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Case Report: Managing A Covid-19 Nursing Home Outbreak - the Nurse's Perspective

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ABSTRACT

I am the medical director and sole physician at a 35-bed nursing home on a kibbutz in Western Galilee, in Israel. At the end of December 2020, we experienced an COVID outbreak. 19 residents were infected two of which died. 10 staff members were likewise ill. All recovered. This paper will describe the precautions we took to try to prevent an outbreak, the period of the outbreak including all our nurses' first-person recollection of it, and the aftermath.

Keywords: COVID, Outbreak, Lockdown, Nursing home, Nurses' experience

MANUSCRIPT

I am the medical director and sole physician at a 35-bed nursing home on a kibbutz in Western Galilee, in Israel. Until the end of December 2020, when one of our nurses tested positive, none of our residents had been infected with COVID-19. Because of her diagnosis, two residents who had had a fever the day she received the results were sent for emergency testing, and one was likewise found to be COVID-positive. The following day, all our residents and workers were group-tested, and when the results came back two days later six additional residents were found to be positive. Despite our best attempts, COVID-19 had penetrated our nursing home. We were in the throes of an outbreak [1] in which, all told, nineteen residents were infected. Four of them were symptomatic and two died, including the father of one of our nurses. Ten staff members, including our administrator, likewise caught the disease, and five of them, including one nurse, were symptomatic. All recovered. The literature demonstrates that two categories of nursing home are most commonly associated with outbreaks. While some occur because of mismanagement, [2] well run five-star nursing homes have also experienced outbreaks that have been typically attributed to a high rate of infection in the surrounding area [3]. When communities adjacent to the nursing home have a high incidence of COVID, even a well-run facility faces a higher risk of infection [4]. Once the virus invades a nursing home, it is difficult to prevent its spread within it. Most nursing homes are not routinely equipped to prevent the spread of COVID, firstly because, in most cases, two residents share a room [5]. Secondly, some of the spread begins at a pre-symptomatic stage, before anyone is aware that the virus is present [6]. Thirdly, in addition to the recognized mode of close person-to-person spread, there may well be a secondary mechanism that consists of small aerosol droplets that remain suspended for long periods within closed, well-mixed indoor spaces such as exist in a nursing home [7]. And finally, a fourth explanation that makes sense intuitively, but for which there is only indirect support, relates to viral load: [8] the greater the viral load, the more the virus may be liable to spread. With six infected residents in the first round of group testing, it is fair to presume that a large viral load was present in the nursing home.

TIMELINE

First period

From the start of the pandemic until the outbreak - mid March to Dec 28.

In March of 2020 the pandemic was spreading throughout Israel [9]. All nursing home workers were required to wear masks, gloves and, when indicated, disposable gowns, too. Hand cleaning dispensers were added, and hands were washed more frequently. Workers were additionally asked to take COVID social precautions while at home, an unheard-of request before the advent of this pandemic. Families could visit but were required to wear masks and maintain social distancing. Specific areas of the nursing home were designated for family visits. The nursing home's laundry

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facilities were upgraded, and workers' clothes were laundered on site, instead of being taken home. The approach to the nursing home entrance was modified to provide better control over visitors. Staff members were tested weekly for COVID; residents monthly. Although several workers became infected during these months, all, fortunately, were swiftly identified, and none [10] worked in the home while infectious. There were also occasional absences because of contact with a COVID-positive family member or acquaintance.

Second period: The outbreak

On the evening of Dec 28, 2020, a worker who had felt unwell for several days was notified that she was COVID-positive. The following morning, on December 29, two nursing home residents who had fever were sent for emergency testing; one, who likewise turned out to be COVID-positive, was hospitalized. Routine group testing was initiated. Every three days the Ministry of Health would dispatch a team to test all our workers and residents, and the results, which usually arrived within one to two days, were sent to the individuals themselves, to the administrator and to the nursing home physician. The next test was performed on December 30. When we received the results two days later, six residents were revealed to be positive. The nursing home went into lockdown. The Health Ministry, implementing its policy, transferred all the COVID-positive residents out: those who were asymptomatic were taken to other nursing homes equipped with special COVID wards, while the symptomatic were referred to hospital. Because of simultaneous outbreaks elsewhere in the country there was a backlog, and two days passed before the COVID-positive residents were physically transferred out. In the meantime, they were assigned separate rooms from those who were COVID-negative. Our team worked in capsules or bubbles: some staff members were responsible for treating the COVID-positive residents, while others cared for those who were COVID-negative. Only the nurses, their aides and the administrator were allowed into the nursing home compound. The multidisciplinary team, myself included, was locked out. All social activities for residents that required an outside operator were curtailed, and families were not permitted to visit. Special COVID protection gear was introduced: in addition to gloves and masks, workers were required to wear a disposable gown and face shield and, of course, to wash their hands frequently. Meals were eaten in the residents' rooms. To our dismay, each new round of group testing turned up more positive residents, many of whom had earlier shared a room with a previously diagnosed resident. All told, seven group tests were performed during January 2021. The last COVID-positive result for a resident was received on January 16, and we group tested twice more thereafter. Once each resident and worker had had two negative test results, we ended the lockdown, and staff-member testing was reduced to once weekly. In parallel with the outbreak, the Pfizer vaccine became available, and we began to vaccinate our residents and workers.

WORK ROUTINES DURING THE OUTBREAK

Nurses' aides worked one day on and one day off, allowing a full day of rest. On the days they worked, the aides were permitted to rest in the nursing home in the afternoon. Because of both illness and isolation due to contact with an infected person, we suffered nursing aide staffing shortages. However, as this was not the time to bring in new unqualified workers, we coped without them as best we could. Because everyone chipped in and helped whenever possible, we were able to get through this period successfully. Nurses worked their regular shift routine. Because they, too, were short staffed (two of our nurses were sick, one with COVID) when healthy, they contributed extra shifts. During the lockdown, the head nurse was the only administration staff member present in the home. Our administrator was ill part of the time, and as physician I was locked out. The head nurse was responsible for the daily running of the nursing home, overseeing the work of the aides and enforcing COVID routines.

INVOLVEMENT OF THE ADMINISTRATOR, PHYSICIAN AND MULTIDISCIPLINARY TEAM DURING THE LOCKDOWN

Those of us on the administrative team who were locked out found ourselves in a predicament. As we were not allowed to enter the nursing home, we were limited in what we could do, especially after our administrator herself fell ill with COVID. We did what we could. We maintained regular telephone contact with sick workers and kept in almost daily touch with the nursing homes to which our COVID-positive asymptomatic residents had been transferred. When the administrator recovered from her illness, she visited the two homes in person and communication and coordination with them improved thereafter. Coordination with the Ministry of Health and its ever-changing regulations could be maintained from outside the nursing home by telephone and email. Requests by the staff who continued working inside the nursing home were immediately addressed. The administrator and multidisciplinary staff would bring goodies for the workers, to cheer them up. As physician, I worked by phone and was constantly available for telephone consultations. As I had access to the nursing home program at home, I could still write physician orders, and I also remained in almost daily contact with the families of residents who had been hospitalized. This was particularly important, as hospital wards, which even in better times are not bastions of communication with family, were so overwhelmed with the COVID cases that they were only minimally available to families. In one instance this continued contact helped the three adult children of a 94-year-old resident to decide against allowing their father to be futilely intubated when his condition took a turn for the worse.

PHYSICIAN LEADERSHIP ISSUES

At its peak, our situation was particularly distressing: residents were dying, more and more were being moved elsewhere, numerous staff members were at home with the virus, our COVID-positive administrator had been ill and was in isolation, and our nursing home was becoming depleted as every few days additional remaining residents were diagnosed as infected. These were undoubtedly difficult times. Although I was only a salaried worker, and during the lockdown I was not physically present at all because of the depth of the crisis, I felt an obligation to play a leadership role in guiding our administration, staff, and workers through it. I did find myself influential in providing succor for our administration team, the other workers, residents, and family members. I attribute my efficacy to the following factors:

- The physician as father figure: "The image of the father-figure has traditionally been assigned to the doctor and accepted by him." [10]. A reassuring message from the symbolic father figure of a physician has the potential to be especially effective. Even if, today, physicians take a less paternalistic approach and place greater emphasis on patient autonomy, I believe that, especially in times of crisis - and regardless of the physician's gender - the parental figure of the physician can unconsciously come into play and assuage fears.
- The outbreak occurred many months into the pandemic and by then we were familiar with the natural course of COVID. As terrible as COVID-19 is, for most patients it is an acute illness with a start and stop date, and I knew that for the majority of those infected it would resolve itself. I used this knowledge and my experience of following patients with acute illnesses to assure those concerned that there was every reason to believe that things would get better, both for most individuals and for the nursing home itself. While many members of the public have Google and news access to this information, not everything they read is accurate or easy to interpret. Hearing this same information delivered by a familiar and authoritative figure such as the nursing home physician can have greater impact.

THE NURSES' EXPERIENCES - EXCERPTS

From Nasreen - head nurse

About a year ago, at the beginning of the pandemic, there was a lot of uncertainty and fear. During this most challenging year for me, I was combining work, advanced studies and dealing with COVID. The uncertainty factor dwindled over time with the help of weekly COVID testing, implementation of standardized protection gear protocols and ongoing staff instructions. We, the entire staff, had believed that we were handling things as well as possible, with complete transparency vis-à-vis the families. We had even hoped to be able to avoid an outbreak.

Our big disappointment was with a health worker who came to work even though she did not feel well and she never entertained the possibility that she might have COVID. Once the virus entered the nursing home, despite taking meticulous precautions, we lost control. The timing of the outbreak was particularly disappointing, because we knew that the vaccine was around the corner and with it would come reduced risk. We learned the hard way that there is no simple formula to seal residents in hermetically and prevent them from becoming infected. Initially, I wasn't afraid. At that time, there were only a few infected residents, and I thought that we would get off lightly. I was optimistic that perhaps by the next week we would all get negative (normal) results. However, the more time passed and the number of positive results increased, the more I grasped the severity of the outbreak. At the beginning I felt strong, that I was up to the task and that we would overcome it. However, the more nursing staff became infected, the more I became concerned about not having enough workers to handle the shifts. The restrictive protective clothing was difficult to deal with and interfered with performance. Working inside a stifling gown that gives you the sensation of choking, always thinking of infection control, and frequently changing gloves and masks to prevent further spread was difficult both physically and emotionally. I began coming to work more and more stressed. The nursing home was emptying out. We worried about whether the residents would ever return. Coping with burnout was difficult. I took this angst home and shared with my family my pessimistic feelings especially after our administrator came down with the virus. I felt an enormous responsibility on my shoulders. Regarding our team, it was upsetting emotionally and difficult technically because of workers who had been taken ill and had to remain at home Regarding our patients, it was difficult for the residents who now lacked regular activities. You would enter a room, see the residents suffering quietly, and have nothing to give them other than support for ADL. I could feel the depression that the residents were experiencing. I tried as hard as possible to reduce their sense of isolation by connecting them with their familes through video on a tablet. My hope, my daily request, was to speed up time until we could wear just routine nursing clothes and only have to care for the residents as we did before the outbreak.

From Alaa, who himself became infected and was symptomatic

My parents, my wife and my brother became infected before the nursing home outbreak. As I am a nurse, I had also been treating my infected family members, while observing complete COVID protection. I began the outbreak workdays with a very low energy level. I recall it as an extremely difficult period. We all worked in the shadow of fear - both the aides and the nurses. We didn't know how to contend with the virus. There was a lot of uncertainty. We were in constant touch both with the families and with our doctor. Family concern for the residents increased both the

workload and the pressure on us. I spent a lot of time trying to allay the families' concerns. We were not used to the COVID protective gear - the head visor, the mask and the clothing - to wearing it, taking it off and putting it back on. It's important to put the gear on correctly and in the right order. It was challenging to get all the workers to comply effectively. With regard to relations with the residents: there was an overall deterioration in their emotional state. They lacked even the most minimal contact, such as in the dining room, because they now ate in their rooms. I would go from room to room and feel a heightened level of responsibility for them. I felt as if I were working twice over. I was worried about falls from wheelchairs, because supervision is difficult when residents are in their rooms. Those residents at risk of falling tend to try to get up when they have nothing to do. We encountered a couple of falls, thankfully not serious, but the concern was certainly a source of stress. I was also worried about residents developing pressure sores, because they were not moving around, even though we did routinely perform the designated position changes. In addition, there was more of a burden of responsibility on the nurses because our multidisciplinary team was locked out. In terms of appetite, some of the residents almost stopped eating. Some were angry at us. There is no doubt that their emotional state affected their appetite. When I completed a shift, I would have a deep sigh of relief at returning home. However, I continued to be so concerned and apprehensive about how to plan my next shift that I could not help feeling overwhelmed. The mood of the nurses was labile because of these thoughts, and we would be far more exhausted after a shift than we had been before the pandemic. One evening I found myself with a headache and dizziness. Despite having been meticulously careful with COVID protective gear, my COVID test result was positive (infected). I became ill enough to go to the ER, but thankfully did not have to be hospitalized. On the following days, while in isolation and recuperating, I kept in constant contact with the department, as I was concerned about the welfare of both the workers and the residents. I returned to work after recovering, when I was no longer contagious. I found my colleagues exhausted. I, too, found that the infection had sapped some of my strength. But I felt I needed to contribute my share and help my colleagues who had been working so hard. The return of a no-longer-infectious resident from a community Corona ward increased our workload but gave us hope that we were on the way back to our regular routine. We anticipated that some of our residents would die, but all things considered, we were relieved that in the end we lost only two dear residents. Furthermore, you always hear in the news about young people also dying from COVID. Being young myself, I was grateful that this was not the case with me. At our nursing home I am the designated nurse in charge of infection control. COVID has had a positive effect in terms of mask use and hygiene, such as handwashing. This routine may well have prevented the spread of other infectious agents. Use of masks, to which we all adjusted immediately, may have a continuous positive protective effect, and, who knows, we may find ourselves using masks even after the pandemic is over.

From Abed

Working at a nursing home is challenging enough in normal times. As a nurse, you have a wide spectrum of responsibilities, from caring for residents, managing health aides, coordinating with the multidisciplinary team and dealing with residents' families, all the way to managing acute illnesses. This is not to mention the reality of working in shifts, which is a whole other issue that taxes both mind and body. So, one can only imagine – though in my case I don't have to – the hardships and the added burden of working through the pandemic and then inside the nursing home during the outbreak. First off, especially before the COVID-19 vaccine, you had the legitimate fear of contracting the virus yourself, with all that comes along with it: Getting sick and possibly infecting other family members, especially older ones. I dealt with this at work by following the strict guidelines for wearing personal protective equipment (PPE) and taking the sanitary steps needed to minimize the probability of contracting the virus. At home, I practically quarantined myself, staying apart from my family and living on a separate floor of the house.

Those were some of the practical steps I took. However, there is the psychological and emotional aspect of dealing with the stress of working under the extreme conditions of an outbreak. During the outbreak at our facility, the residents and staff were frequently tested - approximately three times a week – for COVID-19. Waiting for the results was nerve-racking. Residents who were COVID-positive were transferred to designated facilities without our knowing if or when they would come back. Workers who tested positive were obliged to quarantine at home. Of course, this process was emotional, feelings of sadness and worry were at their height, alongside the feeling of loss of control, because you can only do so much to combat this microscopic enemy. In addition, the residents stayed in their respective rooms, with no physical interactions with the other residents or their families. Managing their separation required additional staff members to keep frequent eye contact with the residents. Because of the outbreak amongst the staff as well, we were severely shorthanded. Healthy workers had to work frequent long shifts, up to fourteen hours at a time. And, as a nurse, you have to maintain a balance between the need to do the job properly and the fear of overburdening an already tired staff, while all the time remaining emotionally available to both residents and staff, acting as a role model, helping out beyond my job description, creating a working environment of cooperation and sharing the burden, pushing through your fatigue and lack of sleep. Personally, I dealt with the emotional stress by looking at the bigger picture, keeping in mind that this was a temporary situation, and that my work was important – vital even – to the wellbeing of the

residents. The thought of serving a morally higher purpose, being a part of something bigger than oneself is truly liberating, I reckon.

From Laura (her father, a resident of the nursing home, was one of our two COVID fatalities)

The main difficulty was dealing with the protective gear. I felt as if I were in an asphyxiating vacuum. The second difficulty was that the residents were constantly in their rooms. It was as if the nursing home were dead – all the dynamics and joie de vivre was absent. There was enormous pressure around the testing. When the first positive case was announced, my world fell apart. Until then I had never encountered anything so threatening and horrible, either as an individual or as a nurse. I also had to cope with the outbreak as a daughter: my father was a resident at the nursing home, and he himself became infected. He was transferred out on my shift. The thought passed through my mind that I might never see him again. At the time I didn't give it a lot of thought he was without fever and asymptomatic. Unfortunately, as it turned out, because of COVID restrictions, I never did get to see him again. I was both duty nurse and daughter when I was notified that he had died. It was both strange and sad. At the time, I didn't internalize what was happening. I was exhausted. I just wanted to go away for a few weeks. We did the best we could. Two nurses were ill during this period (one with COVID). Being short-staffed, doing long shifts, having heavy workloads, going from room to room, changing protective gear, not seeing the residents (because they were in their rooms), we found it difficult to supervise them. This physical and emotional stress, the like of which I had never before encountered, continued even after the residents began returning. Having to deal with residents who had deteriorated after being away was most challenging. We had sent them out to protect them, and now many returned in a worse state - with pressure sores, new medical problems and emotionally downcast. There was a point at which I thought that the residents who returned would never improve; there was a great sense of responsibility. I felt as if I was on a battleground. The stress was enormous. Thankfully, eventually all of those who returned improved dramatically. After the routine had more or less returned to normal, it hit me. I became very ill and was almost hospitalized. Shortly afterwards, I took a holiday break, and now I feel much better.

Third Period: Post Lockdown

Residents returned to the nursing home when they were both asymptomatic and deemed no longer contagious by the Ministry of Health, usually fourteen days after having tested COVID-positive. The first resident returned on January 12; the last on February 4. Several came back in worse condition than when they had been referred, even when the course of COVID itself had been asymptomatic. Confusion, new-onset severe pressure sores and new-onset medical problems characterized some of these residents. In updating our COVID routine since the outbreak, all our health workers and almost all residents, including those who had been COVID positive, have received both the first and second Pfizer vaccinations. In accordance with ministry policy, we still do group worker COVID testing once weekly, and shall continue to do so for a while yet. Our workers still don masks, gloves and gowns when necessary, and hand hygiene is still emphasized. Today we are at maximal occupancy. The administration recently sponsored a staff fun day that included a field trip and enjoyable activities, culminating in a meal at a nice restaurant.

SUMMARY

Experiencing a COVID nursing home outbreak was traumatic not only for the residents and their families but also for the nursing home workers, including the administration staff. It imposed pressures and demands of a kind unfamiliar to all of us, and particularly to the nurses and aides who had worked most closely with the residents. Without wishing to sound overdramatic, I find that the analogy that comes to mind is fighting a war in which the nurses and their aides were in the front line. As may be surmised from their personal statements, all our nurses pushed themselves to their limit and ultimately were up to the task. They displayed a humble heroism, each one marshalling his or her own resources and doing what they could, despite personal risk, to perform as responsibly as possible. Consequently, we did get through the crisis and were able to get our nursing home back on track.

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