

Surfside Collapse, 2021: A Case Study Report
Wanda Dikiy
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New York University
Global Health Disasters Preparedness and Response
Professor: Dr. Robyn Gershon
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Author: Wanda Dikiy

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Introduction: On June 24, 2021, at approximately at 1:23AM, an oceanfront, 12-story high residential tower, located in Surfside, Miami Beach, partially collapsed.¹ A total of 55 of 136 apartment units, fell to the ground while most residents were asleep. The Champlain Tower South became the site of one of the worse building collapses in U.S. history.¹ 98 people died of all ages and background as a result of the collapse.¹ Search and rescue operations constituted one of the largest and more complex operations carried out by the city of Miami.²

Facts: Members of the Urban Search and Rescue Florida Task-Force-1 (FL-TF1), an experienced team in search and rescue operations which usually responds to the world's major disasters, was immediately deployed to the site to respond to a disaster in their own community.³ FL-TF1 brought in specialized equipment, such as sonar cameras, search dogs, other support teams from around the country, and heavy equipment to aid in the search for survivors.³ Initially, 35 people were rescued from their balconies on the non-collapsed part of the building.¹ The only 3 survivors of the collapse, were rescued from the rubble and transported to a trauma center. 11 others who sustained injuries, were either treated on-site or transported to a local hospital.¹ Initially, 156 were reported missing, but only 98 fatalities were accounted for.¹ The last victim was pulled from the rubble three weeks after the collapse. The cost of the collapse is colossal. Costs associated with county search and rescue efforts total over \$26 million dollars.⁴ This number does not include costs associated with the collapse investigation. In addition, a federal judge awarded 1.2 billion dollars settlement to unit owners and families of those who died.⁵

Epidemiology: There is a major question surrounding the Surfside condo collapse: why did it happened? Federal investigators were sent to the scene of the collapse.⁶ The National Institute of Standards and Technology (NIST) is conducting the investigation, which is set to be completed by the year 2025. The rubble and structure from the building was transferred to a warehouse for analysis. However, structural engineers working on the investigation, have indicated there were significant design and construction problems with the pool deck, including lack of slopping of the pool deck which allowed water intrusion.⁷ Miami-Dade building code regulation, requires buildings nearing their 40-year mark undergo building recertification. Records from the Champlain Tower South Condominium association showed that the building association had hired a consulting group to conduct a building assessment in preparation for the recertification. The structural engineers who performed the assessment provided a report dated October 28, 2018.⁸ Findings from the report found significant structural damages to the building's concrete slab under the pool deck.⁸ Waterproofing under the pool deck were to blame, according to the report.⁹ Recommendations from the report included initiating immediate repairs on these structures. Residents also reported 'trembling' when a new high rise was being built next door. As well as visible issues, such as flooding and exposed concrete slabs in the parking garage under the building, and cracked concrete on some balconies. Repairs began on the building's roof 3 years later from the date of the report. According to the building association, the 2018 report did not warn that Champlain Tower South was at risk of collapse.

Management of the Event: The very first responders on scene after the collapse, reported that the search for survivors would need substantial number of resources beyond the local capabilities. It took almost a full day for Florida Governor, De Santis, to declare an emergency for federal assistance to be deployed to the site, even though the federal government was already ready to assist. Within hours of the disaster, FEMA Urban Search & Rescue (US&R)

had put multiple task forces on alert for deployment to the Surfside site.¹⁰ Many in the community questioned if the delay in issuing the disaster declaration, resulted in additional fatalities. However, once resources were on the ground, local (represented by the Miami-Dade County and Surfside mayors), state, and federal government officials collaborated and provided the community with assistance. First responders worked 24 hours per day in search for survivors, despite encountering many difficulties that affected the pace of the operation. One was concerns over the stability of the still-standing section of the building, and the risk it posed to rescue teams (the remaining portion of the building was demolished by controlled implosion on July 4th). In the initial hours after the collapse, a fire within the rubble had to be extinguished before rescue operations could continue. Other natural elements, such as rain, lightning, and tropical storm Elsa also added to the delays of the operation. Two weeks after the search and rescue operations began, teams transitioned to the recovery phase of the operation.

Communication: In the immediate aftermath of the collapse, there was confusion about the number of people unaccounted for. At first, the number expected seemed to be higher than what it actually was. This discrepancy created some confusion, which was aggravated by the slow finding of victims within the rubble. However, local officials made sure to provide frequent announcements and updates to the general public and families of the victims. Florida Division of Emergency Management activated a call center to provide resources for victim's families and the community, which included missing persons registration, mental health assistance, and accommodations for displaced families.²

Summary: The Surfside collapse was a very tragic event that could have been prevented. There were inadequacies in acting on the urgency with which repairs to the building needed to be conducted. Even though residents were reporting significant issues that impacted their safety and quality of life, lack of imagination that a disaster of this magnitude could happened, resulted in years-long delays. This disaster also created trauma and anxiety for those directly affected, as well as for others in the community who live in similar buildings.

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