Integral en Comeria	No	45	Operational but needs sustainme
9	Centro de Salud Integral en Corozal	Yes	54	Operational but needs sustainme
10	Centro de Salud Integral en Orocovis	No	22	Operational but needs sustainme
11	Centro Salud Integral Naranjito	Yes	150	Operational but needs sustainme
12	Centro Servicio Salud Toa Alta	Yes	50	Operational
13	Toa Alta I: Salud Integral de la Montana	Yes	8	Operational but needs sustainme
14	Toa Alta II: Salud Integral de la Montana	999	22	Operational
15	Corporacion Sanos	No	150	Operational but needs sustainme
16	Cossma Albinito	No	20	Operational but needs sustainme
17	Cossma Cidra	Yes	187	Operational but needs sustainme
18	Cossma Humacao	No	30	Operational but needs sustainme
19	Cossma Las Piedras	No	80-90	Operational but needs sustainme
20	Neomed Center Aguas Buenas	No	10	Operational but needs sustainme
21	Premier Medical Center Humacao	No	257	Operational but needs sustainme
22	Migrant Health Center Icabela	No	12	Operational but needs sustainme



CDART Healthcare Facility Project

- **Readiness Check**
  - 48 hours prior to known disaster (e.g. hurricane)
- **Rapid Disaster Assessment Tool**
  - Immediately post disaster (<72 hours)
  - Data to prioritize comprehensive assessments
- **Comprehensive Disaster Assessment Tool**
  - <72 hours post-disaster for priority hospitals and clinics
- **PRDOH Hospital Coalition Members were trained on the tools using a train-the-trainer approach**



GOBIERNO DE PUERTO RICO

Departamento de Salud

C-DART Readiness Check

The purpose of the Readiness Check is to provide the PRDOH with the tools to respond and rapidly support the needs of the health sector in the occurrence of an event that impacts their capacity. By contributing to the survey, it will help in the identification of mitigation actions needed to improve the environment and response planning priorities. Thanks for your time and support!

Warning: The data collected by this survey about your health care facility will be used for emergency readiness and planning purposes. Please ensure that your answers are as accurate as possible before clicking on the "SUBMIT" button

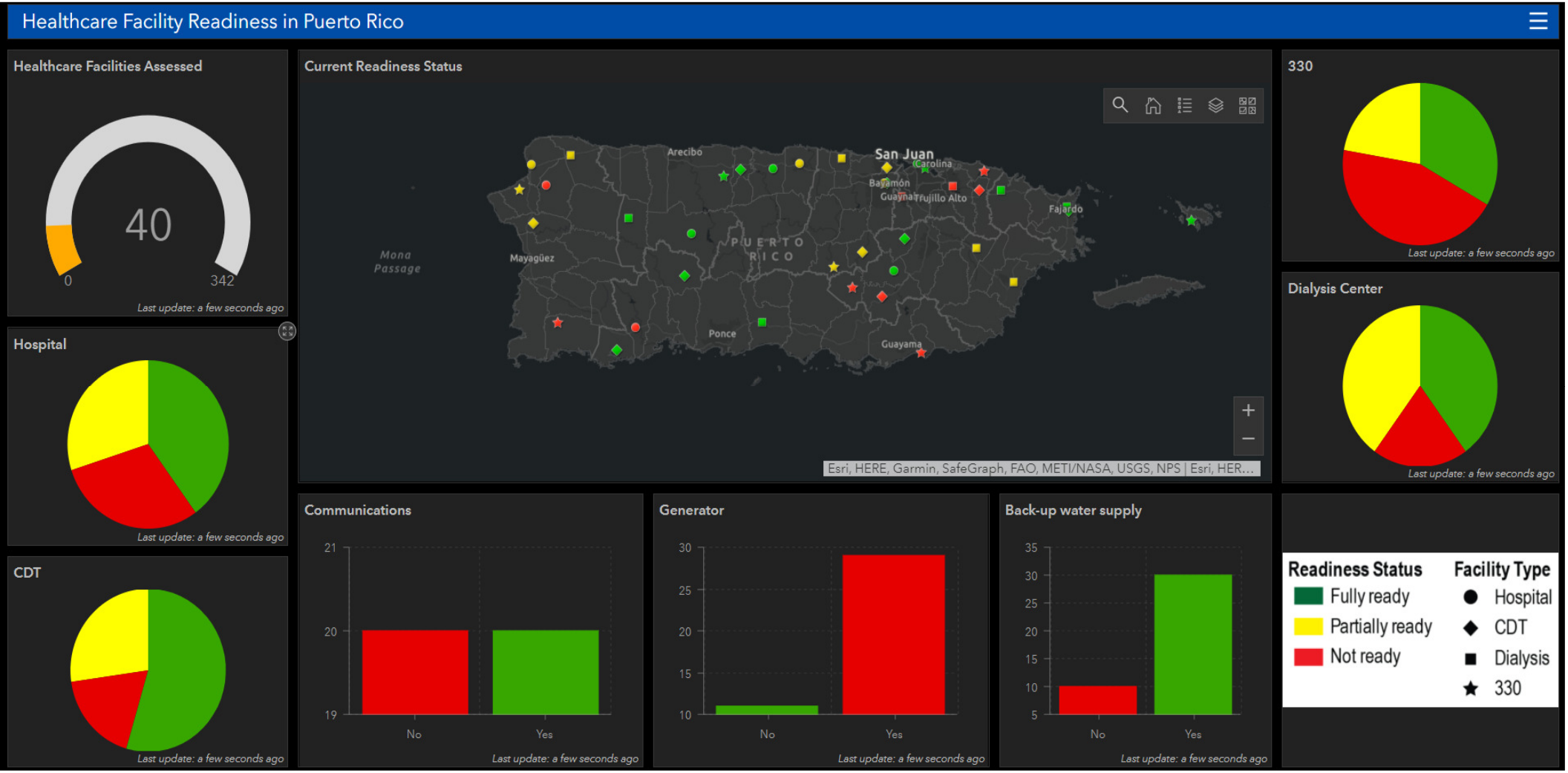
▶ General Health Care Facility Information

Readiness-Specific Information

▶ Communications

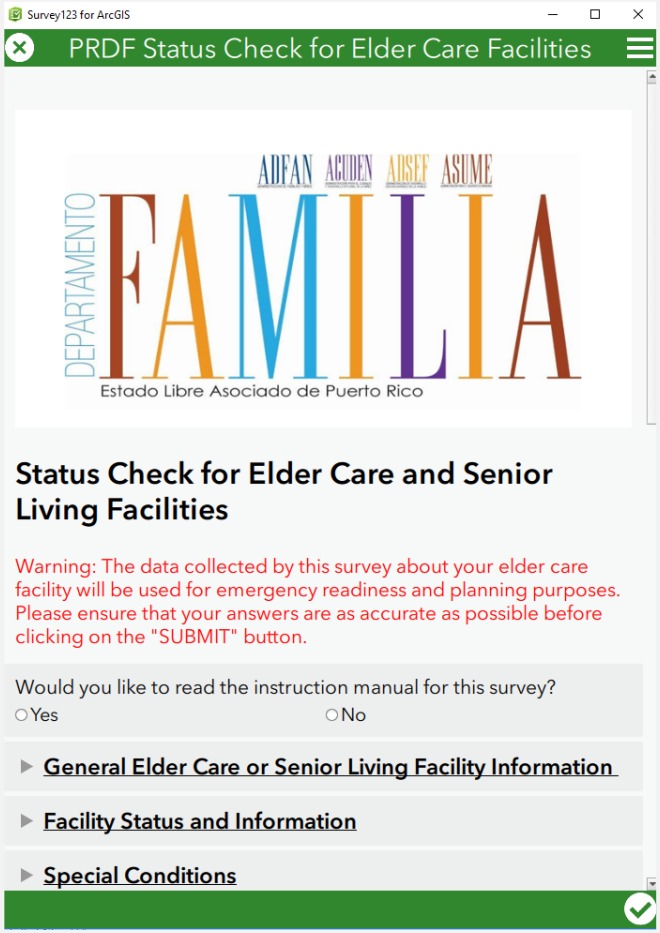
▶ Power

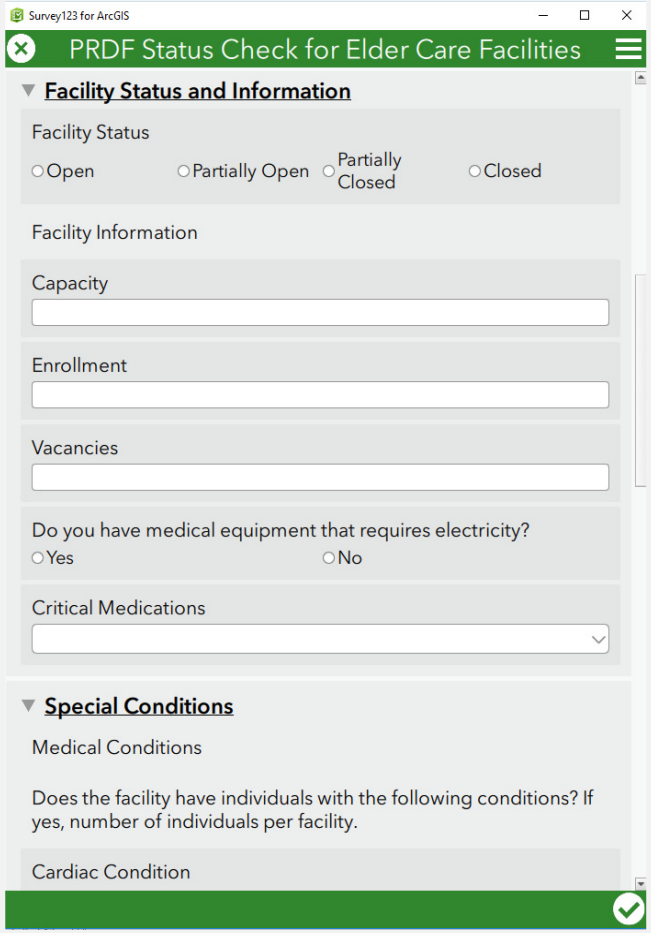
▶ Water

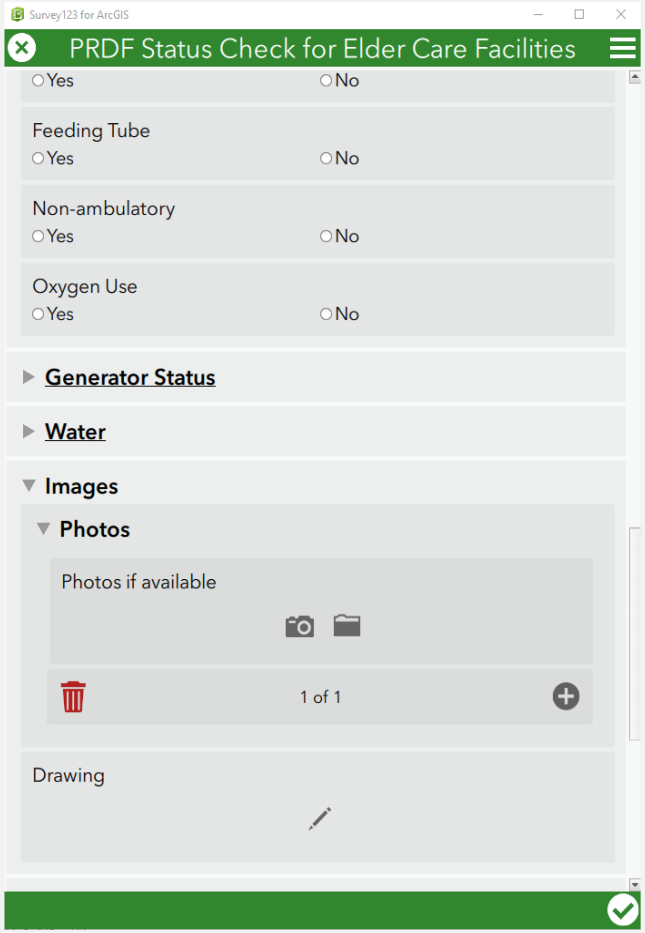


This dashboard was created using “test” data and **does not represent** actual status of healthcare facility readiness in Puerto Rico

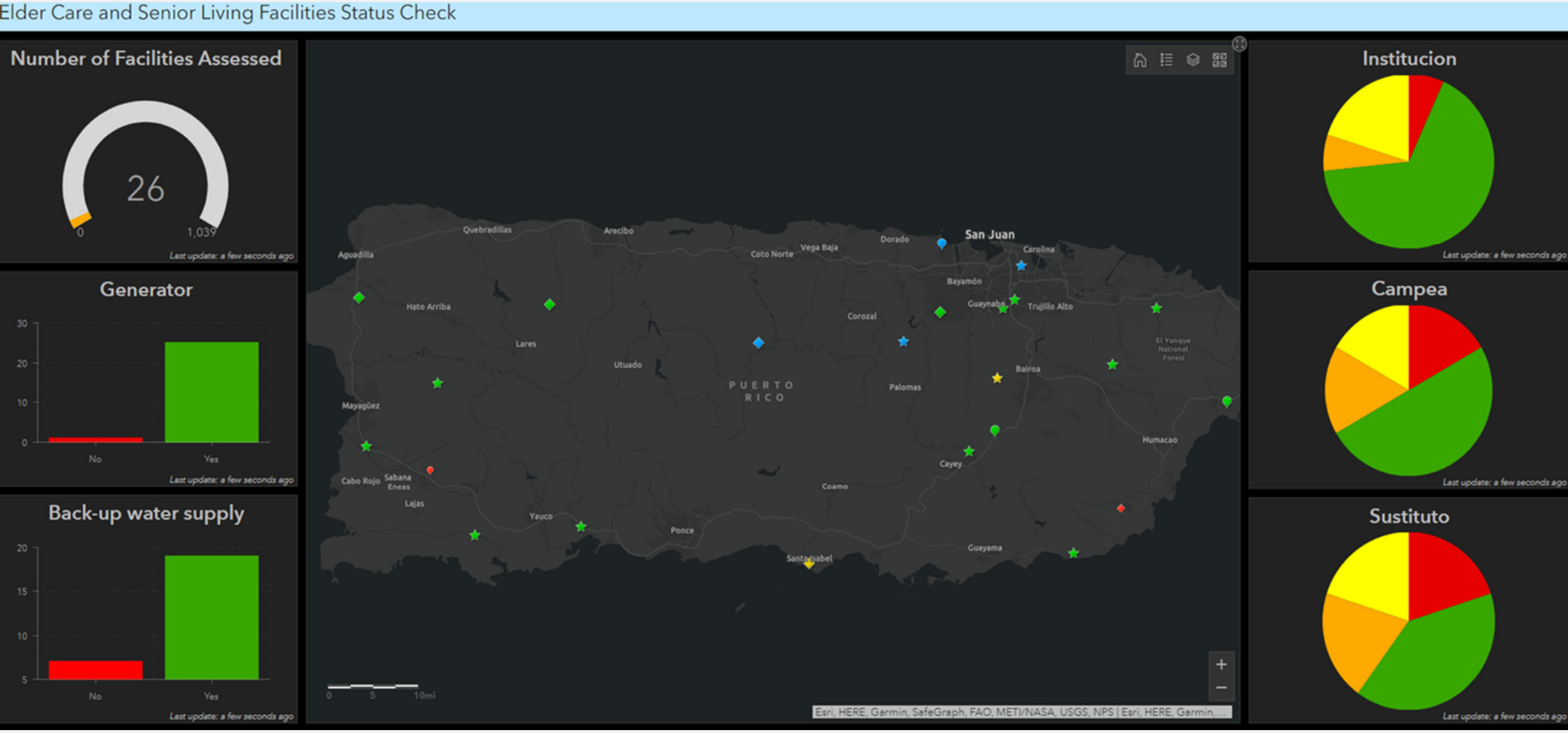
ECSL Facilities Concept – Status Check





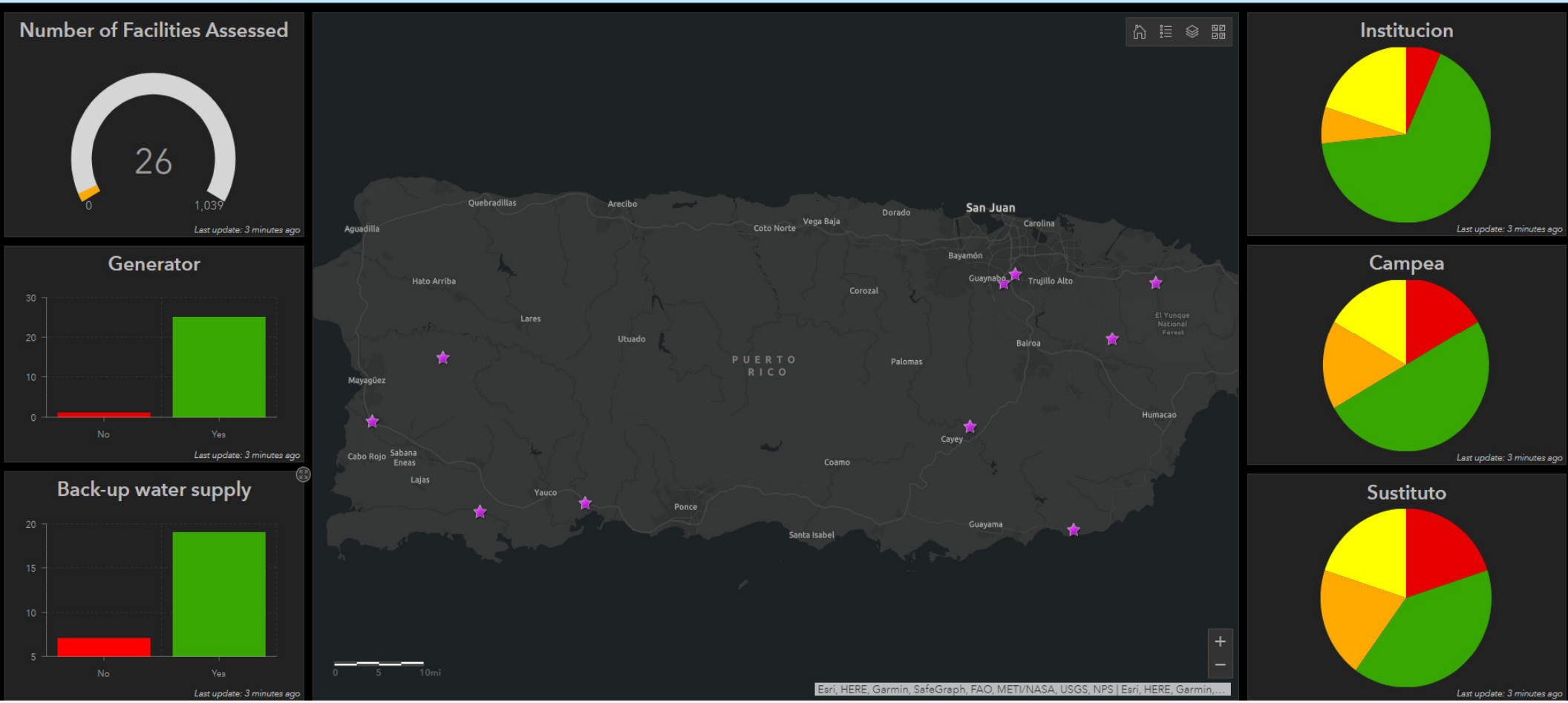


Example Dashboard: ECSL Facilities

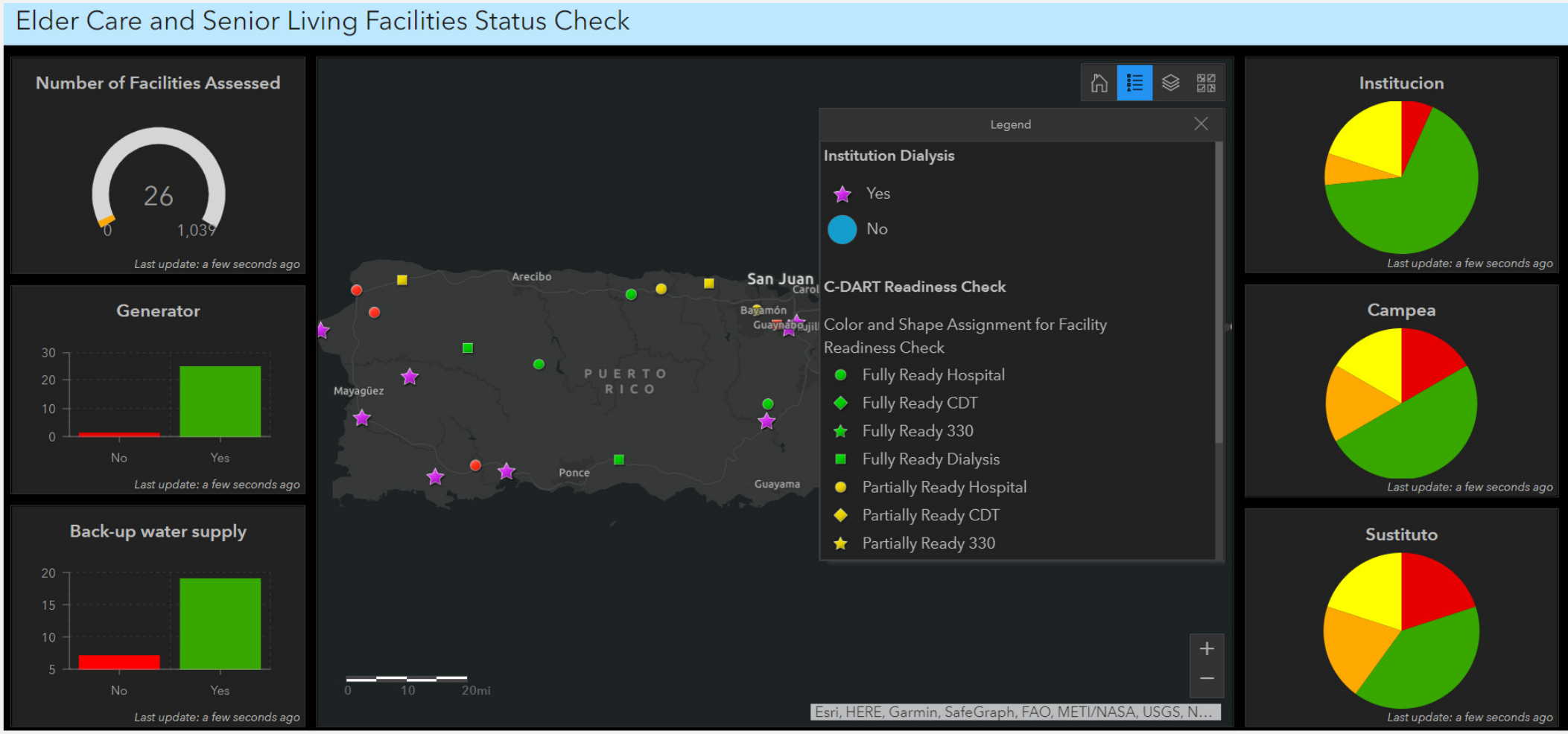


ECSL Facilities: Dialysis Needs

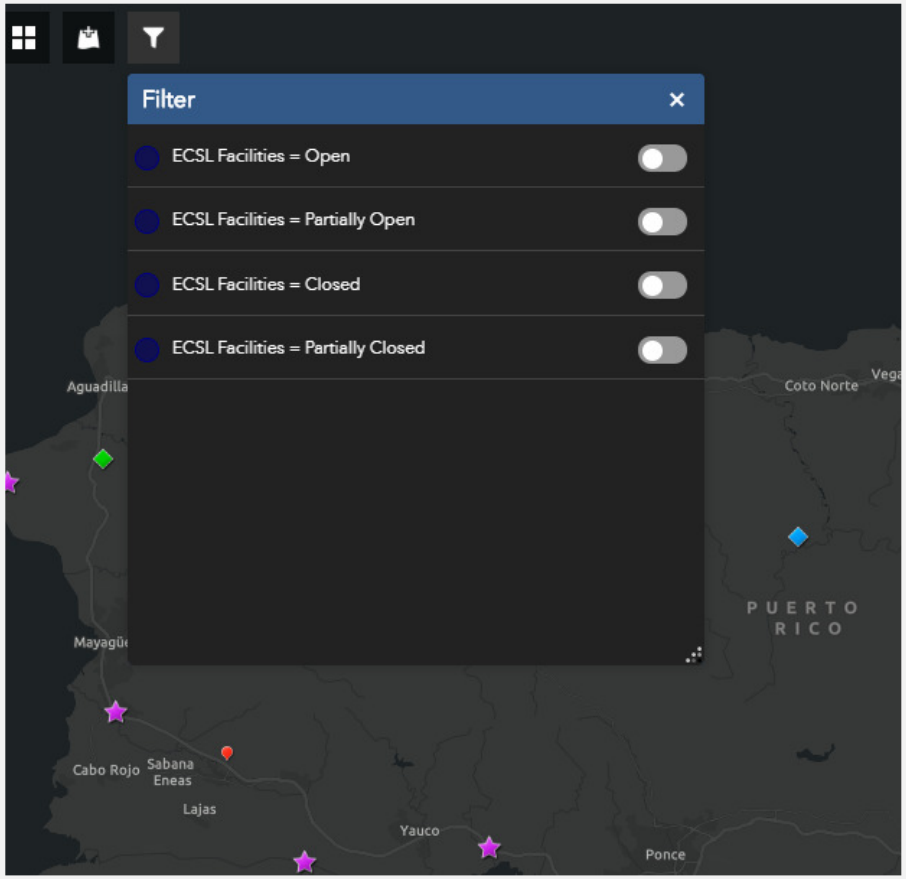
Elder Care and Senior Living Facilities Status Check

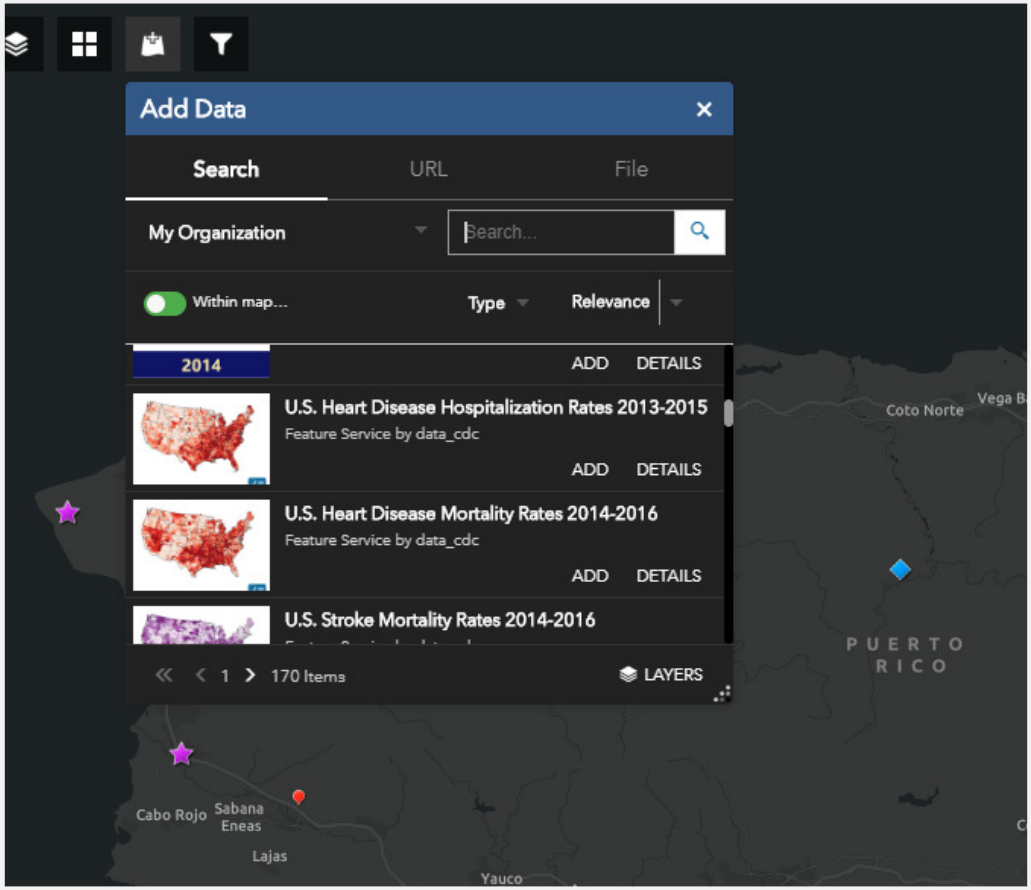


Data Integration: Healthcare Facilities and Dialysis Needs



Data Integration: Healthcare Facilities and Dialysis Needs

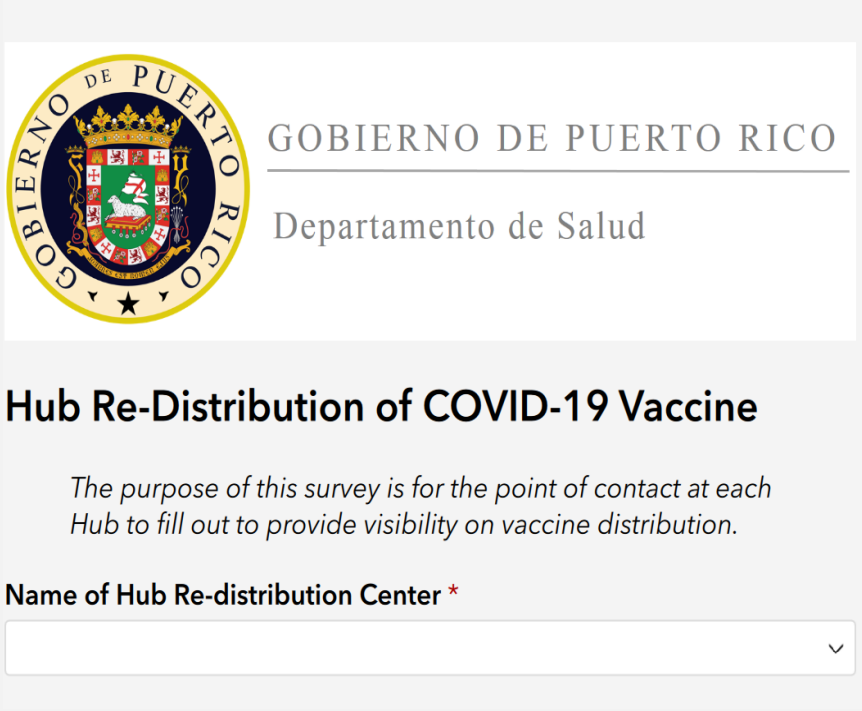




Vaccine Distribution Dashboards

PRDOH COVID-19 Vaccine Distribution Deployment

- **Created forms and a dashboard to help track vaccine distribution and display information**
  - Forms for hub-and-spoke facilities and for the National Guard transporting vaccine
  - Forms to be filled out on phones/tablets and data sent in real-time to the dashboard and database
  - Vaccine data for various population types/capability to edit for various phases of vaccination distribution



GOBIERNO DE PUERTO RICO
Departamento de Salud

Hub Re-Distribution of COVID-19 Vaccine

The purpose of this survey is for the point of contact at each Hub to fill out to provide visibility on vaccine distribution.

Name of Hub Re-distribution Center *

Number of Doses Received *

Temperature of Doses at Receipt in Celsius *

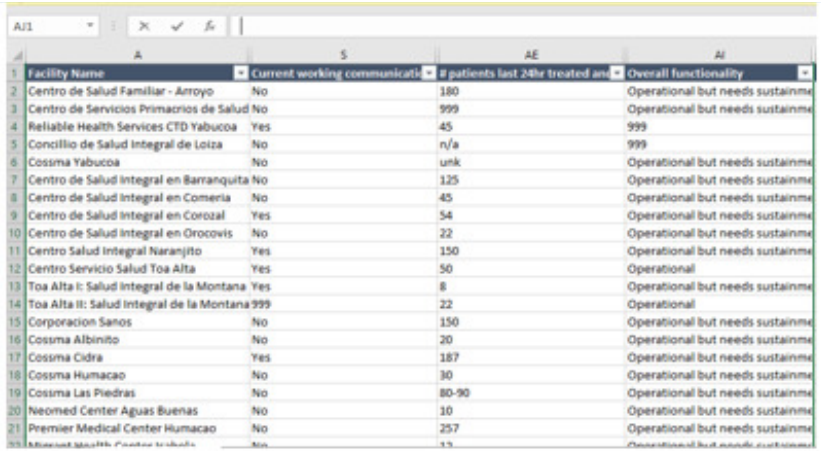
Quantity of Doses Retained at Hub *

Quantity of Doses Sent to Spoke *

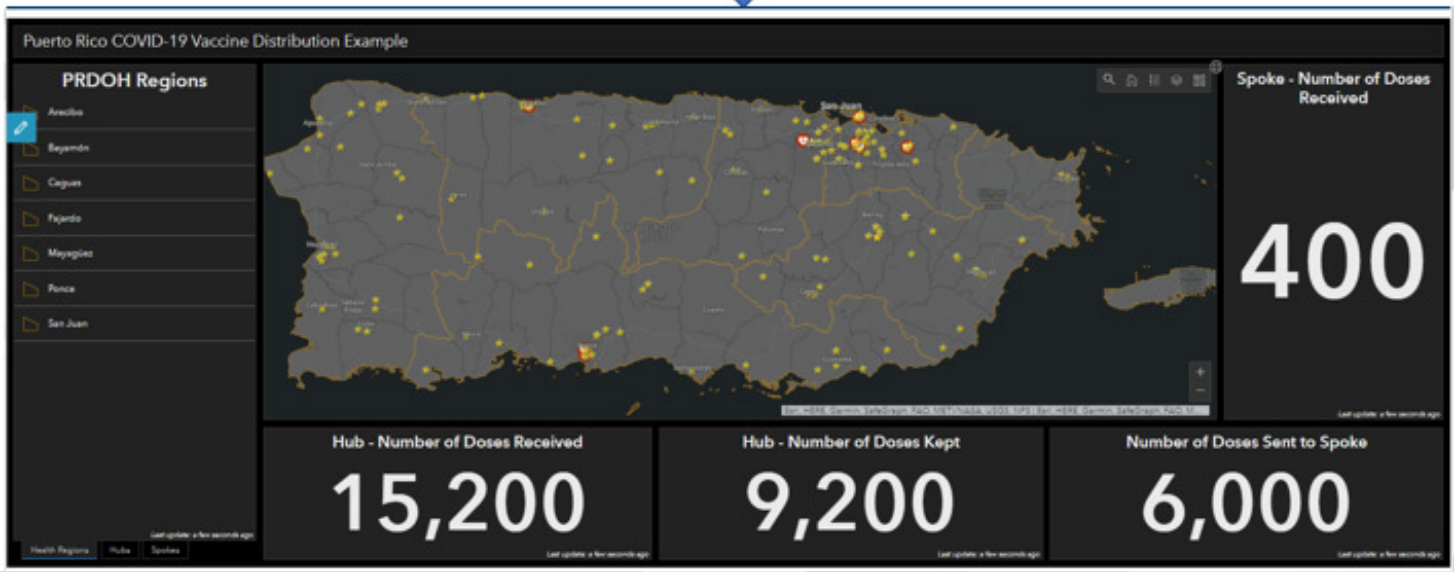
Name of Spoke that will be receiving doses *

Type/Manufacturer of Vaccine

Take a picture of the ID number of the vaccine boxes.



	A	S	AE	AI
1	Facility Name	Current working communicatic	# patients last 24hr treated and	Overall functionality
2	Centro de Salud Familiar - Arroyo	No	180	Operational but needs sustainme
3	Centro de Servicios Primacrios de Salud	No	999	Operational but needs sustainme
4	Reliable Health Services CTD Yabucoa	Yes	45	999
5	Concillio de Salud Integral de Loiza	No	n/a	999
6	Cossma Yabucoa	No	unk	Operational but needs sustainme
7	Centro de Salud Integral en Barranquita	No	125	Operational but needs sustainme
8	Centro de Salud Integral en Comeria	No	45	Operational but needs sustainme
9	Centro de Salud Integral en Corozal	Yes	54	Operational but needs sustainme
10	Centro de Salud Integral en Orocovis	No	22	Operational but needs sustainme
11	Centro Salud Integral Naranjito	Yes	150	Operational but needs sustainme
12	Centro Servicio Salud Toa Alta	Yes	50	Operational
13	Toa Alta I: Salud Integral de la Montana	Yes	8	Operational but needs sustainme
14	Toa Alta II: Salud Integral de la Montana	999	22	Operational
15	Corporacion Sanos	No	150	Operational but needs sustainme
16	Cossma Albinito	No	20	Operational but needs sustainme
17	Cossma Cidra	Yes	187	Operational but needs sustainme
18	Cossma Humacao	No	30	Operational but needs sustainme
19	Cossma Las Piedras	No	80-90	Operational but needs sustainme
20	Neomed Center Aguas Buenas	No	10	Operational but needs sustainme
21	Premier Medical Center Humacao	No	257	Operational but needs sustainme



Adaptability and Utility of CDART

https://www.sandiegouniontribune.com/business/energy-green/sd-fi-sdge-wildfirecaseruling-20171130-story.html

https://commons.wikimedia.org/wiki/File:Teleco_Building_(Haiti_Earthquake_-_2010)_(4322474854).jpg

Benefits of CDART and a WebGIS Platform

- Real-time data entry eliminates manual data entry → increased efficiency and reduced potential for data entry errors
- Immediately available data (after survey upload) in an organized database
- Real-time visualization of survey/assessment completion
- Dashboard visualization allows for immediate critical information flow.
- Management of field teams and visualization of field team locations increasing situational awareness during disaster response

Successes and Opportunities

- Interagency collaborations and support from partners and sectors: FEMA, HHS/ASPR Region 2, HHS/ASPR Field Recovery Office in Puerto Rico, PRDOH, and PRDF
- PRDOH piloted CDART in preparation for Hurricane Barry in 2018
- Opportunity to provide technical assistance to various state and local health departments around the country

Limitations and Challenges

- Overcoming data sharing challenges
- Initial database of geolocations of facilities may be incorrect and will need to be systematically captured (can be done with tablets in the field)
- Need ArcGIS license (at least one overall user)

CDART Progress and Next Steps

Current Progress and Next Steps

- Expand awareness of CDART tools & applications through presentations and highlights on the CDC Public Health Operations for Emergency Information Integration and Exchange System (PHOENIX) website
- Partner with state, territorial, local, and/or tribal (STLT) partners to develop CDART tools for specific disaster response needs
- Questionnaire databank (QdB) with questions available for a variety of scenarios, readily available for use in customized data collection tools
- Plan to develop custom-made CDART application which would be available for download with preparedness and assessment questions for various disaster scenarios and the ability to build customized surveys
- Trainings for partners on CDART tools and usage

CDC Public Health Operations for Emergency Information Integration and Exchange System (PHOENIX)

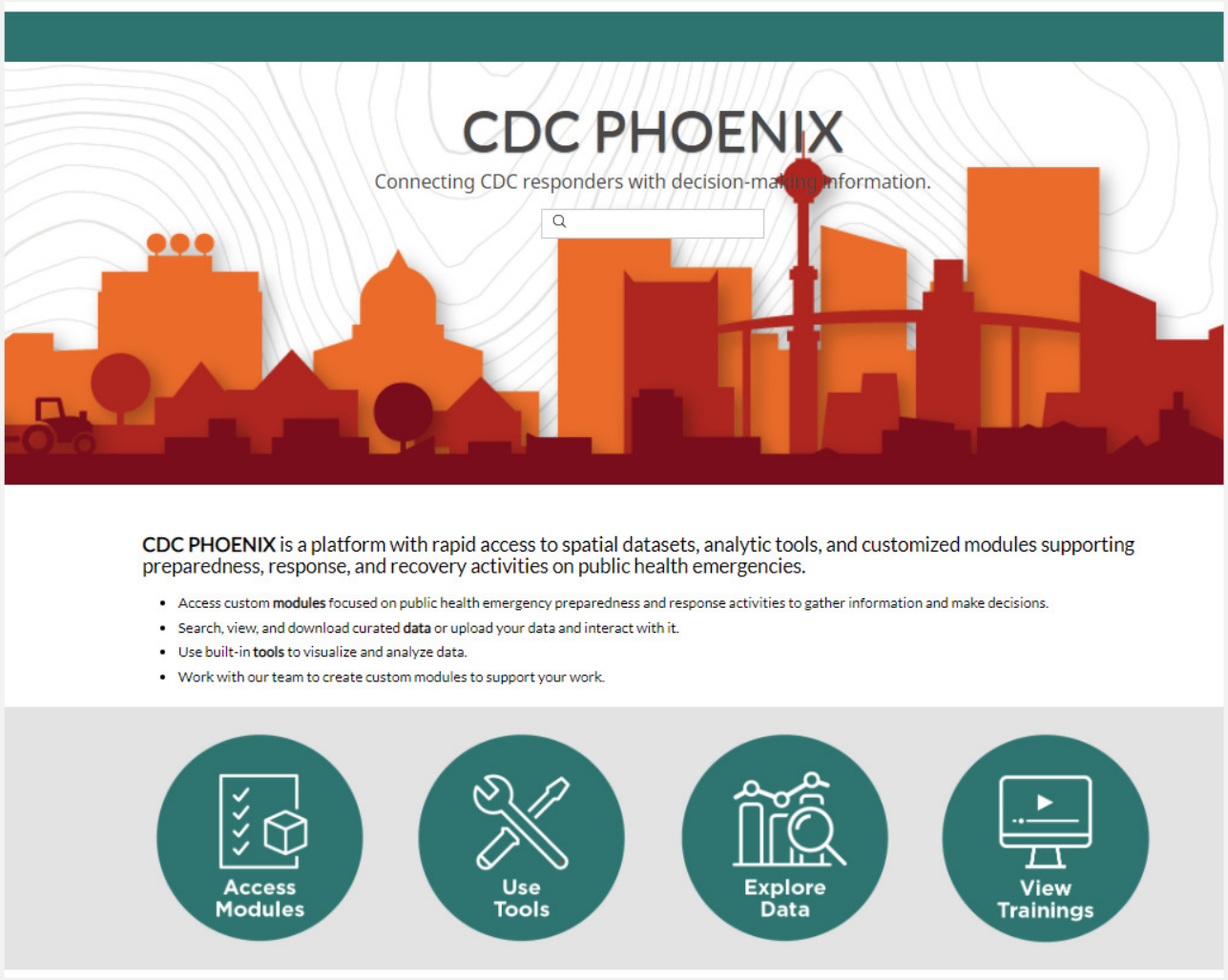
- In the wake of the 2017 hurricane season that included responses to Hurricanes Harvey, Irma, and Maria, CDC/ATSDR received funding to develop a spatial data integration, analysis, visualization, and reporting platform to ensure that CDC/ATSDR responders and preparedness, response and recovery partners have easy access to the most accurate information in near real-time

CDC PHOENIX

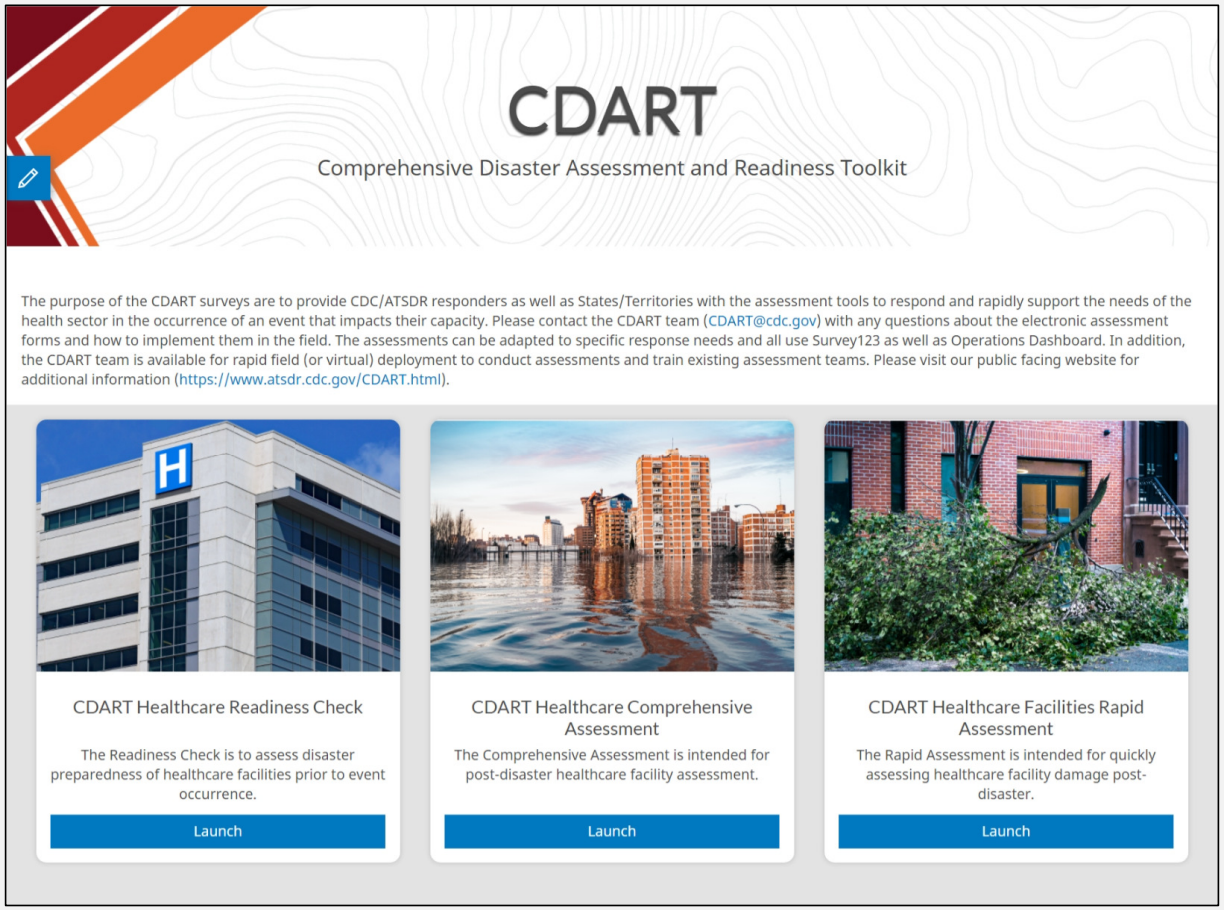
- CDC PHOENIX is the data repository built on the ESRI ArcGIS Portal platform and housed on secure CDC servers
- Features dozens of curated datasets
  - Sociodemographic
  - Environmental
  - Infrastructural data
  - Active data feeds from partner agencies often used for public health emergencies
- Internal to CDC only currently but intent is for public health partners to access

PHOENIX

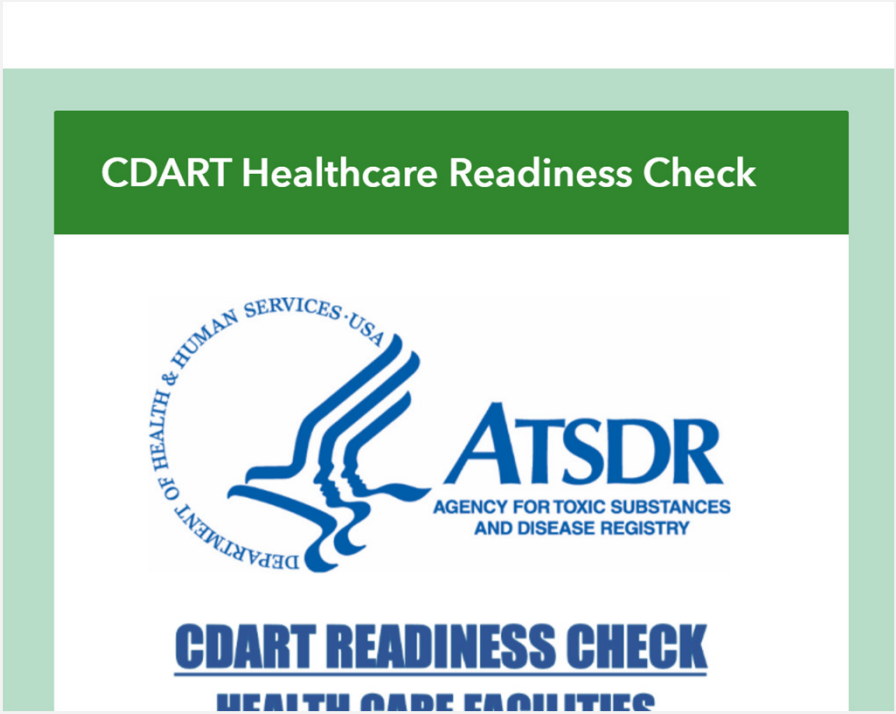
- Home page allows users to access modules, tools, data and trainings

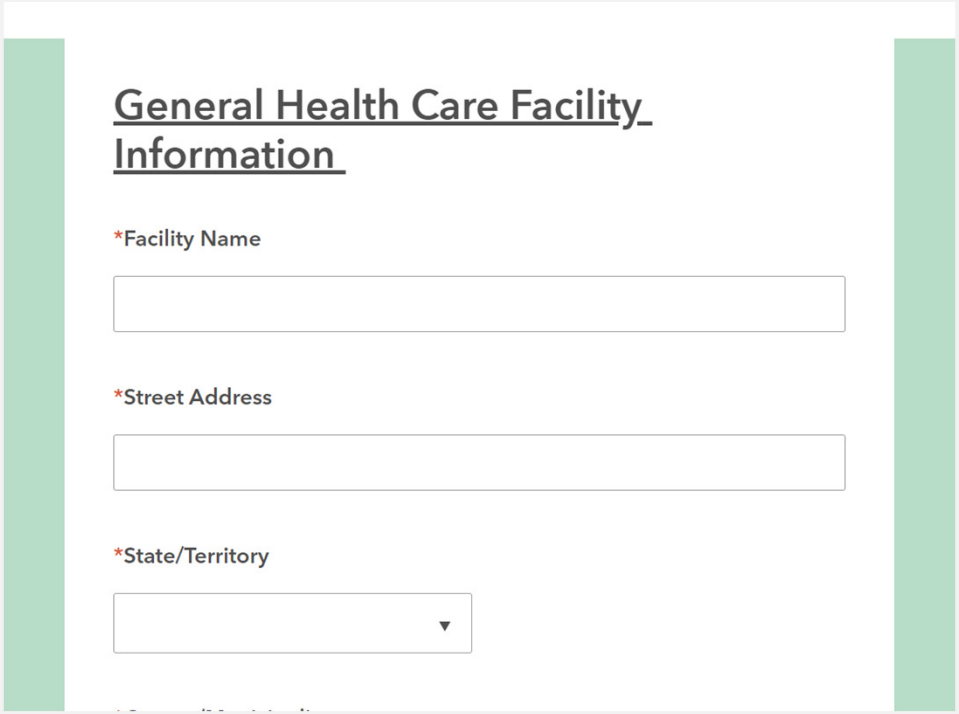


CDART Tools on PHOENIX



CDART Tools on PHOENIX





Questionnaire Databank (QdB) Project

- Federal and state partner-vetted, disaster scenario-based damage assessment question databank (QdB), that will allow rapid development of response-specific facility damage assessments in a systematic way, on an electronic web-GIS platform, at the outset of the response
- As the data from these assessments are collected on tablets/cellphones and georeferenced, the information then becomes readily available for visualization by the decision-making entities of the incident command structure
- Develop core CDART field team capacity from ATSDR staff

CDART/ATSDR website

- https://www.atsdr.cdc.gov/CDART.html

CDART Fact sheets

- HHS fact sheet on CDART [PDF – 387 KB]
- CDART Overview fact sheet [PDF – 66 KB]
- CDART in Puerto Rico [PDF – 408 KB] | Español [PDF – 430 KB]
- CDART PRDOH PRDF Español (Departamento de Salud y Departamento de Familia) [PDF – 409 KB]
- CDART Español [PDF – 69 KB]

Other Uses of the Platform

Other Examples of CDART Team use of Web-GIS

- **Cancer Cluster and Regional Activity Tracker (CCARAT)**

- **Exposure Assessment Operations Management**

ATSDR Cancer Cluster and Regional Activity Tracker

Our Focus

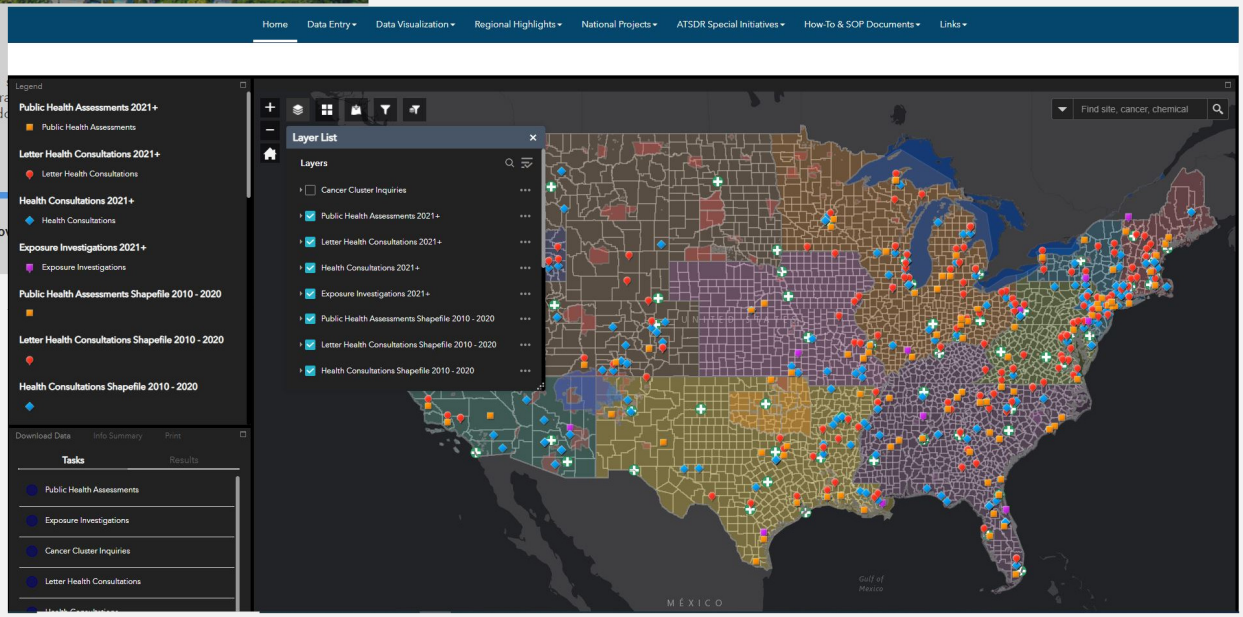
CCARAT is a platform that allows for enhanced response to community concerns related to clusters and exposure to environmental contaminants. This internal tool will afford ATSDR progra to more rapidly fulfill the agency's mission to investigate environmental exposures to hazardo communities.

1 Improve Accessibility

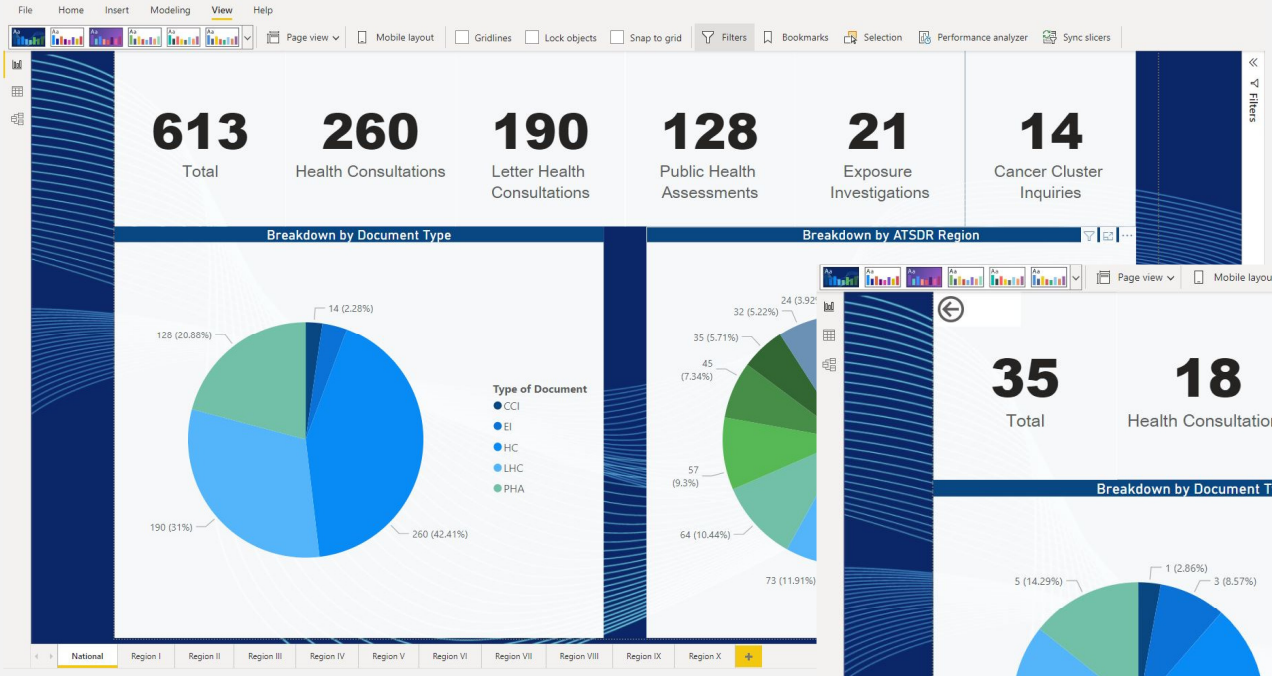
2 Improve Response

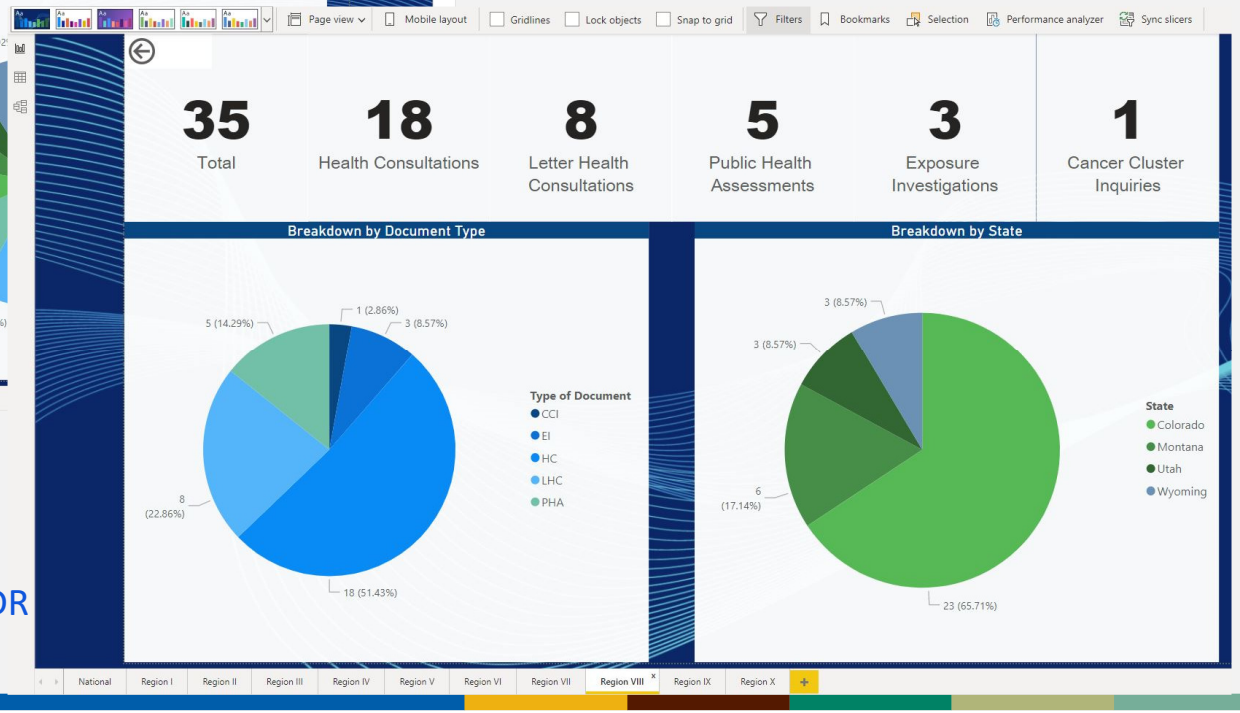
3 Clear Operational Picture

Impro



Use of PowerBI to Graph/Report CCARAT Data*





*CCARAT data represented in PowerBI dashboards is for testing purposes only and does not represent the current status of ATSDR national or regional public health activities.

Exposure Assessment Operations Management

- **Used in the field for logistical purposes only**
- **Used for Team dispatch for enhanced EA participation**
- **No participant information was collected or included**
- **Area was large**
  - Divided into 3 zones
- **>2600 homes were visited in 4 days**
- **Paper forms and paper maps as a back-up**
- **Coordination with ATSDR GRASP program for application development**

S123/Workforce Field Tool

- **Used tablets/smart phones**
  - Can use with or without internet connection
- **Using Survey123 and Workforce app but you will only need to open Workforce as they are integrated**
- **Worked offline and online on tablets and cellphones**

+

Acknowledgements

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Rene Suarez Soto
Elizabeth Irvin

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Ian Dunn
Erica Lehnert
Emrys Scott Murrell
Brian Kaplan

HHS (HSS RSF)
CAPT Elizabeth Hastings
Yvonne Cruz
Judith Torres
CDR Jorge Ruano-Rossil

Questions?

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