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BRIEF PROGRAM REPORT

The Response of an Assertive Community Treatment Program Following a Natural Disaster

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ABSTRACT: A newly forming model treatment program for seriously mentally ill adults was dramatically affected by a natural disaster in September 1989. Hurricane Hugo rendered the offices of the Assertive Community Treatment Program uninhabitable, its vehicles marginally driveable, and its resources virtually nonexistent. In the three months following the storm, however, not a single psychiatric rehospitalization took place. Although the authors cannot claim that the program model was solely responsible for this outcome, this paper illustrates the service system elements that contributed to the program's effectiveness in the wake of one of the nation's most severe natural disasters.

INTRODUCTION

Published reports of the response of communities, including mental health agencies and practitioners, to a natural disaster have focussed mostly on interventions designed to address the general population (Freedy, et al., 1992; Freedy, et al, in press; Raphael, 1986). These reports describe interventions designed to educate the general public about expected human response to disaster and to facilitate access to treatment and services (Austin, 1992; Freedy, et al., 1993).

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Mental health problems such as anxiety, depression, and Post-traumatic Stress Disorder (PTSD) have received much attention in the disaster literature (Breslau, 1991; Cook, et al., 1990). Disorders such as schizophrenia and bipolar affective disorder are mentioned in the disaster literature less frequently and only in the context of crisis intervention and emergency psychiatric services (Zealburg, 1990; Zealburg & Puckett, 1992).

There is relatively little in the literature on the effect of natural disasters on seriously mentally ill (SMI) populations or on the response of service delivery systems to the care of identified psychiatric patients before and after a natural disaster. We present descriptive information on the impact of Hurricane Hugo on a closely followed SMI population and on the response of a service delivery system, Assertive Community Treatment (ACT), to the care of these patients before and after the storm. ACT is the most intensively researched out-of-hospital service delivery system for the SMI psychiatric population with 5 rigorously controlled studies published (Taube, et al., 1990) and many others underway.

BACKGROUND

In 1987, the Charleston/Dorchester Community Mental Health Center, 1 of 17 centers operated by the South Carolina Department of Mental Health, established the On-Site ACT Program as part of a major statewide effort to improve community support programming available to individuals with chronic and severe psychotic illnesses. Patients enrolled in the On-Site ACT program were high utilizers of centralized inpatient facilities who displayed evidence of poor coping skills, increased vulnerability to normal life stressors, and an inability to manage the demands of independent living. In addition, these individuals had histories of being non-responsive to traditional out-patient treatment services.

The mission of the On-Site ACT program was to replicate the Program for Assertive Community Treatment (PACT) founded in Madison, Wisconsin (Marx, et al., 1973; Stein, et al., 1980) and then continue to serve as a demonstration and training site for future ACT programs in the state of South Carolina. When Hurricane Hugo struck in September, 1989, the On-Site ACT Program had been in existence only 19 months and was still in its formative stages, focusing its efforts on interpreting the key concepts and principles of the model PACT

program and attempting to create a program that closely resembled that model.

SERVICE PRINCIPLES

On-Site clinicians are conscientious about ACT principles (see Table 1), believing that differences they can make in the lives of clients hinge on their ability to translate their understanding of ACT concepts and principles into day-to-day care and treatment activities. Key concepts of ACT, such as maintaining an interdisciplinary staff to serve as the focal point for all treatment and rehabilitative needs of clients, providing highly individualized assessment and treatment planning for each client, aggressive follow-up for treatment resistant clients, and delivering supportive and palliative services on a permanent, perhaps life-

TABLE 1

ACT Principles

Organization and Delivery of Services	*Treatments and Services Provided*
24 hour availability, 7 days per week	Aggressive, closely monitored pharmacotherapy.
Assertive outreach and in-vivo treatment	Education about illness and symptom management.
Staff involvement in all aspects of client's life (i.e. daily medication deliveries, financial management, residential stability)	Long-term clinical relationships.
Individualized treatment between patients and within patients over time.	Liaison to hospitals, general health care providers, social service agencies, law enforcement, family, landlords, etc.
Team is primary provider of all services.	Assistance with basic needs (food, shelter, clothing) and assistance with instrumental functioning (activities of daily living, etc.)
Team provides continuity of care and caregivers across area and across time.	

time, basis cannot be compromised if the staff expects to significantly impact clients' quality of community life.

Probably the single most critically important element, continuous treatment, involves a commitment on the part of the program to serve each client throughout the course of his or her life. Since patients are never "graduated" nor "fired" from the program, it is natural for the team to think in terms of all life events as potential learning experiences. In short, continuous treatment means learning to live in the world, celebrating accomplishments, and weathering storms. In the case of Hurricane Hugo, the storm to be weathered was a literal one.

"Doing whatever it takes" to help patients stay out of the hospital and improve quality of life in the community, a core component of PACT, is a motto that On-Site adopted early in its history. It is also a theme that served as a central guiding principle when Hugo struck the state of South Carolina.

DESCRIPTION OF PATIENT POPULATION

In September, 1989, 47 patients were enrolled in the On-Site ACT program. They ranged in age from 18–59; the average age was 37. Patients had principal DSM III-R diagnoses of schizophrenia, schizoaffective disorder, or bipolar disorder. Each patient had a history of high rates of utilization of centralized psychiatric hospital services or persistent and largely untreated symptomatology. Many patients (20 of 47; 42.6%) were also identified as abusing drugs and/or alcohol. Of the 47 patients, 61.7% (29 of 47) were men; and 40.4% (19 of 47) were African-American.

Program enrollment began in February, 1988, and continued at the rate of approximately 3 patients per month. To calculate hospitalization usage, each person's in-patient hospital days were counted from the date of their individual enrollments and dated back five calendar years. This group of patients represented a total of 19,209 in-patient hospital days in the five years prior to enrollment in the program (average of 81.74 days per year; 6.81 days per month). At the time of Hurricane Hugo, as detailed in the quarterly report for the period ending 9/30/89, post-enrollment in-patient hospital days totalled 593 (432 at state hospital facilities and 161 in local beds; a 90.7% reduction). An average of 1 psychiatric re-hospitalization took place each month from February, 1988 (when the program began) through August, 1989 (the month prior to the storm).

Had we been asked to predict how a natural disaster of Hugo's proportions might affect these data, we'd have guessed in favor of increased

frequency of rehospitalization, increased lengths of stay, and in general, an overall decline in the apparent effectiveness of the program. Given the overall patient profiles of vulnerability to normal life stressors and impaired problem solving abilities in daily life situations, this would have seemed reasonable and easily defensible.

As it turned out, however, not a single psychiatric rehospitalization took place until December, 1989, three months after the Hurricane. We were especially concerned with two patients who had been newly discharged from the state hospital (one 10 days prior to the storm and the other on the *actual day of the storm*) and were not well known to On-Site staff.

In the aftermath of Hugo, we wanted to examine the impact of the event on the patient group and the response of the service delivery system.

ON-SITE MEETS HUGO

On-Site provides around-the-clock and continuous (long-term) direct services for seriously mentally ill (SMI) adults. On-Site clinicians can be found teaching skills in grocery stores, at bus stops, and in job settings. Doing "whatever it takes" may involve, for example, meeting with a potential employer or the dean of academic studies at a college to advocate for opportunities, attending AA meetings with patients, or helping someone select an outfit to wear to a wedding. No two days at On-Site are ever the same and the hours of operation are anything but usual. And if this statement were not true before Hugo's arrival, it certainly would have been true afterwards.

The On-Site daily routine is structured to ensure that a group of ten clinicians can operate interchangeably among 120 patients over time, making decisions that are consistent, and acting as deliberately and predictably as possible. Staff rely on a number of operational strategies: specific meeting times during the day; an evolved system of information flow that includes cardexes and contact logs, pagers, vehicles, files, phones; the ability to travel to make daily medication deliveries and crisis intervention contacts; and maintaining patient support items such as budget folders, spending money envelopes, and pre-allotted cigarettes for patients learning to better manage their smoking habits. Hugo stripped the program of all these routines and resources.

On Wednesday, September 20, 1989, as it became apparent that the SC coastline was a likely target for the storm, on-duty staff gathered briefly to re-evaluate the day's assignments and activities. Easier decisions involved canceling certain social outings and out-of-town excur-

sions. More difficult decisions involved plans for essential program functions such as daily medication deliveries, grocery shopping trips, and medical appointments. Mini-teams were formed to ensure that essential tasks would be addressed swiftly and thoroughly. Nurses, for example, were assigned the task of transforming the daily medication contact system into a weekly pill-minder format. A "living skills" team assisted patients in basic hurricane preparedness activities such as shopping for candles, batteries, flashlights, bottled water, and canned goods. Other staff worked on a patient composite containing information regarding current medications, which was distributed to the On-Site team and to other clinicians who might come in contact with the patient in anticipation of post-storm psychiatric emergencies.

As the day progressed, On-Site staff and patients joined the rest of the Charleston community in the sobering realization that Hurricane Hugo was not likely to miss us. Our pace was swift as staff hustled to meet the needs of patients while simultaneously considering and planning for their own needs. A late afternoon meeting of available on-duty staff addressed a number of issues, including the necessary balance between personal and professional responsibilities. By pooling resources and communicating needs, staff was able to establish a plan that allowed each clinician to contribute as much time in the office and in the field as possible. In informal shifts, clinicians went home to care for family and personal needs and, if they were able, returned to On-Site. By capitalizing on the availability of resources, by refraining from expectations that all clinicians could function identically in this crisis, and by respecting each person's individual responsibilities and commitments, the On-Site program discovered an abundance of manpower as afternoon gave way to evening.

Early evening approached, and with it, what we thought were the final tasks of the day: phone contact with emergency agencies to chart the latest storm information, the formation of a core "Hurricane Hugo Team" of 5 clinicians who would be available immediately after the storm, and loading all pagers with fresh batteries. By 10 pm, however, shortly after staff had returned to their homes, mandatory evacuations of barrier islands were in effect and strong recommendations for voluntary evacuations of other designated areas were announced. Clinicians living in these areas reconvened at the On-Site office between 11 pm and midnight and turned their attention to patients' needs. Community shelters opened at midnight and On-Site staff systematically worked their way through a master list of patients, identifying those who were facing the storm on their own. Between 1 and 3 am, patients living in On-Site-sponsored apartments as well as other patients living alone in

independent apartments were contacted in person. These patients were evacuated to shelters in their neighborhoods. Telephone contacts to family members were made for all other patients–just to make certain that suitable arrangements were in place. By 3:30 am, clinicians were returning from the field. Rain had started to fall making travel dangerous; the familiar emergency broadcast signal on the radio was now followed by the ominous phrase "this is *not* a test". Finally, with program patients' needs addressed, staff began to seek shelter with local relatives or evacuate to inland cities and towns. Like the rest of the South Carolina lowcountry, we waited.

AFTER THE STORM

"Preserving the principles of ACT" has become a standard response to colleagues who ask, "why do you suppose that no patients were rehospitalized in the wake of such a devastating event?" Training for clinicians at On-Site, despite its comprehensiveness, had not included the how-to's related to surviving a natural disaster of Hugo's proportions. Along with the rest of South Carolina, we had to discover a way to learn to live in a world that suddenly included the aftermath of a hurricane. In the absence of our essential routine, with no access to telephones, with our resources drastically reduced, having lost use of our office space, we were forced to move into action without a formula, without a protocol for delivering services to a severely ill and exquisitely sensitive population. Staff and patients at On-Site tackled Hugo the way every other psychosocial variable is tackled: thoroughly, assertively, and with a can-do attitude and spirit of curiosity.

On Friday, September 22, two clinicians who lived closest to the program office and who were officially "on-call" for the weekend, arrived to assess the extensive damage incurred at our facility. A salvaged bulletin board was propped up in the water-soaked reception area of the office and served as our initial communication tool. As staff appeared in the hours and days following the storm, they "signed in" and let one another know the extent to which they were able to resume their work.

The least damaged vehicle was set up as a portable office and contained clinical tools that allowed On-Site to begin immediate follow up with program patients. Travel itself was a luxury, however, since many roads remained impassable and it was impossible to predict when electricity-dependent gasoline pumps would be operational again. We also loaded the rear section of this same vehicle with expensive office items that would be easy targets for the looters who were predicted to

scavenge the area. The pile of typewriters, telephones, and adding machines served as a constant reminder that our intention was to carry out the mission of the program. Days and weeks would pass before electricity was restored to the area, and months would pass before we would ever return to our office, but we clung to the hope that returning to a normal schedule was just around the corner.

A decision was made within the first 24 hours to convert a vacant one-bedroom apartment, normally used as a sublet apartment for program patients and vacant at that time, into a temporary office. This "home base" totalled less than 800 square feet, would house thirteen staff, contained a one line residential telephone without long distance capacity, and was nearly 10 miles from our permanent location; it was also considered a valuable resource since alternative office space throughout the entire area was virtually nonexistent. The next three days were spent moving what we could salvage from our permanent location and transporting it to our new site. Staff members and several patients, along with some friends of the program, worked from sun-up to just before curfew hauling small desks, four drawer file cabinets, and other items down three narrow flights of stairs at the former location (elevators require electricity!) and up another flight at the latter. It was worth every bit of effort: the rain had begun to fall again, an already battered and beaten office space was further damaged. We finished our "escape" just as we received word that the entire building was officially ordered condemned and off-limits. Within a week after the storm, On-Site staff were beginning to settle in at the new location.

Our usual service system required further modification to adapt to the post-Hugo environmental demand characteristics. Obviously, assistance with basic needs (food, shelter, clothing) and assistance with instrumental functioning (activities of daily living, etc.) required a hurricane-specific focus. For instance, staff members taught patients how to prepare nutritious meals without the use of electric appliances and how to treat tap water with a very small amount of bleach to make it safe for drinking.

Also, government-imposed curfew required we be off the roads by 7 pm. Weekend field coverage was curtailed to make more staff available during the week. Staff remained available by pager 24 hours a day. Mini-teams of clinicians were deployed to locate patients and determine immediate needs. Medication remained a priority but daily deliveries for a large number of patients became impossible. Instead, a transition to weekly pill-minders was made with more aggressive teaching about the importance of compliance. Daily medication deliveries were made only for patients most in danger of relapse. The program psychiatrist

remained available to patients and adjusted her schedule to best accommodate patients; visiting patients at home when necessary. A nurse was assigned to the parking lot of a local downtown grocery store to give injections of prescribed neuroleptics that were overdue. Because housing options were scarce for *all* local citizens after the storm, we placed special emphasis on helping patients maintain their current living arrangements. Early detection of symptoms became critically important as did providing more aggressive interventions with landlords.

While the team remained the fixed point of responsibility for directing a patient's treatment, more emphasis was placed on coordinating available community resources, including neighbors and family members, to assist in caring for patients. For example, in more than one case we recruited family members to assist with daily monitoring of medication; in another situation, a neighbor agreed to transport a patient to the grocery store and to scheduled doctor's appointments. Not only did patients respond positively to these changes, the treatment team also discovered that the new-found support systems provided a greater sense of normalization for the patients and allowed the team to extend its efforts to other patients who were without similar resources.

In short, after the storm, On-Site responded by simply meeting needs as the needs presented themselves.

ANOTHER POINT OF VIEW

While clinically and programmatically, the professionals fretted about rehospitalizations, PACT concepts, office space, and uninterrupted service delivery, the patients in the On-Site ACT program had more fundamental concerns; a gentle reminder to staff that the true mission of any community support initiative is to meet patients exactly where they are. Lack of electricity, for instance, caused staff to be concerned with nutrition, alternatives to cooking, and heating and cooling of apartments. Patients, on the other hand, were not always bothered by these inconveniences; instead they were more annoyed at the loss of their television sets and radios, citing boredom more pronounced than before the hurricane. On one occasion, before phone coverage was fully restored, staff travelled across the county to visit with a patient they feared might be isolating himself even more than before the storm; instead they found him in his living room, surrounded by newly met neighbors, obviously enjoying himself. His first question to staff was not about his medication or a doctor's appointment; he simply asked, "Did you bring me my spending money and a pack of cigarettes?"

Additionally, some patients demonstrated special competencies and seemed to experience a shift in social role. Normally limited to being in the more dependent, "helpee" role, patients had the opportunity to function as "helper" in many ways. At an apartment complex where a number of patients live in independent apartments, for example, we noticed a usually withdrawn patient emerge as an organizer of necessary activities such as grocery shopping and meal preparation. And as mentioned previously, several patients volunteered to assist the treatment team in packing up and moving to a temporary office location; ordinarily reluctant to participate in structured daily activities, this group worked tirelessly alongside staff at a demanding task and seemed to enjoy the sense of camaraderie of the endeavor.

DISCUSSION

The disaster literature tends to focus on the mental health consequences of a disaster on the general population. Still, researchers have found that there is no clear relationship between pre-existing mental health disorders and subsequent adjustment to natural disaster (Freedy, et al., 1993). Although we cannot say with certainty that the program model itself resulted in the absence of psychiatric rehospitalizations in the three months immediately following Hurricane Hugo, we suspect that the model was a critical variable.

It would be interesting to study other factors which influence hospitalization rates immediately following natural disasters. Could it be that as a result of the storm and the general disruption which followed, hospitals were less available even if needed, or that police and other community service providers were too busy to attend to someone whose bizarre behavior would normally result in hospitalization?

It would also be of interest to consider other outcome measures besides hospitalization. What effects, if any, might the program model have had on frequency of other crisis contacts or law enforcement episodes, perceived family burden, and BPRS ratings, for example? Also, we would like to know how the patients fared in the social environment of the emergency shelters.

The storm affected On-Site in a way that no other variable, up until that time or since, could have. Importantly, the primary question immediately following the storm was not "if" the program could function but rather "how" it would function. The team's attention remained focussed on the critical elements of ACT, the concepts and components

that serve as the building block of an effective community treatment team. In retrospect, Hurricane Hugo was handled as any other major psychosocial stressor in the course of one client's lifetime—with the obvious difference being that in this instance, the stressor affected all patients, and staff as well. Equally important, the system adapted to the event, rather than attempt to remain fixed in function. By preserving the basic elements of an ACT program, it appears the team was able to avert many psychiatric rehospitalizations in the weeks and months following Hurricane Hugo.

The ACT treatment philosophy provided these clinicians with essential guidelines. We hope that the expenditures presented here can be helpful to clinical teams faced with a similar predicament in the future.

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