Health Action 2018:
Staying Strong for America’s Families

Afternoon Plenary: Tale of a Medicaid Block Grant:
Notes from the Puerto Rico Health Crisis

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On September 20, 2017 Hurricane Maria hit Puerto Rico as a Category 4

**WINDS:** Devastating to Catastrophic
- 90 to 125 mph with gusts up to 175 mph
- Impacts: Widespread power outages, impassible roads & bridges, structural damage to buildings with complete wall & roof failure.

**STORM SURGE:** Extensive
- 6 to 9 feet
- Impacts: Large areas with coastal flooding, structural damage to buildings, with several washing away. Roads washed out or severely flooded. Severe beach erosion. Damage to marina structures, as well as overturned or broken boats.

**FLOODING:** Devastating to Catastrophic
- 12 to 18 inches with isolated amounts of 20 to 25 inches
- Impacts: Rivers & tributaries ranging out of their banks. In mountain areas, runoff may rage down valleys while increasing susceptibility to rockslides & mudslides. Flood waters can enter numerous structures. Roads & bridges closures. Driving conditions become extremely dangerous.

**MARINE CONDITIONS:** Dangerous
- Seas of 20 to 30 feet with occasional seas of 40 feet or higher
- Life-threatening rip currents & surf conditions.
Power Grid collapse after Hurricane Maria: Puerto Rico

Before Hurricane Maria

After Hurricane Maria

http://www.abc.net.au/news/image/8987766-3x2-700x467.jpg
Hurricane Maria was a catastrophic event

- **Catastrophic events** are rarer than disasters, and they tend to wipe out infrastructure over a large swath of land. “Most, if not all, of the built environment is destroyed” in a catastrophe.

- In addition of damage to property, bridges and homes, roads were blocked by debris and communication towers collapsed.

- Total loss of power grid
- Disruption of communications
- Loss of water filtration systems and water pumps.
- Loss of emergency services communications
- Inoperable hospitals, pharmacies, banks, health facilities
- Scarcity of gasoline and diesel
- Need for cash
“Continuous HIV High-risk Obstetrical Services During a Hurricane”

- Baby Z was born at home on September 25, 2017.
- Her mother is living with HIV and had a prior C/S on November 8, 2015.
- The ambulance never arrived, after the birth, they went to a local health center where the umbilical cord was cut and then she was taken to our hospital.
- This photo was taken on October 24 during her post-partum visit.
- She was on HAART and had undetectable VL, but wanted a repeat C/S for this pregnancy.
Ordenan el desalojo de 70,000

HURACÁN MARÍA

Abarrotados los refugios de toda la isla

ABANDONAN SUS Hogares
The View from Puerto Rico — Hurricane Maria and Its Aftermath

Carmen D. Zorrilla, M.D.

My residents were overwhelmed, not just from physical exhaustion but from our patients’ stories and the difficult decisions we had to make. We are not trained in disaster management, so we had to draw on our own personal and emotional strengths in managing the situation, aiming to provide high-quality and efficient care while maintaining our professionalism, humanism, and empathy.
Impact of Hurricane Maria on the Health Care System in PR

- Complete disruption of Hospital care for more than a month with partial services afterwards
- Complete disruption of Primary Care and Prevention services
- Interruption of all elective surgery, procedures and care, including cancer surgery, chemotherapy for months
- Interruption and disruption of Dialysis treatments
- Interruption of Pharmacy services due to lack of power and internet

- Increased mortality reports initially denied, now under study
- Concerns with outbreaks at shelters (scabies, lice, conjunctivitis)
- Outbreaks/epidemics never confirmed by the state epidemiologist (i.e. Leptospirosis-74 cases)
- Complete disruption of the epidemiologic surveillance systems for vector-borne diseases.
The New York Times
Official Toll in Puerto Rico: 64. Actual Deaths May Be 1,052
By FRANCES ROBLES, KENAN DAVIS, SHERI FINK and SARAH ALMUKHTAR
UPDATED 10:43 AM ET, DEC. 9, 2017

Hurricane Maria

100 deaths /day

50 deaths/day

Average Daily Deaths in September and October

Sept 7  Sept 20  Oct 3  Oct 17  Oct 31

2017

2016

2015
Estimates of excess deaths in Puerto Rico following Hurricane Maria
Santos, A. R., & Howard, J. T. (2017, December 27)
Retrieved from https://osf.io/preprints/socarxiv/s7dmu

- Estimates for total deaths, for September and October 2017 were 2,987 (95% CI 2,900-3,074) and 3,043 (95% C.I. 2995-3,091), respectively.
- The difference between our estimates and the upper 95% CI for the average deaths is **518 deaths for September** and **567 deaths for October**.

**Figure 2: Number of deaths by month and year, in Puerto Rico, 2010-2016**
Impact of Hurricane Maria on mental health

- Emotional aspects of disaster, loss of property, services, health and life
- Disruption of families, need for additional support
- Interruption of mental health services to patients with Psychiatric conditions who need medications and therapy
- New appearance of PTSD
- Reactivation of stress-related illnesses (Zoster etc)
- Exposure to increased violence
- Generalized sense of hopelessness, loneliness, despair

- “I lost everything”
- “I lost everything that was inside my home and all the roof was damaged”
- “Part of the roof of the terrace fell, as well as the door”
- “I lost everything, but at least I’m alive”
- “I have anxiety”
- “I feel anxious, insecure and I have stress”
- “I feel depressed”
- “I have hypertension and the pain has increased”
- “I’m scared and I feel stressed; I feel anxious and depressed”
- “I feel a lot of tension”
- “Sometimes I have burst of crying, I feel desperate and depressed”
“How families were separated and concerns for treatment”

• Twin girls born at the University Hospital on September 18, 2017.
• Their parents are from a town called Arroyo (see map).
• This photo was taken on November 3, 2017 during a visit.
• One baby was discharged home and the other stayed at the NICU.
• They were told to come every day to the hospital.
• On day 126th, they have no power, no running water and had damage to their home.
USNS Comfort

- USNS Comfort was deployed to PR on September 29, 2017 from Norfolk VA
- Arrived October 3, 2017
- Instructions for referrals were not clear among physicians or community
- Protocols for referrals were complex and had to be modified several times
- October 30, 2017 ship in San Juan port (day 40) open for triage
- 4,799 patients evaluated from Ocober3 to November 7 on all 3 military hospital facilities

Patient Capacity:
- Intensive care wards: 80 beds
- Recovery wards: 20 beds
- Intermediate care wards: 280 beds
- Light care wards: 120 beds
- Limited care wards: 500 beds

**Total Patient Capacity:** 1000 beds

Operating Rooms: 12
Slow Progress of recovery after Hurricane Maria (Puerto Rico) [http://status.pr/](http://status.pr/) Day 126

<table>
<thead>
<tr>
<th>Hurricane Maria September 20, 2017</th>
<th>Electricity (% power)</th>
<th>Operational Hospitals (with generators)</th>
<th>Hospitals with Power</th>
<th>Total Hospitals</th>
<th>Cellphone Communications</th>
<th>Running water</th>
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<tr>
<td>Day 6</td>
<td>n/a</td>
<td>n/a</td>
<td>2</td>
<td>2</td>
<td>27%</td>
<td>40%</td>
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<td>Day 13</td>
<td>5%</td>
<td>17</td>
<td>70</td>
<td></td>
<td>53%</td>
<td>45%</td>
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<td>Day 21</td>
<td>11%</td>
<td>45</td>
<td>70</td>
<td></td>
<td>53%</td>
<td>64%</td>
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<tr>
<td>Day 34</td>
<td>24%</td>
<td>49</td>
<td>70</td>
<td></td>
<td>65%</td>
<td>74%</td>
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<tr>
<td>Day 37</td>
<td>26%</td>
<td>50</td>
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<td>66%</td>
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<td>Day 44</td>
<td>37%</td>
<td>56</td>
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<td>Day 48</td>
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<td>59</td>
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<td>72%</td>
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<td>Day 55</td>
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<td>59</td>
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<td>74%</td>
<td>90%</td>
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<td>Day 61</td>
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<td>59</td>
<td>67</td>
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<td>67</td>
<td>68</td>
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<td>97%</td>
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<tr>
<td>Day 126</td>
<td>85%</td>
<td>67</td>
<td>68</td>
<td></td>
<td>97%</td>
<td>93%</td>
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How many days it took to restore 95% of the peak number of customers left without power after major hurricanes since 2004, including Sandy, Ivan, Katrina, Rita, Wilma, Ike and Irene?
http://www.pennlive.com/midstate/index.ssf/2012/11/restoring_power_to_hurricane_s.html

- After **Sandy**, **New York** utilities restored power to at least 95% of customers **13 days** after the peak number of outages was reported. **New Jersey** reached that same level in **11 days** and **West Virginia** in **10 days**.

- The longest stretch to 95% restoration since 2004 was **Louisiana after Hurricane Katrina**, where local utilities had power restored to only **three-quarters of their customers after 23 days** before Hurricane Rita hit and caused additional outages.

- **Rita** left **Texas** customers in the dark for **16 days**; **Katrina** knocked out power to **Mississippi** customers for **15 days**; **Wilma** and Ike knocked **Florida** and **Texas** out for **14 days** each before power was restored to 95% of those who lost it, according to the federal data.
Chaos can bring opportunity to:

- Decreased medication adherence, increased risk of trauma (home repairs), vulnerability to OIs among people living with HIV
- Unlicensed practitioners misrepresenting themselves as MDs
- Increase in violence and theft of resources (gasoline, cash, businesses)
- Mixed messages: “everything is fine”; “this is terrible”
- Unscrupulous contracts and businesses

- Redesign of systems
- Increase in voluntary work
- Opportunities for faith communities and charity organizations to be part of the solution
- Evidence of the need to involve everyone in the planning of future responses to emergencies
- Redirection of resources and support
- Need to reinvent government responsibilities, eliminate an electric power dysfunctional service and monopoly
Humor in social media
Our new normal: long lines, recovery efforts.... and hope
In order to live fully, it is necessary to be in constant movement. Only then can each day be different from the last.

Paulo Coelho
The Zahir