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# IMPACT OF COVID-19 ON LONG-TERM CARE IN MASSACHUSETTS

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## Introduction and State Context

**By August 20, 2020, 5326 nursing home residents had died of COVID-19 in Massachusetts nursing homes.<sup>1</sup> This represents 12 deaths per 100 licensed beds. Because nursing homes do not operate at 100% occupancy, this figure understates the risk to residents: with a total resident count reported prior to COVID-19 restrictions of 36,890, deaths were at least 14.4 per hundred residents.<sup>2</sup> These rates, substantially higher than those reported for nursing homes in other states, make the Massachusetts case especially important to examine.**

This report documents the policy interventions of the Massachusetts state government, the state nursing home associations, and selected other actors based only on public policy documents, press releases, and newspaper and news site reporting. It was developed to provide a compendium of information from Massachusetts on specific dimensions of government and provider response to COVID-19 in nursing homes. These responses are compared across 10 state analyses, prepared by participants in the [Duke Coronavirus Rapid Response project], as seen in [citation]. More detailed data could not be sought within the timing (through early July 2020) and resource constraints of the project. Informant interviews and quantitative data collection would shed light on the implementation of the stated policies and the impact of the interventions on nursing homes, their residents, and their personnel. It is hoped that this compendium for Massachusetts provides a context for further data collection and analytic studies, as we strive to understand what worked and what did not to combat the pandemic in nursing homes.

### The Massachusetts Context

In the Commonwealth of Massachusetts, older adults with long-term services and supports needs live in three types of congregate residential settings: nursing homes, assisted living, and rest homes. Nursing home utilization per capita has been falling steadily in recent years, but, at 49 per 1000 aged 75 and older, is still above the national average [3]. The state counts 388 certified nursing homes; 376 listed on Nursing Home Compare in June 2020 served 43,762 residents, with an average of just under 100 residents per facility. The overall occupancy rate for these was 85.2% [4]. In a recent year, 11.6% of nursing home days were paid for by Medicare, provided to post-acute patients discharged from the hospital; most of the remainder are supplied to long-stay residents [5]. 63.2% of nursing home days are paid for by Medicaid [4]. 71% of Massachusetts nursing homes are operated on a for-profit basis, and almost all of the remainder (28%) are nonprofit [4].

Assisted living facilities have grown rapidly in recent years. Because they are not licensed by the Commonwealth, an accurate count is not available, but their number has been estimated at 346, serving a mostly private pay population of about 17,000 residents [6, 7]. The 61 rest homes provide a traditional style of living arrangement for older adults who do not have major functional impairments [8, 9]. The rest home resident daily rate is paid by the Department of Transitional Assistance, not MassHealth

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<sup>1</sup> Author's computation from [1]; assisted living facilities and rest homes removed. Resident data from Nursing Home Compare [2], last updated August 26, 2020. The number of deaths in all Massachusetts long-term care facilities includes deaths in assisted living facilities and rest homes as well as nursing homes, and stood at 5772 on August 26.

<sup>2</sup> This figure still understates risk, because occupancy during the COVID-19 crisis was likely lower due to freeze of elective surgery and resulting downturn in post-acute admissions.

(Massachusetts' Medicaid program), as this is considered a residential rather than a health service. The number of rest homes and rest home residents are steadily diminishing.

In Massachusetts as across the nation, older adults with functional disability needs are avoiding nursing homes and seeking services in their own homes or other community settings, or in the less institutional residential setting of assisted living. Older adults who are able to pay for care privately have been filling assisted living beds rather than nursing home beds,<sup>3</sup> or staying in their own homes to receive self-paid home care. Those who cannot pay for needed services are enrolled in MassHealth, Massachusetts' Medicaid program. As in other states, MassHealth has been rebalancing Medicaid long-term services and supports (LTSS) toward community services and away from residential services; between 2016 and 2018, the number of MassHealth members in nursing homes declined by 2% while the number served by home and community based services increased 11% [10-12]. The most important MassHealth services are personal home care, home health, PACE, and participant-directed services (personal care attendants); home and community based services also include adult day health [12]. By FY 2016, expenditures for these community-based services exceeded Medicaid nursing home expenditures. But the trend means that when the pandemic struck, more older adults with disability were receiving services at home than otherwise would have been the case. Congregate living in itself puts older adult nursing home residents, diagnosed with multiple chronic conditions including dementia, at extreme risk from the pandemic; but older adults receiving LTSS at home also face high risks, and are even more hidden from view.

## The COVID-19 Outbreak in Massachusetts and its Long-term Care Facilities

The first identified Covid-19 cases in Massachusetts was an international student returning to UMass-Boston from his home in Wuhan in late January [13] and a young woman who returned to Norfolk County from a school trip to Italy [14]. Both were quickly isolated. Community spread began with a February 26-27 international corporate meeting in a Boston waterfront hotel that was responsible for almost all the cases counted in early March (137), and eventually was believed to have spread the disease to more than a thousand people across the Commonwealth and the US [15-17]. It later emerged that additional community cases could be traced to an even earlier event, a mid-February high school basketball game in the Berkshire hill country, a destination for New York second-home owners [13]. But these international and interstate travelers did not represent the populations that were hardest hit by the pandemic: those in residential long-term care and other older adult congregate housing.

As the disease spread, concern was focused squarely on hospitals and the limits to their capacity to treat infected patients. Massachusetts observers were appropriately alarmed by the extreme stress on hospital capacity in Italy and New York City. Reflecting this concern, the Massachusetts Department of Public Health began to publish daily counts of persons hospitalized with the virus on March 9. The Governor issued an Executive Order declaring a state of emergency on March 10 [18]. Personal protective equipment (PPE) was in very short supply, and supply of this equipment to hospital personnel was prioritized [19]. The competition among states for PPE generated one of the most dramatic side-

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<sup>3</sup> “Assisted-living communities, which tend to be more affluent than nursing homes, have about 17,000 residents in the state, up from 14,000 in 2014, according to the Massachusetts Assisted Living Association in Waltham. In contrast to nursing homes, which have about 38,000 residents...” [6]

shows of the pandemic: the owner of the regional NFL franchise used his private air transport to ship a million masks to Massachusetts hospitals from China under cover of darkness, and was prepared to protect them from being commandeered by Federal authorities if need be [20].

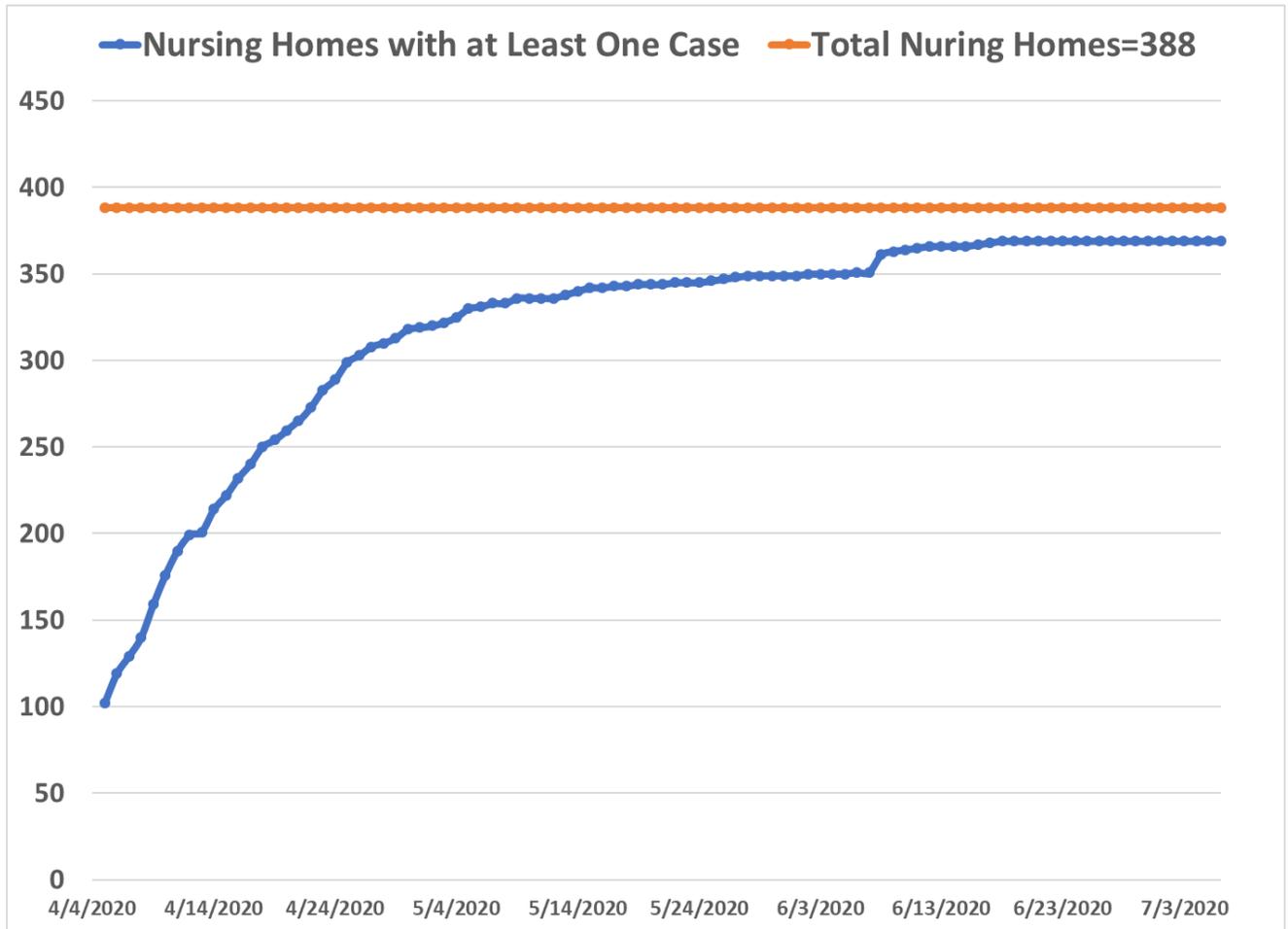
The first indication that the Department of Public Health considered nursing home and rest home populations vulnerable was a March 11 policy statement that these residential settings were to “actively screen all visitors and to take measures to restrict visitors under certain circumstances” [21]. Assisted living facilities are not regulated by the Commonwealth and were not included in this directive. On March 11, Massachusetts Department of Public Health directed that nursing homes be closed to visitors as of March 12 [22], prior to CMS’s guidelines on visitors [23]. There was discussion at this time of use of designated nursing homes for post-hospital care of COVID-19 patients, but there was still no focus on conditions for nursing home residents themselves.

Attention began to shift to include long-term care facilities when the situation at the Holyoke Soldiers Home, a state-owned veterans facility (not a state-licensed or Medicare-certified nursing home) was surfaced by the press [24-26]. Although a COVID-19-suspected death occurred in the Soldiers Home as early as March 1, the first test of a resident was administered on March 17, by which time numerous residents were exhibiting symptoms. The facility administration, following current guidelines, did not file reports concerning the untested ill residents. By the time the Department of Veterans’ Services (the state agency responsible for the Soldiers Home), the Department of Public Health, the Holyoke mayor, and the Governor were made aware of the situation, 11 residents had died of COVID-suspected illness in the 247-bed facility. Although over the next month other Massachusetts nursing homes would suffer similar horrendous losses, the Soldiers Home death toll was shocking to officials and the public at that time. By May, 76 residents had died and 84 additional residents had tested positive, as had 80 staff members.

Non-governmental groups were sounding the alarm about the nursing home emergency before the Soldiers Home death toll came to light. In mid-March, the Massachusetts Senior Care Association, the state affiliate of the American Health Care Association (AHCA) provider group, teamed with the Massachusetts Institute of Technology (MIT) management faculty and experts from Hebrew SeniorLife, a Boston aging services provider, to form a COVID-19 Policy Alliance. Groups of students and faculty began to tackle issues of staffing shortages, infection control, tests for residents and staff, and the supply chain for PPE, striving for practical solutions [27, 28].

Data available with hindsight shows the apparently inexorable entry of the disease into nursing homes. Exhibit 1 shows the number of nursing homes with at least one COVID-19 case, beginning with April 11, the first date this number was published, when it had already reached 102 of the Commonwealth’s 388 homes.

Exhibit 1: Nursing Homes with One or More COVID-19 Cases April 11 through July 5



The total deaths of long-term care facility residents and staff far exceeded the cumulated COVID deaths in Massachusetts that occurred outside of long-term care facilities through July 5, 2020. The proportion of total Massachusetts deaths associated with long-term care has risen continuously over the period, and by that date stood at 65.9%. The cumulated deaths in nursing homes stood at 12 per hundred certified beds on July 5. When policy makers and the public became aware of the threat COVID-19 posed to nursing home residents, it was almost too late to stem the pandemic spread even though the delay was only a matter of weeks.

Exhibit 2: Massachusetts Cumulative COVID-19 Deaths: Long Term Care Facilities and Total Less LTCF April 11 through July 5

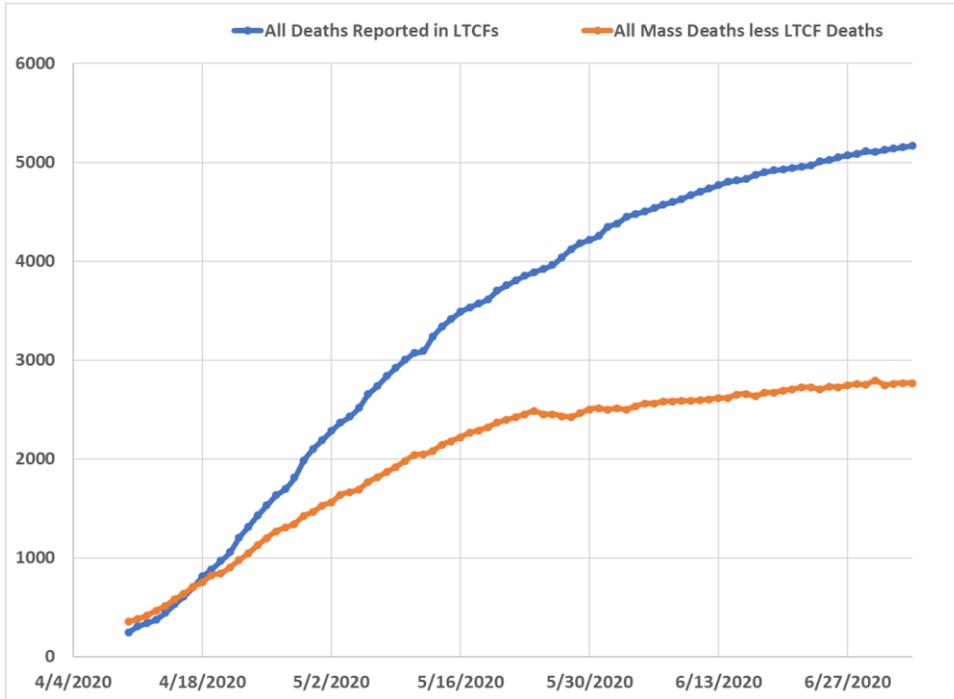
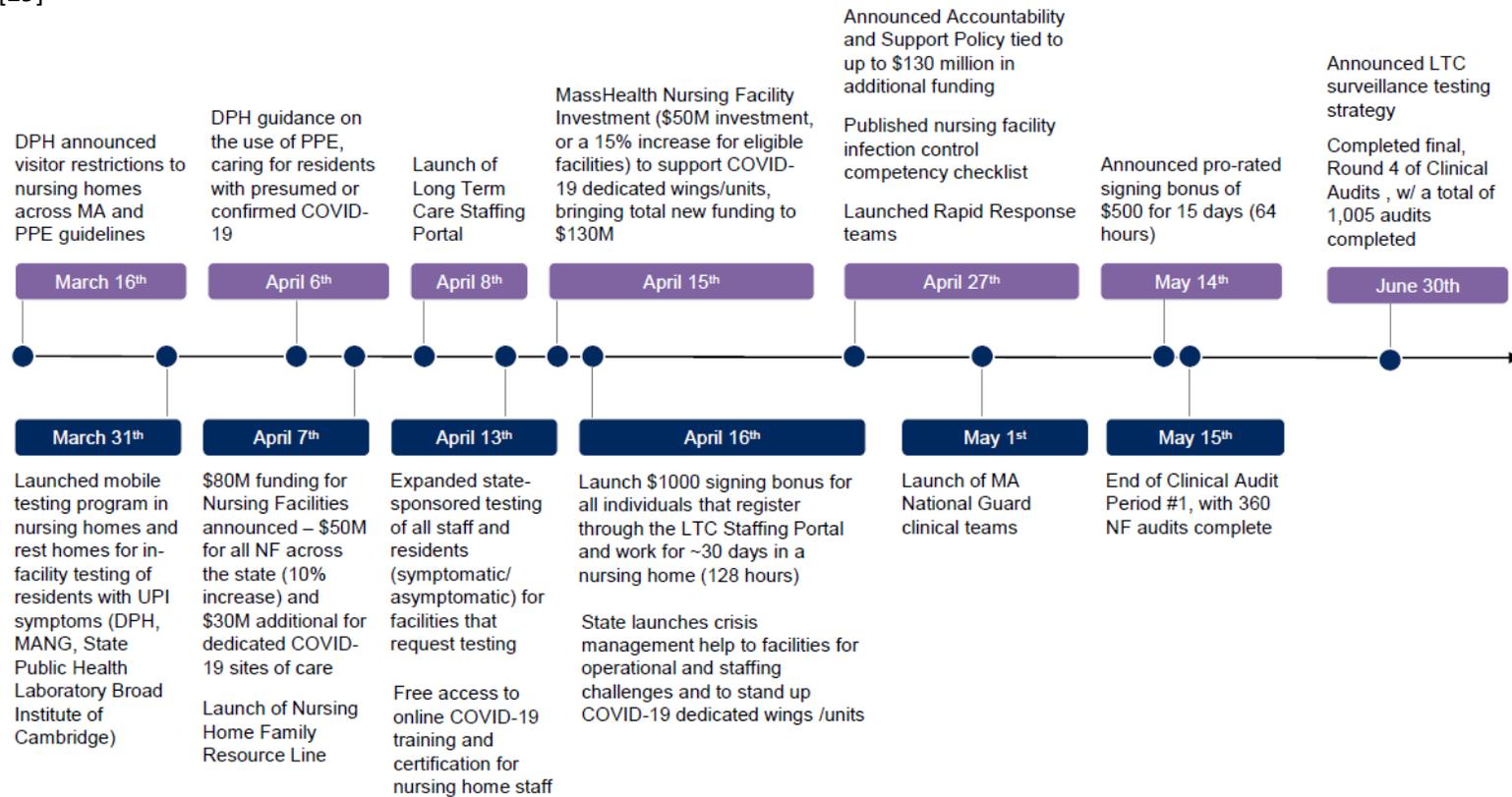


Exhibit 3 Timeline of Massachusetts Policy Interventions through June 30, 2020

Source: [29]



Policies pursued by the nursing homes and government agencies can be considered under two headings: initiatives that prevent the virus from entering a facility, and initiatives that attempt to keep it at bay once inside. After considering these two dimensions, we consider efforts to mitigate the toll that the pandemic and these initiatives themselves took on the normal staffing and finance of the nursing homes.

## Policies: Prevent Viral Entry

The risk of the virus entering a nursing home can be reduced by preventing infected persons from entering the home. Policies were directed at 1) visitors 2) new admissions, including post-acute patients entering from hospitals and 3) staff. State inspectors, who emerged as a source of infection in other states, were not subject to an explicit policy in Massachusetts.

### Exclude Visitors

On March 11, the Department of Public Health ordered that all visitors to LTSS facilities be screened [22]. This was the earliest mention of concern with respect to LTSS facilities. A few days later, CMS directed nursing homes to “temporarily restrict visitors” [30]. A Massachusetts order replacing the screening directive with an order banning visitors and “non-essential health care personnel,” issued on March 16, responded to this CMS directive [22]. Nursing homes (and many assisted living facilities) interpreted the ban on non-essential health care personnel as including workers hired by families to provide needed care for residents beyond what the facility could provide. The loss of family care and of these extra paid workers, often especially important for resident dining, exacerbated staff shortages.

### Halt admissions

Several facilities that survived the spring with little or no COVID infection attributed their success to refusal to accept any new patients or to a dramatic reduction in new admissions during the pandemic. When new residents were admitted, some nursing homes quarantined them for 14 days [31].

### Divert Hospital Post-Acute Admissions to COVID-only facilities

One approach designed to protect current nursing home residents was to divert post-acute admissions, entering nursing homes from hospitals, to COVID-only facilities. This strategy was developed to ameliorate the COVID-19 crisis in hospitals. Reflecting extreme concern with breaching hospital capacity during a coming surge of COVID-19 cases, the Governor and the Department of Public Health (DPH) began planning for post-acute COVID care. New York State had by that time issued an order requiring that post-hospital COVID patients be accepted for post-acute care by New York skilled nursing facilities. This was later rescinded. Massachusetts’ initial solution was somewhat different: to recruit nursing homes to become COVID-only facilities by moving current residents to other locations, to make way for the influx of COVID patients. The initial target was 1000 beds [32]. On April 7, the Governor announced that \$30 million would be available for nursing homes who volunteered to take COVID post-hospital patients [33]. One Worcester-area nursing home agreed to be a pilot in this program and began moving residents to its sister facilities and other nursing homes during the last week in March. Residents and their families objected to the short notice, lack of choice, and disruption associated with emergency transfers [34]. But even more important, it soon emerged that many of the residents transferred or designated for transfer had already contracted COVID-19, and the plan to convert operating nursing homes to all-COVID facilities was abandoned within a few weeks [35, 36]. However, an effort continued

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to locate and staff closed nursing homes for COVID-only care.<sup>4</sup> By April 15, the policy toward dedicated COVID-19 capacity was described in this way [38]:

“The Administration has pursued three parallel options for expanding COVID-19 dedicated nursing facility capacity:

- Approach 1: Converting existing occupied facilities to fully dedicated COVID-19 facilities. An example of this is the Beaumont Facility in Worcester.
- Approach 2: Converting empty facilities to stand up a new dedicated COVID-19 nursing facility. An example of this is the Pioneer Valley Recovery Center in East Longmeadow.
- Approach 3: Creating dedicated COVID-19 wings within a broader nursing facility.

To date, in addition to the Beaumont facility, the Commonwealth currently has 5 dedicated COVID-19 facilities opening within the next 7-10 days in Brewster, Falmouth, New Bedford, East Longmeadow and Great Barrington; and several others in the planning stages.”

A further update is provided by an editorial in the Journal of the American Medical Association [39] and in report from members of the New England Geriatrics Network [40]:

As of May 1, 2020, six nursing homes have been fully converted to COVID-only facilities, and more than 80 nursing homes have dedicated in-house COVID units. The state accelerated the creation of these facilities with increased Medicaid payment rates for the care of patients with COVID-19. This has helped offset revenue loss related to decreased post-acute care admissions due to a decrease in elective procedures.

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<sup>4</sup> The sources available for this compendium do not provide a clear picture of the effort to stand up all-COVID facilities, and in some cases appear to conflict.

[36] “UMass Memorial Medical Center helped transform the Beaumont nursing home into a recovery center by helping the facility set up infection control protocols and procedures and providing recommendations to adapt its physical structure.”

[37] “To properly isolate staff from the residents, Beaumont created walls on each of the four resident care floors, separating the last two resident rooms and the sitting room from the rest of the resident care area. The staff use the two resident rooms for donning and doffing personal protective equipment (PPE) at the beginning and end of shifts, while the sitting room is used for storing PPE and other supplies.

Approaches to expand capacity for dedicated COVID-19 skilled nursing facilities have included converting existing occupied facilities to fully dedicated COVID-19 facilities; converting empty facilities to new dedicated COVID-19 nursing facilities; and creating dedicated COVID-19 wings within a broader nursing facility

On-site management and operational support have been provided to assist with staffing, vendors, implementing infection control measures, etc.”

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Ultimately, seven nursing homes were designated “just for COVID patients in Worcester, East Longmeadow, New Bedford, Great Barrington, Falmouth, Brewster, Wilmington. None of the seven was ever at capacity, in fact some were never used at all.” [41]

### Restrict Staff to Reduce Risk

There was no official policy restricting staff to working at only one nursing home. However, this was mentioned in the list of tactics used by one of the few nursing homes that had no deaths.

“Keeping infected workers out, a crucial hurdle, was one of the hardest to clear because the industry is built on the labor of low-wage employees who work several jobs. Still, some of the nursing homes persuaded their workers to commit to one facility until the crisis abates.” [31]

### Restrict Visits of Outside Care Providers and Regulators

Federal and state regulations encouraged substituting telephone and other types of remote visits by medical providers for in-person visits. However, there is little information about how much these were used in Massachusetts nursing homes. One example supporting substitution of remote for in-person visits is the state waiver of the requirement for in-person documentation related to Medical Orders for Life Sustaining Treatment (MOLST). This allowed advance directives conversations to continue with family and practitioners supporting resident choice for end-of-life care, but without an in-person outside provider [42]. The state inspection schedule, which periodically sends inspectors into nursing homes, was paused.

## Policies: Prevent Virus Spread Within Nursing Homes

Testing of residents was the most important and elaborate initiative directed toward stemming the spread of COVID-19 within a nursing home once the virus had entered, but testing was only part of a full strategy including personal protective equipment for all staff, isolating known or suspected positive cases, and simply reducing interaction among residents.

### Reduce interaction among residents

As of March 16, nursing homes were directed to suspend communal dining as well as internal and external group activities [43].

### Isolate residents with known or suspected infection

In that same directive, nursing homes were told to provide care to patients with known or suspected COVID-19 in a single-person room.[43].

### Employ Personal Protective Equipment (PPE)

When staff who care for residents use PPE and hygiene protocols, infection can be contained, but PPE was in short supply. On April 7, Massachusetts Senior Care Association, the Massachusetts affiliate of the American Health Care Association, issued a press release [44]:

Facing severe shortages of PPE, many facilities are depleting within a week the monthly allocations they are receiving from their medical supply vendors. In order to support and

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ensure the safety of our dedicated workforce, PPE is desperately needed so that staff can safely and appropriately care for residents.

Since the COVID-19 outbreak began, nursing facilities have worked tirelessly to protect their nursing home residents and work diligently to mitigate the spread of this devastating virus. Nursing homes continue to pursue all viable options in order to secure additional masks, gowns, eye shields and gloves including appealing to the state's Command Centers and making purchases via international suppliers," said Tara Gregorio, President of the Massachusetts Senior Care Association. "The Association has secured 20,000 surgical masks that we will begin distributing to front line staff, upon arrival later this week and we anticipate having another 100,000 in two weeks, but more is needed today. We are appealing to the community and vendors with the simple message that we need to protect our staff with PPE in order to protect our vulnerable residents.

A directive from DPH issued on April 29 required that all nursing home staff wear face masks, and called for "appropriate PPE" but with the caveat that personal protective equipment should be used "to the extent PPE is available." [45] There were no provisions for assisting nursing homes to acquire PPE. Some equipment that was sent to nursing homes was found to be defective [46].

In mid-May, Centers for Medicare and Medicaid Services (CMS) began a survey of nursing homes [47], and found that 23% of responding nursing homes in Massachusetts had less than one week's supply of at least one type of PPE (N95 Masks, Surgical Masks, Eye Protection, Gowns, Gloves, Hand Sanitizer)(See Appendix Exhibit and [47] ). Three weeks later, this number had fallen to 15%, lower but still unacceptable.

### Ramp Up Infection Control

Effective use of PPE is one component of a larger effort for infection control. CMS policy toward infection control in nursing homes has been evolving over recent years with the realization that many nursing homes do not meet quality standards for this vital activity [48]. Recent CMS policy has implemented the requirement that nursing homes employ an infection control specialist. During the summer of 2020, MassHealth implemented measures to monitor infection control policies employed at nursing facilities to protect against the spread of COVID-19, specifically requiring submission of infection control self-assessment and attestation [49-51]. This is required for facilities to receive special state COVID-19 funding. The Massachusetts Senior Care Association designed and implemented a program to provide support and feedback to nursing homes concerning infection control [52].

### Test Test Test: Baseline and Surveillance

Testing appears to be the most challenging element of the strategy to contain the virus in nursing homes. Access to tests was a problem, tests were not necessarily administered in a strategic way, and the information provided by the tests was apparently not used to full advantage, in part because test results were slow to return.

Nursing homes were initially on their own to acquire and administer tests to their residents and staff, and tests were not required. But beginning on March 31 the state deployed the National Guard to nursing homes to administer tests in mobile units [53]. 12 teams of 6 to 9 Guard personnel were to visit

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3 nursing homes each day. On April 7, the Commonwealth described the program in a formal announcement as “a program to allow for safe, rapid, on-site testing of residents....[51]

...of long-term care facilities like nursing homes and rest homes. The initiative is being completed as a partnership between the Department of Public Health (DPH) and the Massachusetts National Guard and the testing being conducted by the BROAD institute. So far, the National Guard has been deployed to 80 facilities across the state and has completed more than 1,300 tests since this program started last week. [54]

In addition, at least one private organization stepped up to support testing of nursing home residents and staff. The Broad Institute, a joint center of the Massachusetts Institute of Technology and Harvard University, performed one-time testing at nursing homes, rest homes, and assisted living facilities for residents and staff.

By April 11, more than 3000 tests had been completed and a protocol was sent out to nursing homes soon afterwards to help them access the mobile testing program [55]. Around the same time, the state made test kits available to nursing homes to be administered by nursing home personnel, as an alternative to the National Guard program.<sup>5</sup> When the state began to report on a full dashboard of COVID-19 information, beginning April 20, a half page was devoted to the National Guard effort. By that time, testing teams had visited 200 unique facilities, some more than once, and had administered 9492 tests, about 47 per home. 14,842 test kits had been sent out to nursing homes, but the number of facilities that received them is not reported. It would be possible to track the number of facilities visited and tests administered over the time using these approaches (National Guard testing teams, distribution of test kits), although the public data does not include information about which sites had residents tested. By the end date of this report (first week in July 2020) mobile testing had visited 496 unique facilities (892 visits) and supplied 60,127 tests, for an average of 121 tests per included facility and 67 per visit [57].

Extending the mobile testing program, National Guard technicians were also deployed to assisted-living centers beginning April 13 [6]. However, turnaround time was too long for testing to provide actionable results.

Unfortunately, many of the specimens submitted by the National Guard and by on-site personnel using the test kits were not appropriately collected or were never returned, and the program was

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<sup>5</sup> [56]”On April 8, the state announced nursing homes could order test kits to be delivered to their facilities and administered by trained personnel. The option was an alternative to the mobile testing program in which the state deployed Massachusetts National Guard members to administer tests at nursing homes. But after sending out 14,000 tests, Sudders [Secretary of Health and Human Services] said only 4,000 were returned, and many of those, the state said in a statement to The Boston Globe, were unlabeled or in leaking tubes. Sudders said the state will continue to offer mobile testing through the National Guard while they work through the problems with the test kit program.”

“Starting yesterday [April 6], DPH worked to expand the program by providing an option for places to use their on-site medical personnel to collect specimens and send them to the state lab for testing.” [54]

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discontinued [56, 58]. Reversing its policy of sending test kits directly to nursing homes, the Department of Public Health then supported mobile test sites for residents and staff that circulated to nursing homes.

In response to concerns that one-time testing residents and staff would not lead to the desired result of disease control [59],<sup>6</sup> the COVID-19 Policy Alliance stood up a pilot program to conduct surveillance testing in 5 nursing homes [60].<sup>7</sup>

In May the state required that all nursing homes submit baseline test results for a minimum of 90 percent of residents and staff, placing responsibility for testing squarely on the nursing homes [61]. Failure to reach this standard would disqualify the facilities from receiving a share of \$130 million in additional MassHealth funds the state allotted to cover pandemic costs. The state paid for the one-time testing [62]. This Initial testing policy came under fire because only one round of tests was required. Critics pointed out that residents would likely need to be tested again, and certainly would need a second test if they exhibited symptoms [60].

In early July, MassHealth issued a bulletin detailing a more comprehensive testing approach for nursing homes. It required a second baseline followed by targeted surveillance testing of residents and staff [63]. The directive clarified that staff were not to be expected to seek testing on their own time nor pay for tests themselves. The surveillance testing of staff was to be conducted biweekly in nursing homes

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<sup>6</sup> [59] “Baseline testing allows us to take a snapshot in time of the virus in our facilities,” says Tara Gregorio, president of the Massachusetts Senior Care Association. “However, baseline testing in and of itself is not enough. What we need is regular surveillance testing so that we can monitor [residents who] test negative and ensure that they continue to test negative.” Dr. Michael Mina, an epidemiologist at the Harvard T. H. Chan School of Public Health, put it more bluntly during a recent call with reporters. “Baseline testing for the virus alone is not an appropriate goal. And in particular, [tying] COVID response funds to this, I think, is not appropriate. And the reason for that is doing one cross-sectional sample — one sample time point of the nursing home — gives you very little information if you’re only testing for a virus,” he says.

<sup>7</sup>[60] Gregorio [Executive Director, Massachusetts Senior Care Association] helped launch a pilot surveillance testing program this week at the Boston Home in Dorchester and the Leonard Florence Center for Living in Chelsea, with a grant that the MIT group, COVID-19 Policy Alliance, received from the Schmidt Family Foundation.

[59] “So what would a surveillance testing plan look like? The MIT-based [COVID-19 Policy Alliance](#) is working with Mina and Gregorio to figure that out. The Policy Alliance team has partnered with Pro EMS and the [Broad Institute](#) to test between 1,000-1,400 people every week at six Boston nursing homes as part of an eight-week surveillance testing pilot program. In addition to weekly diagnostic or “PCR” tests, which tell you who has the virus at that point in time, the team will also be conducting blood antibody or “serology” tests on all participants, which can indicate if they’ve been exposed to the virus.” The state is really focused on this baseline testing — this one-time PCR test. From our perspective, the way you make that baseline testing valuable is you add serology to it, and then you build it out into a broader surveillance testing framework,” says Tess Cameron, of the COVID-19 Policy Alliance Group. “There are a lot of ways to think about how to do repeat testing in a way that’s also being thoughtful of resources this consumes.” The framework for a state-wide surveillance testing program is still far from complete, but the Policy Alliance’s pilot will help determine how to deploy limited resources in the most cost-effective and medically useful way.”

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that did not find new positive cases at the second baseline, with the number tested to vary according to the estimated infection rate in their communities.<sup>8</sup> If any residents or staff test positive, or if the 90% test rate was not achieved at baseline, facilities were to shift to weekly testing of all residents and staff, until they are able to report two weeks with no new cases. The sanctions for failure to complete and report required testing include substantial administrative fines.

Salient details for the complex second baseline and surveillance testing policy were summarized in a memo to members from the Massachusetts Senior Care Association [64]:

It is expected that MassHealth will fund \$100 per test using the same supplemental payment process that was used for the original baseline testing.

**Baseline Testing Requirement -** Nursing facility providers are required to conduct baseline testing for COVID-19 on a minimum of 90 percent of their staff who worked, provided services, or volunteered at least once at the nursing facility's physical location between July 1, 2020 and July 19, 2020. Staff does not include persons who have previously tested positive for COVID-19.

**Reporting Requirements and Attestation Requirements -** Nursing facilities are required to submit a signed Attestation to CHIA [Center for Health Information and Analysis] ... and file a Reporting Survey Form, via a CHIA online survey, by 12:00 p.m. on Monday, July 20, 2020, after the baseline Testing Period. Facilities must also submit weekly reporting using the same online survey by 12:00 p.m. each Friday, beginning July 31, 2020. Nursing facilities must submit such weekly reporting, even if they are in a bi-weekly Testing Period.

**Requirement for Nursing Facilities to Facilitate Tests -** Nursing facilities are required to secure or facilitate all COVID-19 testing of staff required by NF Bulletin 148, and must ensure that the testing is conducted at no cost to the staff members who must be tested. Nursing facilities may not require or encourage staff members to obtain testing on their own time or at their own cost. However, staff members may choose to facilitate and obtain their own testing under certain circumstances (such as through their own primary care practitioner or a rapid testing site due to possible COVID-19 exposure or symptoms).

There is no published information concerning whether the state-mandated testing approach drew from the experience of the Alliance pilot, begun in April, or on how that pilot evolved.

The effectiveness of a testing protocol depends on how rapidly test results are returned and the actions taken in response to a positive test. Across the nation, turnaround time for tests has been problematic

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<sup>8</sup> [63] Nursing facilities whose baseline testing, conducted in accordance with this bulletin, indicates no new positive COVID-19 Staff must complete bi-weekly surveillance testing, beginning July 23, 2020. Each bi-weekly Testing Period will last for two weeks, from Thursday at 7:00 a.m. through the second subsequent Thursday at 6:59 a.m., with the first bi-weekly Testing Period running from July 23, 2020, through August 6, 2020. The number of Staff that must be tested in each bi-weekly Testing Period depends on the regional transmittal level of COVID-19 for the Emergency Medical Services (EMS) Region in which the nursing facility is located...For nursing facilities in an EMS Region with a regional transmittal level below 40 cases per 100,000 residents, the nursing facility must conduct bi-weekly surveillance testing of at least 30 percent of Staff

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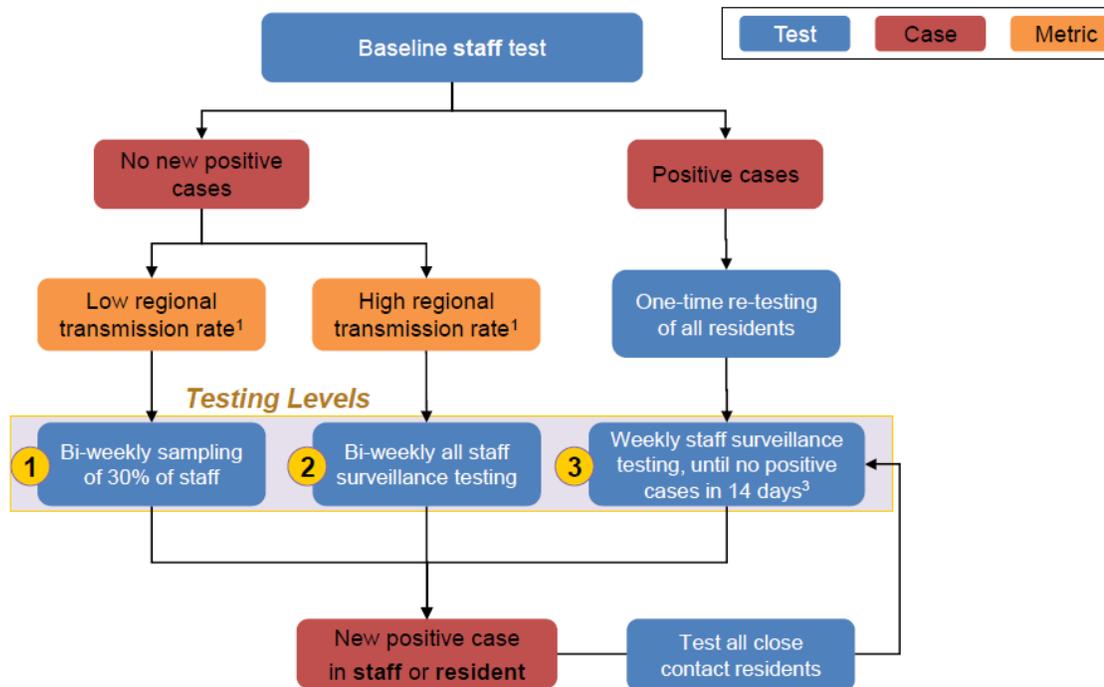
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throughout the pandemic. There is no public information available on the turnaround for the various testing approaches used for Massachusetts long-term care facilities throughout the spring and summer. The DPH policy memo states that if a staff member tests positive either at baseline or with surveillance testing, they “must not work or volunteer, and nursing facilities may not permit staff members to work or volunteer, at the nursing facility’s physical location while potentially infectious, as determined in accordance with the most recent infection control guidance issued by DPH.”[63] Residents who were in contact with a staff member with a positive test are to be considered infected. Of note, the policy memo does not mandate action for when a resident tests positive, except as this triggers more testing.

Suspected or confirmed corona virus disease, whether for a resident or a new admission, should trigger staff precautions and either isolation of the patient or “cohorting” to areas with other infected patients. Especially in response to the debacle at the Holyoke Soldiers Home, where, due to staff shortfalls, an inexperienced Commandant had authorized residents with COVID symptoms to be moved into a unit where residents were likely COVID-free, nursing homes were exhorted to use isolation procedures for residents with COVID symptoms and also for the many others who were believed to have been exposed. Without PPE or adequate overflow space to implement such procedures, let alone diagnostic tests for all but the most ill, this was simply not feasible in most nursing homes.

Exhibit 4: Testing Protocol as of July 7, 2020

Source: [29]



<sup>1</sup> Regions with fewer than 40 cases in the last 7 days per 100,000 residents are low-transmission; regions with >40 are high-transmission; regions defined as MA EMS regions  
 MassHealth sanctions of \$30 / violation; each day a staff member is not tested constitutes a violation; e.g., 100 staff not tested for 7 days = 700 x \$30 = \$21,000  
<sup>3</sup> For nursing facility reporting, two weekly reporting cycles, which may or may not align exactly with 14 days

## Policies: Support Resident Care

The policies to prevent COVID-19 spread into and within nursing homes had substantial negative impacts on resident well-being, at the same time that COVID preventive procedures and the surge in resident illness increased staff workload. Most important, residents were suffering from fear of illness and from COVID-19 itself. Policy interventions focused on resident isolation, advance directives, and the basics of maintaining staff levels.

### Mitigate Resident Isolation

The strategies employed to reduce traffic from outside the nursing home and the contact among residents and staff within the nursing home (visitor bans, end of group activities including congregate dining, PPE) were instituted to prevent entry and spread of COVID-19, but appear to have their largest impact on residents themselves. Nursing homes developed protocols for distanced family visits through windows and later, outside in open air. The Massachusetts Senior Care Association acquired devices to facilitate communication with family and friends.

*Massachusetts Senior Care secured donations of 750 tablets from companies including Amazon, Walmart, Teel Technologies, and Acer, as well as a financial contribution from Personable, Inc., to nursing home residents across the state to facilitate face-to-face communication with their loved ones during the COVID-19 pandemic [49]*

### Maintain Staffing Despite Challenges

Nursing homes had difficulty maintaining staffing levels as the pandemic worsened, even as the care needs of residents increased and the care provided by relatives and friends was barred. Some personnel missed work because they were ill with the virus and others quit because they feared for their own and household members' wellbeing if they should contract the disease. CMS data show that 21.5% of the Massachusetts nursing homes reporting on May 25 (the first date for which these data are available) reported a shortage of nursing staff, while 26% reported a shortage of certified nursing assistants and other aides. These reports of shortage had declined to 17% and 21% by June 14, but still remained unacceptably high.

#### Exhibit 5: Percentage of Nursing Homes Reporting Staffing Shortages May 25 – June 14

	May 25	May 31	June 7	June 14
Shortage of Nursing Staff	21.51	19.89	17.83	16.93
Shortage of Clinical Staff	3.91	3.64	3.62	3.76
Shortage of Aides	25.98	23.25	23.12	21.00
Shortage of Other Staff	14.80	13.45	13.65	10.34

Source: Computed from CMS individual nursing home data for Massachusetts [65]

Attempts by nursing homes to respond to staff shortages, for example hiring temporary workers or offering bonuses, would have strained nursing home finances. State agencies responded with several policies:

- ⇒ Eased CNA training requirements.

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On May 12, 2020, the Commissioner of Public Health ordered that employers could waive the requirement that nurse aides complete training for certification as Certified Nurse Assistants (CNAs) within 90 days of hire, “provided that the long-term care facility ensures that the nurse aide is competent to provide nursing and nursing related services and demonstrates competency in skills and techniques necessary to care for residents’ needs.” [66]. The relaxation of requirements for newly hired CNAs follow changes in CMS regulations. In addition, the training requirement for feeding assistants was reduced from 8 hours to one hour. Further directives concerning how these changes were to be implemented were provided to nursing home and rest home administrators on June 4 [67].

⇒ Rapid Response Teams

Teams of 5 to 10 licensed nurses and CNAs were made available to nursing homes who fell below 50% of state staffing requirements. They were to be deployed within 48 hours and could work in the nursing home for 4-6 days [68]. The same policy enabled 5 to 10 clinical workers from the Massachusetts National Guard to be assigned to low-staffed nursing homes [68]. Deployment of volunteers with background checks was also a part of this policy [68].

⇒ Increased the maximum payment rate for temporary staffing

The maximum rate that could be paid to a temporary staffing agency for a CNA to work a week-day shift in the Boston area was increased to \$38.10 [69] The hiring nursing home is responsible for this cost.<sup>9</sup>

⇒ Employment Portal

A portal for long-term care staff was set up to match registered applicants with nursing home staffing requests [68, 70]. The state paid a \$1000 hiring bonus to any worker hired through the portal. In a separate effort, the private COVID-19 Policy Alliance partnered with the private job platform Monster.com to post nursing home jobs, with the same bonus arrangement.<sup>10</sup>

⇒ In-kind support for nursing home management

The Governor’s Office announced on April 15 that it had

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<sup>9</sup> For a period of two months from May 1, 2020, through June 30, 2020, the maximum rates for temporary nursing services provided in nursing facilities are increased by 35% above the maximum rates set forth in 101 CMR 345.03(2).

<sup>10</sup> [71]“[Monster.com](https://www.monster.com) posted 1,200 nursing home jobs on Friday [May 1] at no cost, and notified that anyone who takes one of the jobs by May 15 is entitled to a \$1,000 signing bonus from the state.

Monster said it partnered with the MIT-based COVID-19 Policy Alliance and the Massachusetts Senior Care Association.

Nursing home administrators say one of their biggest issues right now is attracting employees to fill gaps at facilities. A shortage of workers has existed for some time, but COVID-19 has accentuated the problem as cases and deaths at nursing homes have risen dramatically, sending many workers home with the disease and scaring others away. The jobs posted include resident care assistants, certified nursing aides, licensed practical nurses, and registered nurses. Monster said many of the openings require no experience.

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“contracted with a firm specializing in nursing home crisis management. They will be available to provide facilities with on-site management and operational support to assist with staffing, vendors, implementing infection control measures, etc. The firm will also support efforts to stand up dedicated COVID-19 facilities and wings/units within existing nursing facilities.”[38]

No other information was located concerning this activity.

⇒ Reduction of reporting and inspection requirements

Early in the pandemic, one measure that was taken to spare staff time was the reduction in reporting requirements. CMS suspended the payroll-based journaling (PBJ) reporting of staff hours and the periodic Minimum Data Set (MDS) assessments for patients and residents. State inspections were suspended, in part because of the risk posed by inspector visits.

⇒ Increased wages/ hazard pay for nursing home staff

Nursing homes struggling to retain current and recruit replacement staff to maintain adequate staffing levels sometimes offered hazard pay.<sup>11</sup> One nursing home that managed to avoid resident deaths (at least as of early July) pointed to a \$5 hourly pay raise as a key to success [31]. Increased funding from the state (discussed below) supported wage increases.

## Policies: Support the Resilience of Nursing Homes to Combat the Virus

The pandemic represented a huge shock to cash-strapped nursing homes. With a history of lean operating margins for many reasons (tight Medicaid rates, pressures from equity capital owners, declining private-pay demand), most nursing homes did not have flexible resources to purchase PPE and testing or provide hazard pay to bring depleted staffing up to an adequate level [74]. When elective surgery and other hospitalizations declined due to COVID hospital policies, nursing homes lost the flow of Medicare post-acute patients they counted on for revenue. Several nursing home strategies and state

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<sup>11</sup> MSCA press release April 15: Today, 40% of staffing positions are currently vacant due to the COVID-19 crisis. We are working diligently to identify pools of workers, utilize the state’s long term care employment portal and we are offering as robust financial incentives as we can afford to existing staff, but the stark reality is that we are unable to reach the most basic staffing levels. The only way we believe we can meaningfully begin to stabilize our staffing is for the state to provide a \$130 million dollar monthly investment to fund overtime costs, hiring of new staff and double time for ‘hero’s pay’ for our frontline staff, and ensure their safety through the consistent availability of PPE. [72]

Massachusetts is taking several actions to alleviate staffing shortages. The state offered a \$1,000 bonus for new nursing home staff, and an online portal was created to match nursing homes with job seekers and volunteers. The state is making available rapid response teams including nurses, emergency medical technicians (EMTs), and others that can be temporarily deployed for a few days to assist challenged nursing homes. National Guard units are available for non-clinical support, as well as staff from temporary staffing agencies contracted by the state. Private sector efforts include a collaboration between Massachusetts Senior Care Association, the MIT COVID-19 Policy Alliance, and Monster.com to offer free staffing listings on Monster’s recruiting website. [40] [73]

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interventions were designed to support nursing homes in continuing to care for their residents under these challenging circumstances.

Nursing homes and other LTSS residential facilities were advised, and later required, to provide tests, PPE, and isolation of suspected or confirmed cases. Further, there was understandably no relaxation of requirements for provision of adequate staff, who now had to care for residents who had the disease and keep COVID-free residents safe. These were essentially unfunded mandates for extra resources for a service largely paid for by state (MassHealth) funds. Most nursing homes simply did not have the physical resources (supply of PPE, single rooms, empty rooms; extra staff at a time when staffing was diminishing) to accomplish these goals and had no financial cushion. Nursing home administrators could see the Commonwealth and the public stepping up for hospitals to locate additional ventilators and other equipment, flying privately-funded missions to bring PPE from China [20], and standing up field hospitals for overflow COVID patients from hospitals, one in a convention center [75]. There was even discussion that nursing homes should help hospitals by acting as step-down units for recovering COVID patients, at a time when nursing homes were struggling to care for their own residents. With elective procedures halted and reduction in general demand for emergency care and urgent admissions due to public fear, hospitals were able to shift resources to COVID care (although not without financial repercussions). But nursing homes had no source from which to shift or borrow COVID-care resources, and lost the well-paying Medicare post-acute admissions when elective surgery was halted. There seemed to be the sense that nursing homes, as businesses that had promised safe residential services to frail elders, were singularly at fault for the spread of infection among their long-stay residents and should be on the hook for the additional needed resources, while hospitals with similar problems were seen as doing their best under dire circumstances. This is the only explanation I can provide for why nursing homes did not get the additional resources they needed until much later in the pandemic, and to this day (July 2020) do not have adequate PPE, for example[47]. At last a public health response was mounted, with funding for PPE, testing, and extra staff, but it seemed grudging and late. The accompanying requirement that nursing homes meet stiff accountability metrics in exchange for public health assistance was never applied to hospitals.

The first tranche of funding for nursing homes was \$80 million authorized by the Governor on April 5, in the context of \$800 million for health care providers. This was preceded by \$290 million in immediate cash relief and \$550 million in accelerated payments to providers, none of which went to nursing homes [33]. Further, \$30 million of the funds designated for nursing homes were directed to homes that volunteered to serve post-hospital COVID patients, a program that was soon scrapped as infeasible. The nursing home provider association made a strong case that more funding was needed for nursing homes to be able to provide adequate staffing, testing, and PPE. On April 15, they wrote:

Today, 40% of staffing positions are currently vacant due to the COVID-19 crisis. We are working diligently to identify pools of workers, utilize the state's long term care employment portal and we are offering as robust financial incentives as we can afford to existing staff, but the stark reality is that we are unable to reach the most basic staffing levels. The only way we believe we can meaningfully begin to stabilize our staffing is for the state to provide a \$130 million dollar monthly investment to fund overtime costs, hiring of new staff and double time for 'hero's pay' for our frontline staff, and ensure their safety through the consistent availability of PPE [72].

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The Commonwealth responded by announcing an additional \$130 million in funding for nursing homes on April 27, with specific requirements attached. Homes would receive funding only if they tested all residents and staff (baseline testing); passed a regular audit of infection control; and used the funds only for staffing, infection control, PPE, and/ or direct staff support [76, 77].<sup>12</sup> The funds were to be disbursed as follows: a 10% Medicaid rate increase for 4 months for all nursing homes; an additional 15% for 4 months of nursing homes establishing dedicated COVID wings; and up to 50% rate increase for 2 months based on an infection control audit, to be conducted by DPH, and weekly reporting to the audit organization. Facilities rated as Green on audit were to receive an additional 50% over historical payment [i.e. their Medicaid rate]. Nursing homes rated as “in adherence but warrants reinspection” would receive an additional 40% over historical payment, while those not in adherence would have several audit chances to improve their scores, but if persistently scored “Red” (not in adherence), would not receive any funds. In what may be a unique approach, an industry-led group was to conduct the audit on which funding was contingent: an infection control performance improvement center was to be led by the nursing home association, with advice and input from local academic-related LTSS providers.<sup>13</sup>

In the first round of audits, 228 facilities scored “Green” and 132 facilities scored “Red”. Of the 132 that scored “Red”, 119 facilities were not in adherence due to a missed core competency (e.g. improper PPE use). All facilities in the “Red” are receiving targeted infection control training and will be re-audited by 5/29 [78].

nursing homes also received funding under the national program to provide relief to providers [62].<sup>14</sup>

Notably, assisted living facilities could receive support in kind (e.g. testing under the mobile testing program) but were not eligible for state funding because they are not paid by MassHealth (and are not even certified by the state).<sup>15</sup>

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<sup>12</sup> State public health officials asked all long-term care facilities to test 90 percent of their staff and residents in order to qualify for a share of \$130 million in additional MassHealth funds the state allotted to cover pandemic costs. The state paid for the one-time testing [62].

<sup>13</sup> [77] “Massachusetts Senior Care Association has created a centralized, infection control performance improvement center utilizing experts from Hebrew Senior Life and a consortium of providers with expertise in this area. This command center will provide direct infection control support to facilities that need help.”

<sup>14</sup> [62] “Last week, nursing homes received additional funding from the federal government, which appropriated \$112 million in COVID-19 relief funds to facilities in Massachusetts, or about \$50,000 per facility, plus additional money depending on the number of beds.”

<sup>15</sup> [62] “Assisted living facilities may request testing through the state’s mobile testing program, paid for by the state, but they are not eligible for the additional state funding because, in general, they do not receive Medicaid money. Assisted living advocates, however, are pushing for access to government funding, saying they have been equally struck by the crisis.”

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## Data Policy: Monitoring the COVID-19 Pandemic in Nursing Homes

Massachusetts Department of Public Health committed to public reporting of COVID-19 data early in the epidemic. The evolution of data reporting requirements and of publicly reported data once again shows the early emphasis of COVID-19 policy on hospitals, ignoring nursing homes. However, there was strong public pressure for reporting of infections and deaths in nursing homes, especially from families of residents who were considering moving their relatives to other settings, or who wanted to advocate for more resources for care. One state representative argued forcefully that more information on nursing home performance be available to residents and families.

“This is a disease that has targeted aging adults,” said state Representative Ruth Balsler, a Newton Democrat who filed a bill requiring the state to report COVID-19 deaths not only at assisted-living residences but also at publicly subsidized senior apartments.

“Transparent and accurate reporting can help drive resources to the places that need it.” Balsler’s bill passed in the House of Representatives last week and is now before the Senate. Governor Charlie Baker hasn’t said whether he would sign the measure, which would require fuller disclosure at more senior housing sites, and in greater detail than his administration is now doing [6].

Nursing homes were mandated to report tests and cases starting April 8, but state agencies were reluctant to publicly identify nursing homes with deaths [79].<sup>16</sup> Nursing home data were first included in the daily Dashboard on April 5. By that time 102 of the state’s 388 nursing homes had one or more cases, with a total of 551 cases among residents and staff. Five days later on April 10, the cumulative total of deaths of residents and staff were reported for the first *time* – 247-- and cases had risen to 2124 in 176 homes. Starting with data for April 20, the daily dashboard listed nursing homes and assisted living facilities by name and reported the number of COVID-19 cases in ranges: fewer than 10, 10 to 30, and greater than 30 [6]. Cases diagnosed in assisted living facilities were also published in ranges<sup>17</sup>

Massachusetts for the first time Monday released data about the number of cases in specific long-term care facilities. Out of 218 facilities that have at least two positive cases, 78 had more than 30 cases, the state reported. The new state data, however, didn’t list the total number of cases or deaths in long-term care facilities, something it had been doing since earlier this month [6].

The Federal government required nursing homes to report infections and deaths starting April 20 [80].

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<sup>16</sup> Health care providers shall make every reasonable effort to collect complete demographic information, including full name, date of birth, sex, race and ethnicity, address, and telephone number on patients with confirmed or suspected COVID-19, and must include such information collected when ordering a laboratory test for the disease.[79]

<sup>17</sup> On Friday [April 24], for the first time, officials posted a list of [assisted living] sites with two or more cases. The list, like the one posted for nursing homes, only includes a range of cases for each assisted-living residence, not an actual number. And it doesn’t disclose deaths at the sites. But it shows 139, more than half the total, have two infections, including a dozen with 30 or more [6].

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Starting this week [week of April 20], skilled nursing facilities — serving an old and frail population at highest risk for the novel coronavirus — also will be required to report cases and deaths to the Centers for Disease Control and Prevention, where they'll be used as an “early predictor” of regions where the disease is spreading. [80]

On June 7, the legislature passed Chapter 93 of the Acts of 2020 requiring detailed data collection and reporting on COVID-19 cases, deaths, and testing, by city or town, demographics, occupation, and residence type (nursing home, assisted living facility, rest home, prison, psychiatric hospital, or other residential facility); and establishing a task force to consider racial, ethnic, and geographic disparities during the pandemic [81-83].<sup>18</sup> Detailed data reporting began almost immediately [78].

## Discussion: Extracting Lessons for Next Time

This document describes aspects of the tactics used by Massachusetts nursing homes, state agencies, and other organizations 1) to keep COVID-19 out of nursing homes, 2) to slow or stop its spread if it entered, 3) to stabilize nursing home staffing and other resources in the face of the COVID-19 onslaught, and 4) to monitor progress. This compendium of interventions was assembled from secondary sources only, which limits its scope and depth. Next steps should be to fill in important blanks so that we can better learn from this all-too-current history. These include examination of the effectiveness of implementation of the policies and evaluation of these interventions; and learning from variation in nursing home behavior, residents, and environment to identify whether anything worked against the virus as it attacked this vulnerable population.

### Were the interventions implemented as promulgated? Would closer collaboration with nursing homes help?

News reports contain only scattered references to how aspirational policies (testing and isolation protocols, PPE distribution, staff recruitment, deployment of emergency teams, enhanced infection control) were implemented on the ground in the face of short staffing, lack of access to tests and PPE, overloaded leadership, and the pre-COVID status of nursing home buildings, residents, and finance. Interviews of participants could tell the story of how nursing homes responded to directives and expectations, including barriers to implementation and unexpected (or expected) consequences of the various initiatives. The public record shows some instances of collaboration between state policy makers and the nursing homes, through the provider association; and a presentation of the public health initiatives of the first three months indicates support for and collaboration with nursing homes [29]. Yet the interventions stress metrics for accountability rather than support of nursing homes and their residents, reflected at the national level in the title of an article by nursing home experts: “We are Alone in this Battle.”

### Is it possible to discern which tactics were effective?

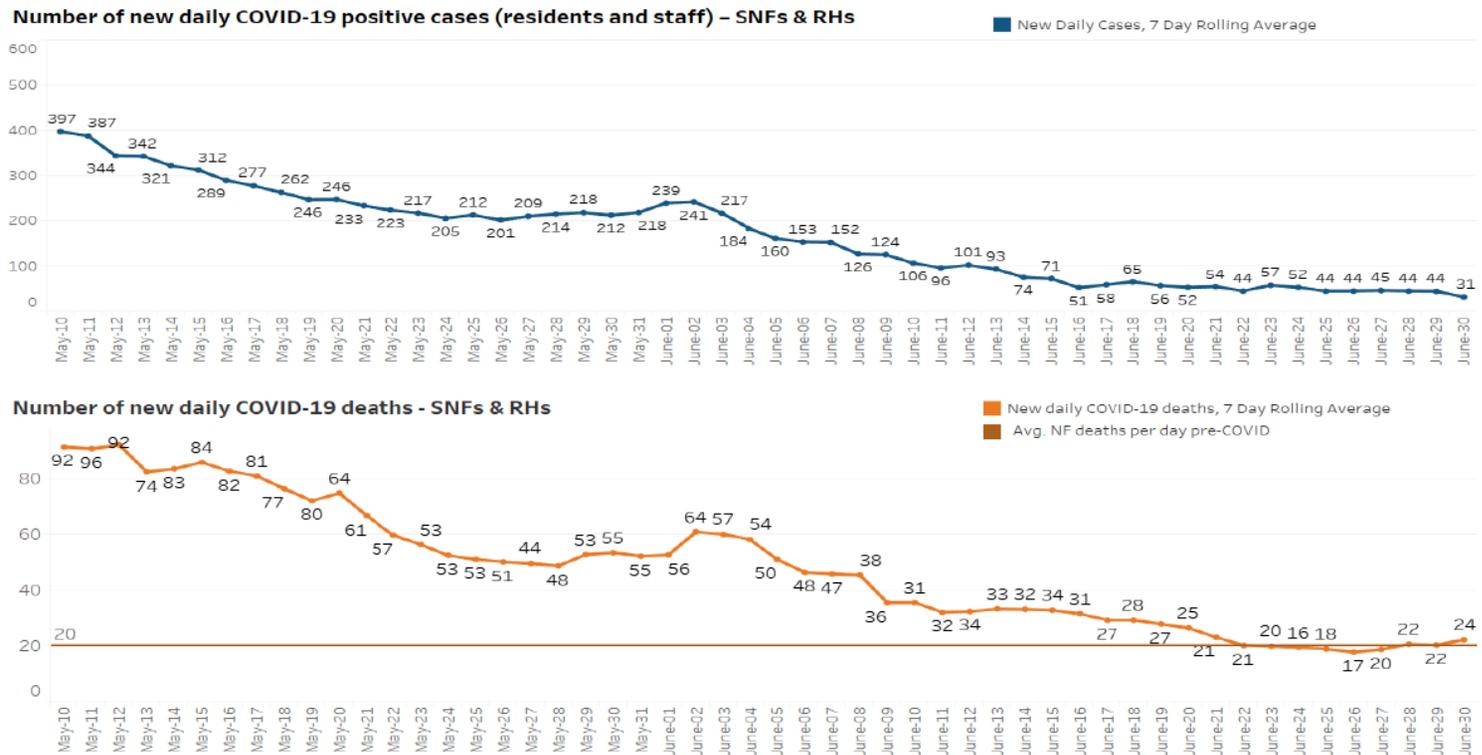
By the beginning of July, Massachusetts data show that the number of new infections and the daily number of deaths had fallen at last (Exhibit 6). One comparison is to the approximately 20 deaths per

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<sup>18</sup> Other resources on legislative history of this statute: [6, 81]

Exhibit 6: COVID-19 Cases and Deaths in Massachusetts Nursing Homes, May 10 through June 30

Source: [29]



Note: DPH began reporting both confirmed and probable COVID-19 cases and deaths as of 6/1/2020. Newly reported totals are a result of a retrospective review of probable cases and deaths dating back to March 1, 2020.

day that are said to typically occur annually in Massachusetts nursing homes and rest homes [29]. Although the disease entered almost all nursing homes, is it possible to tell whether certain approaches kept the disease from spreading, or returning after it had been controlled?

The sheer numbers of tests and items of protective gear provided by DPH increased throughout the period, as shown by the COVID-19 Dashboard data [84]. However, doubt was expressed early and often about whether testing was being employed in a strategic manner. Reports claimed that state-distributed PPE was in short supply [44], and some distributed by the Federal government was defective [46]. Numbers alone are not enough for accountability or effectiveness.

⇒ What can be learned from nursing homes that kept the disease out, or that limited its spread even when infected?

A handful of nursing homes have not had a single COVID-19 death. Explanations are hard to come by, and administrators named “luck” as a large factor.[31] This will surely be studied over the months ahead. Single rooms were named as one factor reducing spread.

Several leaders at facilities interviewed by the Globe said they stopped accepting new patients or dramatically reduced new admissions during the pandemic, a strategy that differed from some nursing homes. When patients were admitted, they were quarantined for 14 days.

Keeping infected workers out, a crucial hurdle, was one of the hardest to clear because the industry is built on the labor of low-wage employees who work several jobs. Still, some of the nursing homes persuaded their workers to commit to one facility until the crisis abates.

Workers at South Cove Manor at Quincy Point received a \$5 hourly pay raise, new admissions stopped, and all patients and employees were tested for the virus in March, said Bill Graves, the facility’s president and chief executive. Two workers contracted the virus, but recovered, he said. [31]

These approaches should be investigated in the context of the preliminary statistical findings that show that nursing home resident outcomes were affected and perhaps determined by the prevalence of disease in their neighborhood environment: a higher rate of infection in the county or community led to greater infection rates [47, 85-91] . Studies have looked for relationships between rates of infection and past staffing levels or quality indicators, but only one (to our knowledge) has found a correlation between quality and infection [92]; registered nurse staffing was found to deter infection in Connecticut nursing homes [93]; and nurse aide hours were associated with less risk once community spread was accounted for [91]. An analysis for New York State suggests that residents of nursing homes where workers bargain collectively face lower risk after adjusting for other factors; the authors identified union advocacy for worker safety as a mechanism, but better compensation and working conditions in a union home may also play a role through lower turnover [94]. Some of these early studies may not have accurately accounted for differential changes in occupancy brought about by COVID itself, especially the reduction in admissions for nursing homes that usually have high Medicare SNF censuses. All must be considered preliminary, because we are still in the midst of the crisis.

Researchers should examine variation in additional factors that might make a difference once the overwhelming impact of community spread is accounted for. These include the proportion of residents in single rooms, the number of nursing and therapy staff working in multiple nursing homes [95-97], the presence of experienced, long-tenure registered nurses especially directors

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of nursing, and the number of different staff, including contract workers, entering a home each day. Low occupancy and/ or spacious facilities might also allow isolation of residents. Consistent assignment, a practice that limits the number of different staff caring for each resident, might be associated with less spread across units in a nursing home. Well-trained leadership (directors of nursing, administrators, charge nurses) who have been in place for some time have been shown to make a difference for quality measures, and may have an impact on COVID spread. Unfortunately, timely data on these variables is not easily available.

### Would impact have been less if responsibility had been shared earlier?

The COVID-19 pandemic precipitated a public health emergency for residents of nursing homes and other residential LTSS settings, as it did for the population at large. The threat was “novel” like the corona virus itself, and considered unprecedented. Many states, including Massachusetts, have acted to protect nursing homes from liability for COVID-19.<sup>19</sup> Advocates disagree with sharp reductions in corporate liability for COVID-19 injuries and deaths of residents and staff [98, 99].

Yes, nursing homes should take responsibility for egregious errors and abysmal quality. But most were isolated in a solitary struggle with few resources and delays in collective leadership from public health authorities. As noted above, one administrator expressed this forcefully: “We are alone in this battle.” [100]. Hospitals were also stretched to the limit, but were able to shift resources from other activities.

In recent years, some hospitals participating to accountable care organizations (ACOs) have established closer relationships with skilled nursing facilities (SNFs) serving Medicare discharges. Massachusetts has a number of active ACOs. Part of governmental strategy to protect nursing homes in Ontario, Canada was to support partnerships with hospitals [101]. Are there examples where hospitals worked to support nursing home partners for common goals?

### Next Steps

The Task Force established by Chapter 93 of the General Laws will investigate what worked and what did not [81]. A citizens’ group set out an agenda for the Task Force suggesting issues to pursue [102]. Policy researchers have already carried out preliminary data analysis for selected areas [47, 89, 100, 103, 104].

This compendium paper ends with early ideas from the field about what might be attempted in the future, for the next pandemic, or the resurgence of this one

- Adequate funding so nursing homes have a resources cushion for an emergency
- Nursing home facilities supporting smaller groups of residents (“neighborhoods”) with single rooms and private baths; dedicated staff (consistent assignment) – hallmarks of culture change [105]

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<sup>19</sup> “The measure to indemnify such facilities from liability, which Governor Charlie Baker signed on April 17, was classified as “an emergency law, necessary for the immediate preservation of the public health and convenience.”[98]

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- Stable nursing home workforce with pay enabling them to hold one job and benefits that enable them to stay home when sick
- Staff training and organization for infection control
- Government and community collective action to support, rather than blame and punish, nursing homes, including partnership with hospitals and other providers

These should be examined through deeper investigation of events and activities in Massachusetts and elsewhere.

Appendix Exhibit MA Facilities - Shortages in staff and PPE over time

	May 25	May 31	June 7	June 14
Shortage of Nursing Staff	21.51	19.89	17.83	16.93
Shortage of Clinical Staff	3.91	3.64	3.62	3.76
Shortage of Aides	25.98	23.25	23.12	21.00
Shortage of Other Staff	14.80	13.45	13.65	10.34
Any Current Supply of N95 Masks	97.21	97.20	98.05	98.43
One-Week Supply of N95 Masks	85.47	85.99	86.91	89.34
Any Current Supply of Surgical Masks	99.44	99.72	100.00	100.00
One-Week Supply of Surgical Masks	93.02	94.12	93.87	95.30
Any Current Supply of Eye Protection	99.72	100.00	100.00	100.00
One-Week Supply of Eye Protection	92.74	94.40	94.43	95.92
Any Current Supply of Gowns	98.04	97.76	98.33	98.12
One-Week Supply of Gowns	80.17	83.47	86.07	86.52
Any Current Supply of Gloves	99.72	99.72	99.72	99.37
One-Week Supply of Gloves	97.21	96.64	97.21	96.87
Any Current Supply of Hand Sanitizer	99.16	99.72	99.44	99.69
One-Week Supply of Hand Sanitizer	93.02	94.12	94.99	96.55
No supply of 1+ PPE type	5.03	5.04	3.62	3.76
<1 week supply of 1+ PPE type	23.18	21.85	17.55	15.05
Resident Access to Testing in Facility	99.72	99.72	99.72	100.00

Computed from Source: CMS-CDC reporting released 6/25/2020 DUKE

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