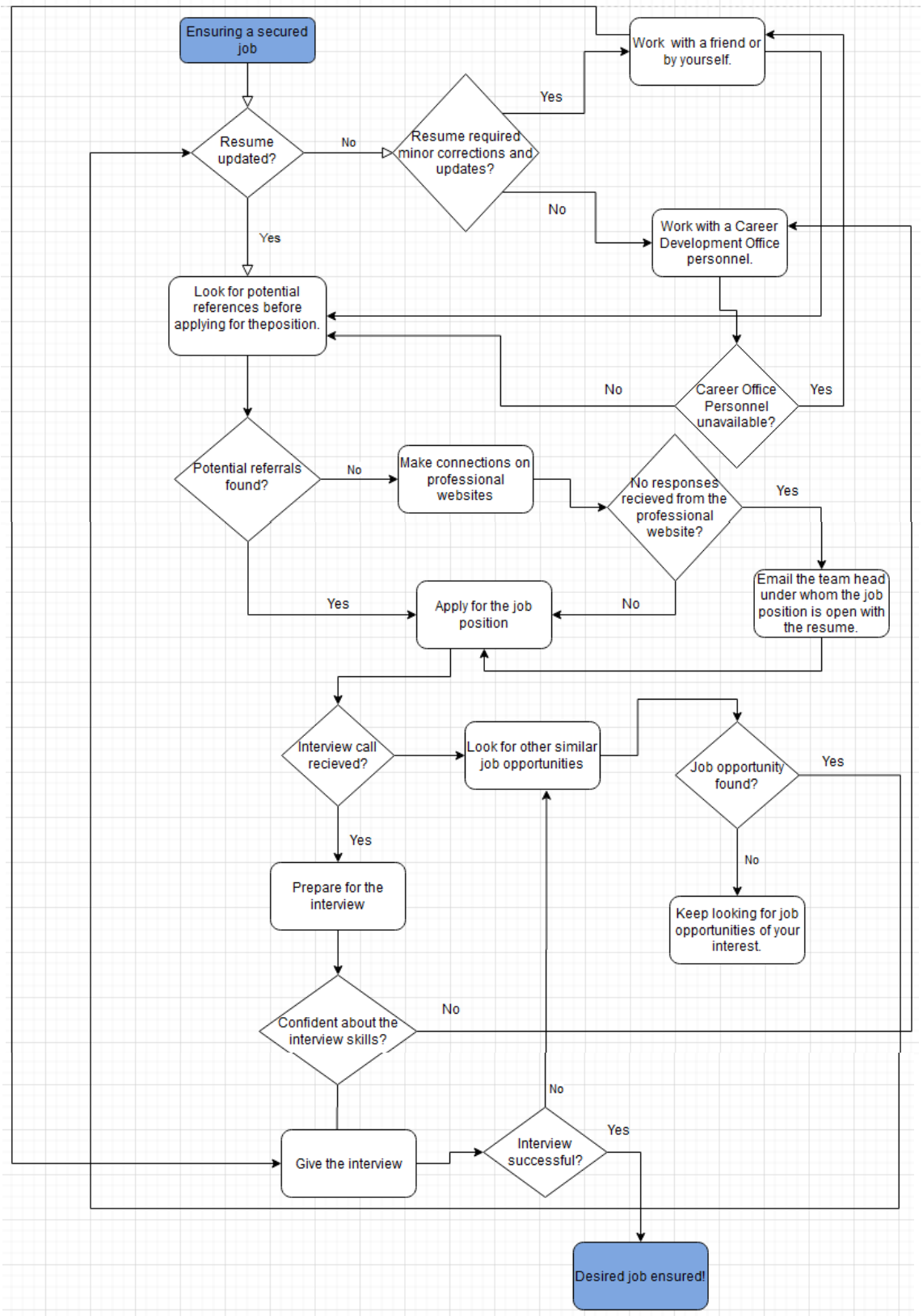
Paper on ICT POAs from Personal to Complex Historical crises (A/B-list/flow charts)

By Tabassum Nisha

Simple flowchart of a personal challenge [PART 1]

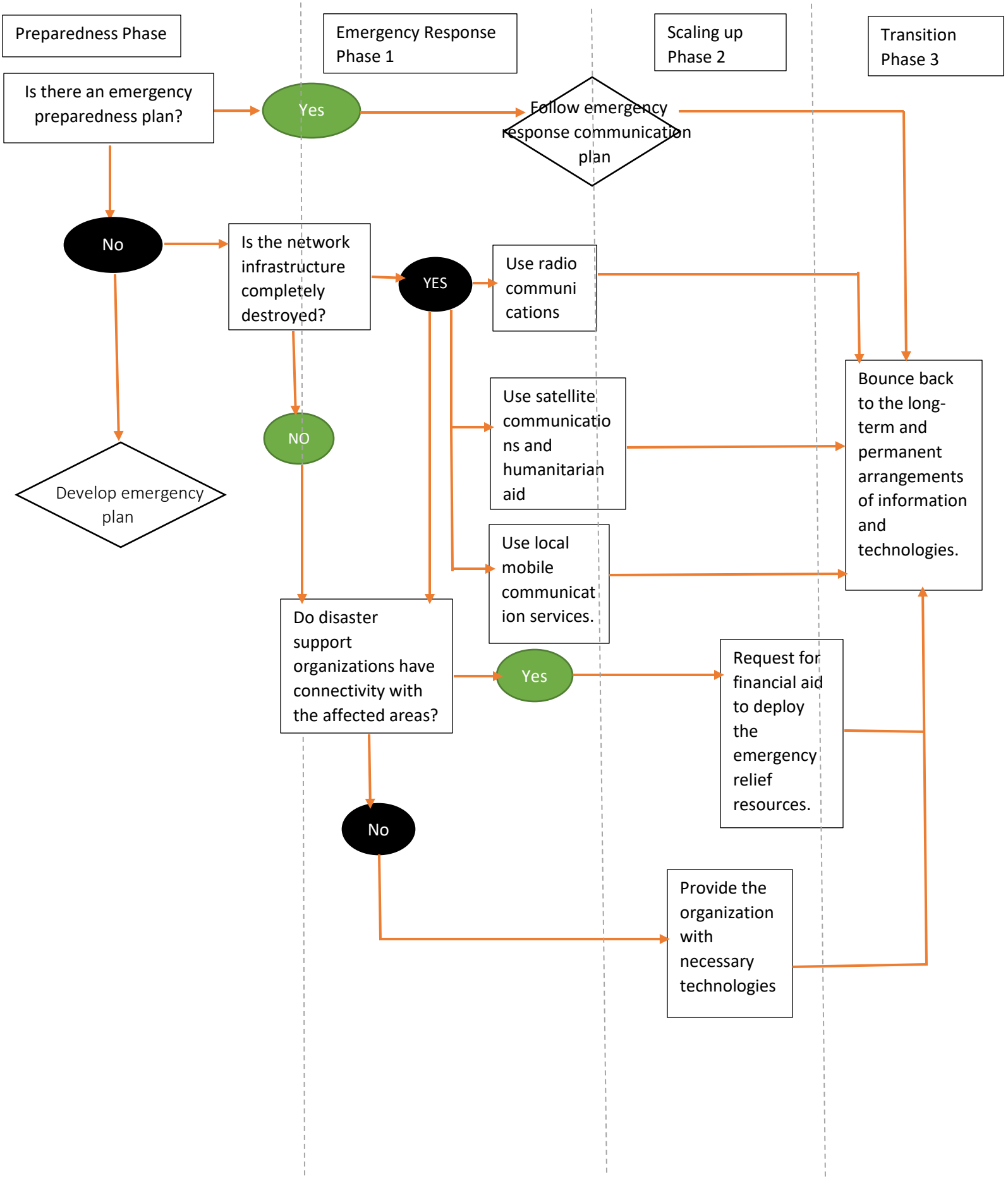


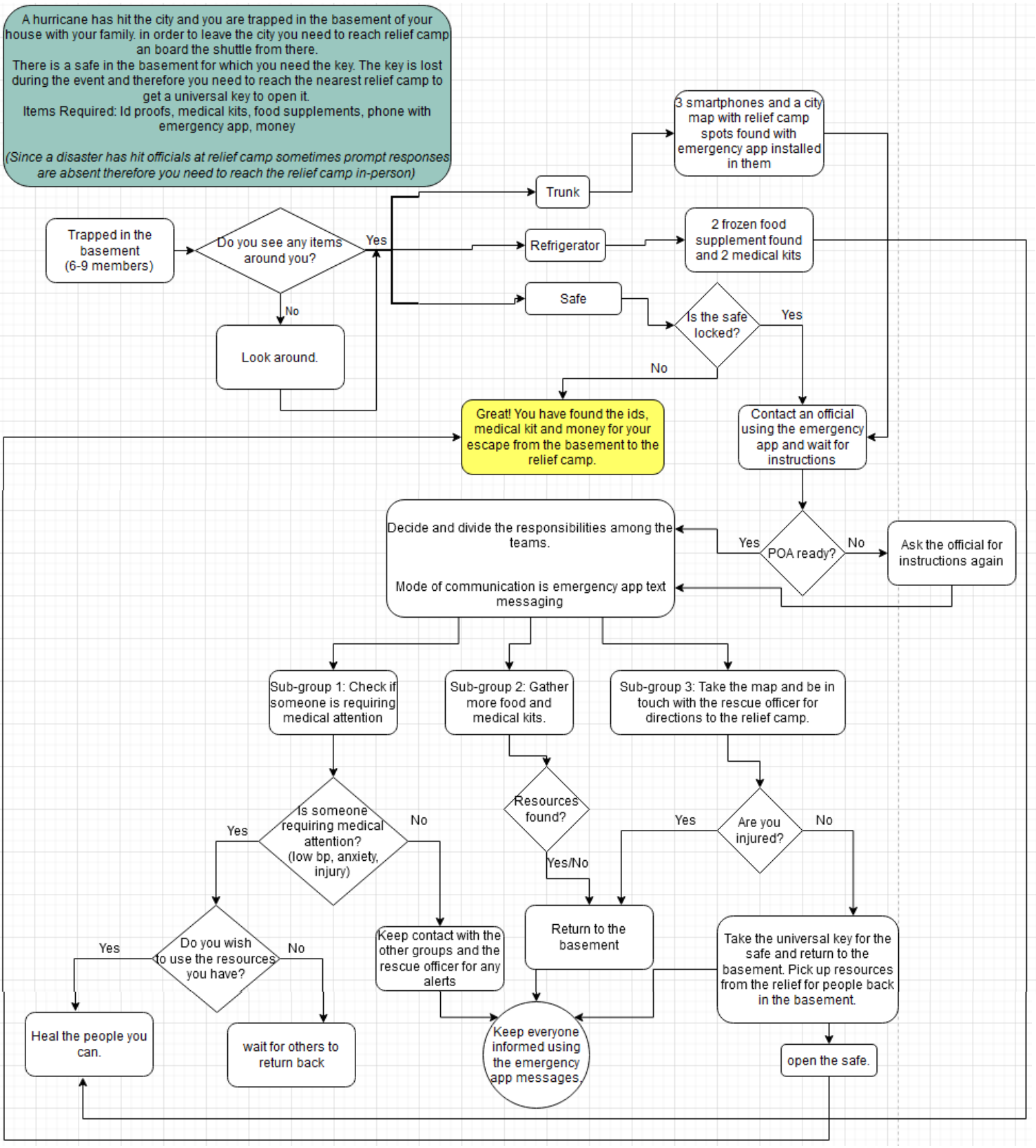
Briefing Document and Disaster Scope and Tech Back-up [PART 2&3]

Country: Caribbean	Cities: Anguilla (UK), Bahamas, Barbados, Barbuda (AG), British Virgin Islands (UK), Cuba, Haiti, Puerto Rico (US), Saint Kitts and Nevis, Saint Martin and Saint Barthélemy (FR), Sint Maarten (NL), Turks and Caicos Islands (UK), United States, U.S. Virgin Islands
Date: Aug-Sep 2017	Name of disaster: Hurricane Irma
Deaths caused: 134	Type of disaster: Tropical cyclone
Rationale behind choosing the disaster:	Hurricanes such as Irma are among the severe and recurrent calamity. Every year several families lose their home and loved ones and yet such a calamity is not well-managed technology wise. It's surprising that even though the calamity is so recurrent technology fails to curb from it's aftermath as well as be less prepared before it hits. I wish to look into details of this disaster and understand the areas for improvement along with taking an initiative to streamline a better plan of action for such a disaster.
Severity of the disaster:	Severe natural disaster (category 5): Irma is the second-costliest Caribbean hurricane on record and an extremely powerful Cape Verde hurricane. It caused widespread destruction across its path in September 2017. Irma was the first Category 5 hurricane to strike the Leeward Islands on record, followed by Maria two weeks later. At the time, it was considered as the most powerful hurricane on record in the open Atlantic region, outside of the Caribbean Sea and Gulf of Mexico. The property damages in various cities ranged from 5%-95% with majority of them being uninhabitable. The damaged ranged in billions and millions. The recovery after the disaster was relatively slow and there was a great loss of revenues and human lives. Thee disaster was followed by a variety of health issues and diseases. Even the foreign countries were moved and provided initial aid.
Aim:	Alert the residents about the incoming hurricane and identify the hardest hit areas thereby direct them towards the shelter homes.
First Responders:	Military officers, FEMA and firefighters
Scope:	Community-wide and regional emergency alert to the residents and safely directly them to the shelter homes.
Key ICT Challenges:	1. Communications networks were virtually wiped out. 2. Cell sites were absolutely destroyed with lack of even basic infrastructure.
Assumptions:	1. Regional damage of the basic network infrastructure therefore loss of connectivity. 2. Property damage leading to loss of shelter, food and power outages. 3. Slow pace of bouncing back to normal hence which makes stable internet connections a challenge. 4. Need of ample volunteer support during the time of crisis.

Plan A:	1. Emergency Alert System: a. The Emergency Alert System (EAS) is a national public warning system that allows the president to address the American people within 10 minutes during a national emergency. The alerts are sent through broadcasters, satellite digital audio services, direct broadcast satellite providers, cable television systems and wireless cable systems. b. The EAS may also be used by state and local authorities to deliver important emergency information such as weather information, imminent threats, AMBER alerts, and local incident information targeted to specific areas. The EAS is also used when all other means of alerting the public are unavailable. 2. FEMA and its federal partners installed a record number of generators to provide temporary power to critical infrastructure while facing significant challenges in identifying generator requirements and shortfalls in available generators. Use of satellite phone which are capable of connectivity even in rural areas for the purpose of communication. 3. The Red Cross called for volunteer drone pilots who had the necessary paperwork and authorization to operate in the impacted areas and for the first time in a one week test used drones to deliver and survey disaster relief needs in some of the hardest hit areas. But delivering supplies is not the only way drones are able to assist with recovery efforts. Verizon and AT & T were able to use drones to determine if equipment was damaged and causing outages, and then respond accordingly. Similarly, some insurers have been deploying drones to allow adjusters to view and assess heavily damaged areas sooner.
Plan B:	1. Work with local network providers and NGOs to re-establish connectivity and communication. Use of mobile network vehicles to aid people connect with their families and loved ones and reach out for help. 2. Airbnb has been able to step in to allow local citizens to help in this situation by waiving its fees and encouraging owners to offer space free of charge to those displaced by the disasters. The website also makes it easy for evacuees to search and find available lodging. The service not only helps evacuees, but also volunteers and contractors coming to the area to help with recovery.
Apps:	1. Zello: The free app functions as a walkie-talkie allowing people to instantly talk with friends, family and community members and set up or subscribe to already existing. 2. An app that does work without internet connection or cell coverage is Firechat. This app truly does work without any internet service by using the Bluetooth and WiFi radios in your phone to communicate directly with other devices within 200 feet also running on Firechat. 3. FEMA also has an app that gives real-time alerts from the National Weather Service along with where to find emergency shelters and disaster recovery centers.

Flowchart: Major Steps/Phases of a Crisis and the Response [PART 4]




A hurricane has hit the city and you are trapped in the basement of your house with your family. in order to leave the city you need to reach relief camp an board the shuttle from there.
There is a safe in the basement for which you need the key. The key is lost during the event and therefore you need to reach the nearest relief camp to get a universal key to open it.
Items Required: Id proofs, medical kits, food supplements, phone with emergency app, money
(Since a disaster has hit officials at relief camp sometimes prompt responses are absent therefore you need to reach the relief camp in-person)
Trapped in the basement (6-9 members)
Do you see any items around you?
Yes
No
Look around.
Trunk
3 smartphones and a city map with relief camp spots found with emergency app installed in them
Refrigerator
2 frozen food supplement found and 2 medical kits
Safe
Is the safe locked?
Yes
No
Great! You have found the ids, medical kit and money for your escape from the basement to the relief camp.
Contact an official using the emergency app and wait for instructions
Decide and divide the responsibilities among the teams.
Mode of communication is emergency app text messaging
POA ready?
Yes
No
Ask the official for instructions again
Sub-group 1: Check if someone is requiring medical attention
Sub-group 2: Gather more food and medical kits.
Sub-group 3: Take the map and be in touch with the rescue officer for directions to the relief camp.
Is someone requiring medical attention? (low bp, anxiety, injury)
Yes
No
Do you wish to use the resources you have?
Yes
No
Heal the people you can.
wait for others to return back
Keep contact with the other groups and the rescue officer for any alerts
Resources found?
Yes/No
Return to the basement
Are you injured?
Yes
No
Take the universal key for the safe and return to the basement. Pick up resources from the relief for people back in the basement.
open the safe.
Keep everyone informed using the emergency app messages.

Resources:

https://www.fcc.gov/news-events/blog/2018/03/19/aftermath-hurricanes-irma-and-maria-resilience-and-challenges-puerto

https://www.firerescue1.com/donations/articles/how-to-help-hurricane-irma-first-responders-vTHQWMQtl8vO49Yk/

https://en.wikipedia.org/wiki/Hurricane_Irma#Impact

https://www.ready.gov/alerts

https://techliberation.com/2017/09/14/4-ways-technology-helped-during-hurricanes-harvey-and-irma-and-1-more-it-could-have/

https://www.fema.gov/sites/default/files/2020-08/fema_hurricane-season-after-action-report_2017.pdf

https://www.wusa9.com/article/news/verify/verify-must-have-communication-apps-during-hurricane-florence/65-593213577