Mathematica
Progress Together

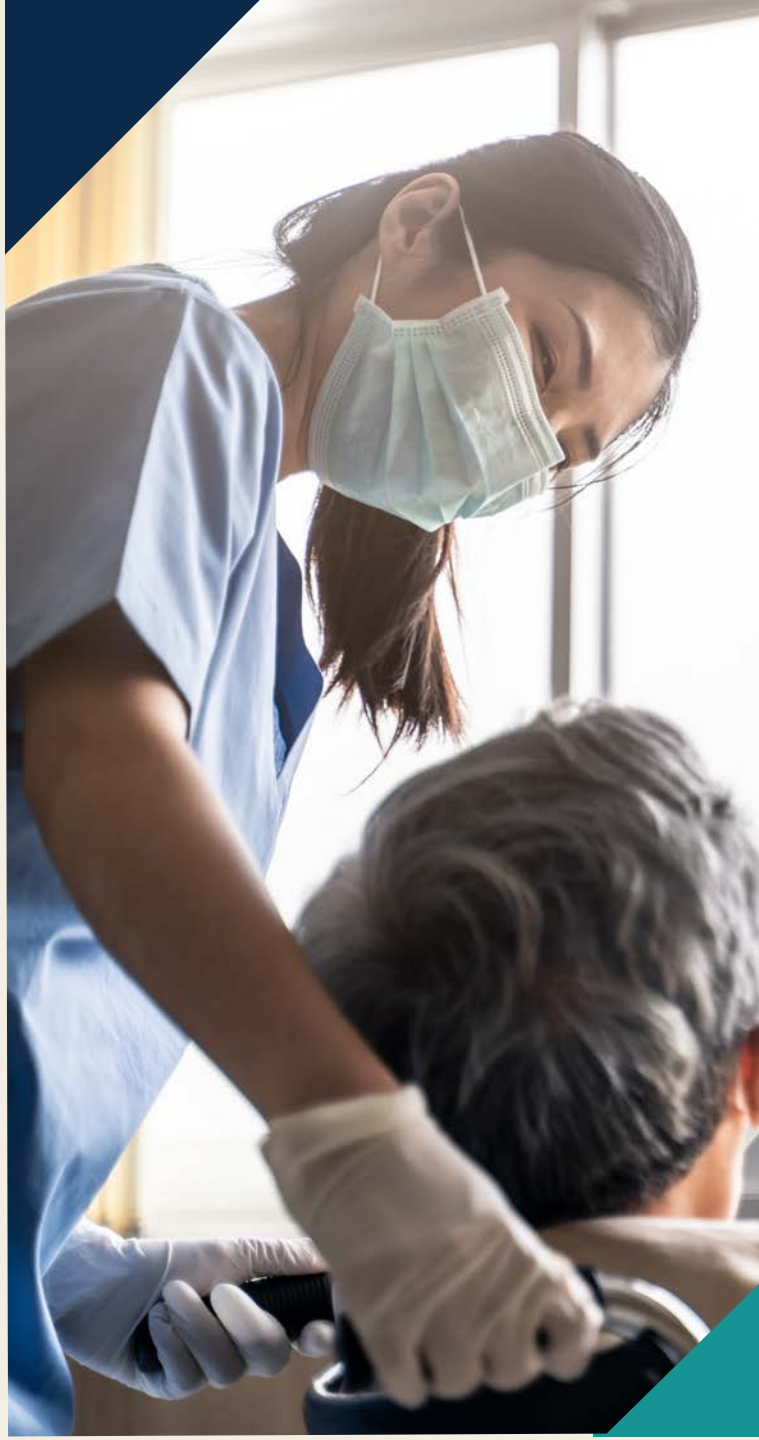
A Study of the COVID-19 Outbreak and Response in Connecticut Long-Term Care Facilities

Final Report

Executive Summary

September 30, 2020

DPH #2021-0041



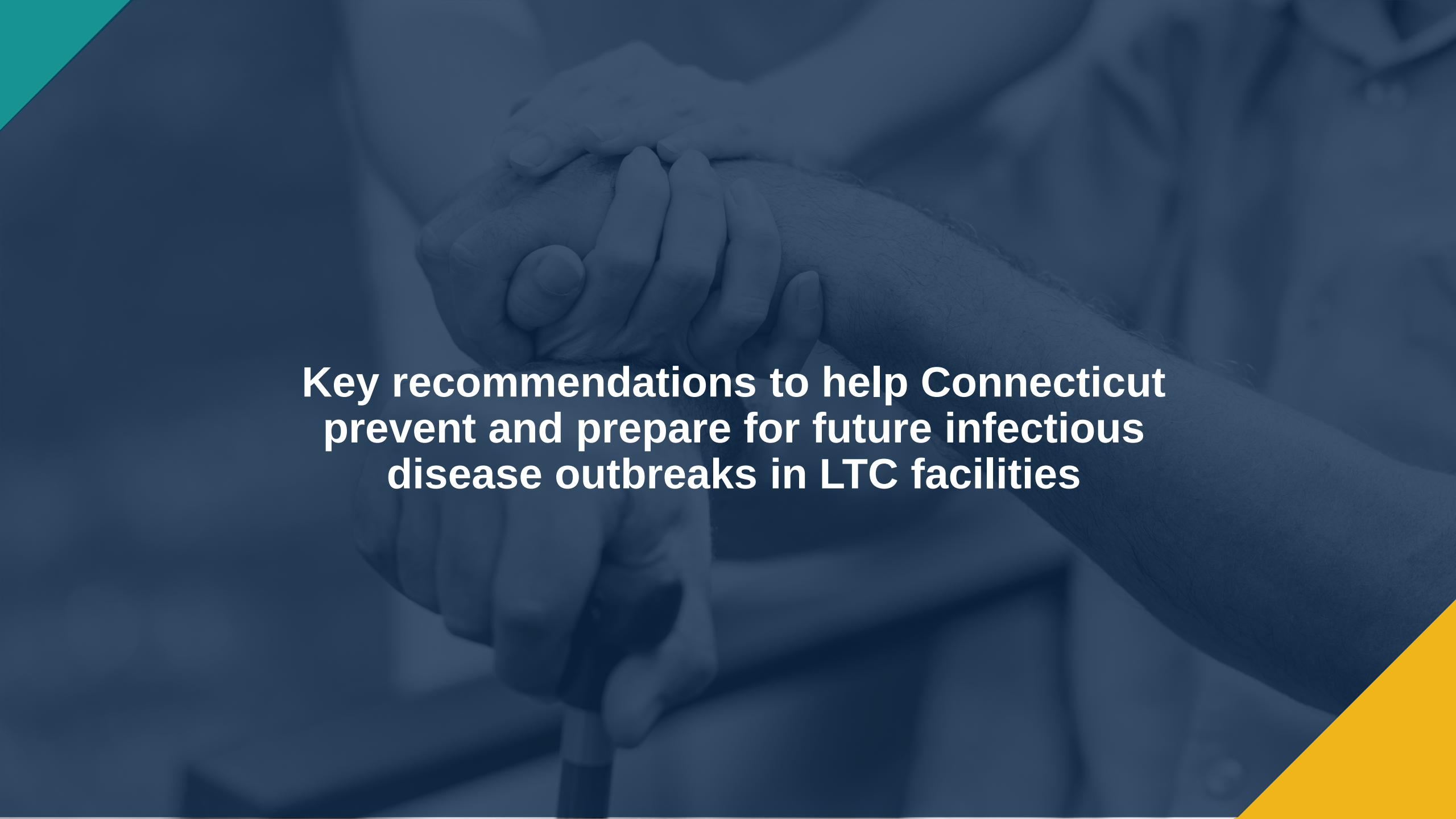
Purpose of the final report

This final report has three goals:

- Describe the impact of COVID-19 in Connecticut as a whole and in long-term care (LTC) facilities compared with other states in the region and the country.
- Assess the state and LTC industry's preparedness and response to the COVID-19 outbreak.
- Identify immediate and achievable steps the state and LTC industry can take to prepare for a second wave of COVID-19 and identify longer-term recommendations to prepare for future disease outbreaks in LTC facilities.

The final report is informed by the following:

- Mathematica's review of information provided by the Connecticut Department of Public Health (DPH) and other state agencies
- Mathematica's analysis of facility and resident-level data
- 52 interviews with 132 people conducted from July 13 to September 10, 2020
  - Appendix A of the final report contains the organizational affiliations of the people interviewed.



Key recommendations to help Connecticut prevent and prepare for future infectious disease outbreaks in LTC facilities

Key recommendations

- **The final report contains recommendations for the state and LTC industry across ten topics:**
  - Person-centered care
  - Surveillance and outbreak response
  - Emergency response
  - Screening and testing of residents and staff
  - Infection control
  - Long-term care staffing and workforce availability
  - State agency roles, expertise, and skills
  - Communication and coordination across state agencies, facilities, and support organizations
  - Care transitions
  - Reimbursement mechanisms
- **Overall, the report presents 23 short-term recommendations (SRs) and 22 longer-term recommendations (LRs).**

Dashboard of recommendations

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Recommendations

Person-centered care	
LTC facilities and their state regulators must balance strict measures designed to limit the spread of the virus with the need to support the physical, emotional, and psychosocial needs of LTC residents. [SR1]	Final report Section II.A
Facilities should ensure that resident care plans reflect COVID-19-specific impacts on individual residents. [SR2]	Final report Section IV.B.2.d
Facilities should continuously assess the appropriateness of any policy that restricts the movement of residents within their facility, with consideration of prevalence in each facility and stakeholder input. [SR3]	Final report Section II.A
Recognizing that visitation is an important resident right, the state should develop a framework to guide policies on the reopening of LTC facilities to visitors based on a set of criteria. The framework could be modeled on those developed by other states and would allow facilities to reopen based on meeting specified criteria at the facility and community levels, rather than a one-size-fits-all statewide policy that does not consider facility and local indicators. [SR4]	Final report Section IV.B.2.d
The state should work with facilities to designate essential caregivers (family members and private duty aides hired by the family) who have increased access to LTC facilities to fill a defined role for specific residents. [SR5]	Final report Section II.A

Recommendations

Surveillance and outbreak response	
DPH should continue infection control focused surveys, targeting more frequent surveys in nursing homes with ongoing or increasing infections. Surveyors should continue to provide real-time remedial instruction to facilities during surveys to ensure compliance with state regulations. [SR6]	Final report Section IV.A.2.c
DPH should ensure all temporary survey staff, including National Guard personnel, complete basic and ongoing training to conduct surveys consistently and thoroughly, including training on infection control and prevention. [SR7]	Final report Section IV.A.2.d
All Facility Licensing and Investigations Section (FLIS) staff or other personnel conducting in-person surveys in nursing homes should be regularly tested for COVID-19 to ensure that surveyors do not become a source of possible infection among residents or staff. [SR8]	Final report Section IV.A.2.c
The state should explore ways to reduce duplicate case reporting to minimize burden on facilities and the state and reduce the risk of data errors. Streamlining reporting requirements might help free facility, DPH, and contractor personnel toward efforts to strength infection control procedures. [LR1]	Final report Section IV.A.2.b
The state should make participation in the Mutual Aid Plan mandatory for assisted living communities. This would ensure that the state has immediate access to data from these facilities whenever there is a future activation of the state's Mutual Aid Plan. [LR2]	Final report Section IV.A.2.b
The state should make infection control training mandatory for the designated on-call nurses at assisted living service agencies. [LR3]	Final report Section IV.B.2.a

Recommendations

Emergency response	
The state should develop plans for a potential second wave in consultation with representatives from the state legislature, LTC industry and home and community-based services (HCBS) providers, residents, and family members. [SR9]	Final report Section IV.G.2.c
The state should continue its planning efforts to scale up COVID-19 recovery facility (CRF) capacity as needed and deploy it quickly in response to the scope and severity of a second wave. [SR10]	Final report Section IV.C.2.b
The state should explore executing per diem contracts for staff extenders now to ensure resources are available for a timely response to a potential second wave. [SR11]	Final report Section IV.B.2.b
The state should revise its emergency response plans to explicitly include LTC facilities and HBCS providers. The revised plans should recognize these settings and providers as critical health care assets and detail a specific response that addresses the unique risks and needs of individuals in those settings. [LR4]	Final report Section IV.C.1
Planning for and responding to future infectious disease outbreaks should include representatives of the LTC industry and HCBS providers. [LR5]	Final report Section IV.G.2.c
The state should explore creating a mechanism to redeploy furloughed licensed health care personnel from other settings to LTC facilities and HCBS providers during future outbreaks. For example, if outpatient clinics are closed or staff are furloughed as a result of decreased demand, those staff could be redeployed to other settings. A similar mechanism was successful in Massachusetts. [LR6]	Final report Section II.C.2

Recommendations

Screening and testing of residents and staff	
DPH should continuously revisit its guidance on testing LTC facility residents and staff as new information becomes available or testing guidance from the CDC evolves. [SR12]	Final report Section II.C.2
DPH should continue to assess the Care Partners testing program to ensure that it meets its intended goals. DPH should also allow for some flexibility for facilities to continue using their existing lab relationships as appropriate. [SR13]	Final report Section IV.E.1
As new testing technology receives Food and Drug Administration approval the state should continue to review its Medicaid reimbursement to ensure they incentivize efficient use of resources. [LR7]	Final report Section IV.E.1
Our analysis found increased risk of contracting COVID-19 among residents who frequently leave the facility for dialysis or other outpatient treatment. Facilities should consider increasing the testing frequency of these residents at higher risk, beyond current requirements. [LR8]	Final report Section III.B.2
The state should issue guidance on recommended screening and testing strategies for visitors to LTC facilities, as visitation policies are expanded and the change in seasons limits the ability to conduct outdoor visits. [LR9]	Final report Section IV.B.2.d

Recommendations

Infection control	
Due the role of community prevalence driving COVID-19 outbreaks in facilities, everyone living in or visiting Connecticut should continue to heed guidance from the state and national authorities to ensure community spread remains low. [SR14]	Final report Section II.E
Facilities should consider the rooming assignments of high-risk residents on units in such a way that reduces exposure of others on the unit. [SR15]	Final report Section III.B.2
Facilities should ensure they have an adequate stockpile of PPE that is available and accessible to staff on every shift. [SR16]	Final report Section V.B.2.b
Connecticut should broaden qualifications for an infection preventionist and expand the role to full-time in all nursing homes. The state could broaden the training for infection preventionists to align with federal rules which state this position can have training in nursing, medical technology, microbiology, epidemiology, and other related fields. Medicaid payment rates should be adjusted to cover the added cost of full-time positions. [LR10]	Final report Section IV.B.2.a
The state should maintain a stockpile of PPE that is available to LTC facilities in case of future increases in COVID-19 or other infectious diseases that are accompanied by breakdowns in the supply chain and lack of availability from the Strategic National Stockpile. [LR11]	Final report Section V.C.1.b
As evidence emerges regarding the role of building design and ventilation, LTC facilities should consider changing their physical environments to better limit the spread of an airborne virus similar to COVID-19. The state should support these building renovations by guaranteeing loans for facilities. [LR12]	Final report Section V.B.2.d
When vaccines to provide immunity to COVID-19 become available and are proven to be safe and effective for vulnerable populations, state distribution plans should designate LTC residents and staff as having priority to receive them. [LR13]	Final report Section II.E

Recommendations

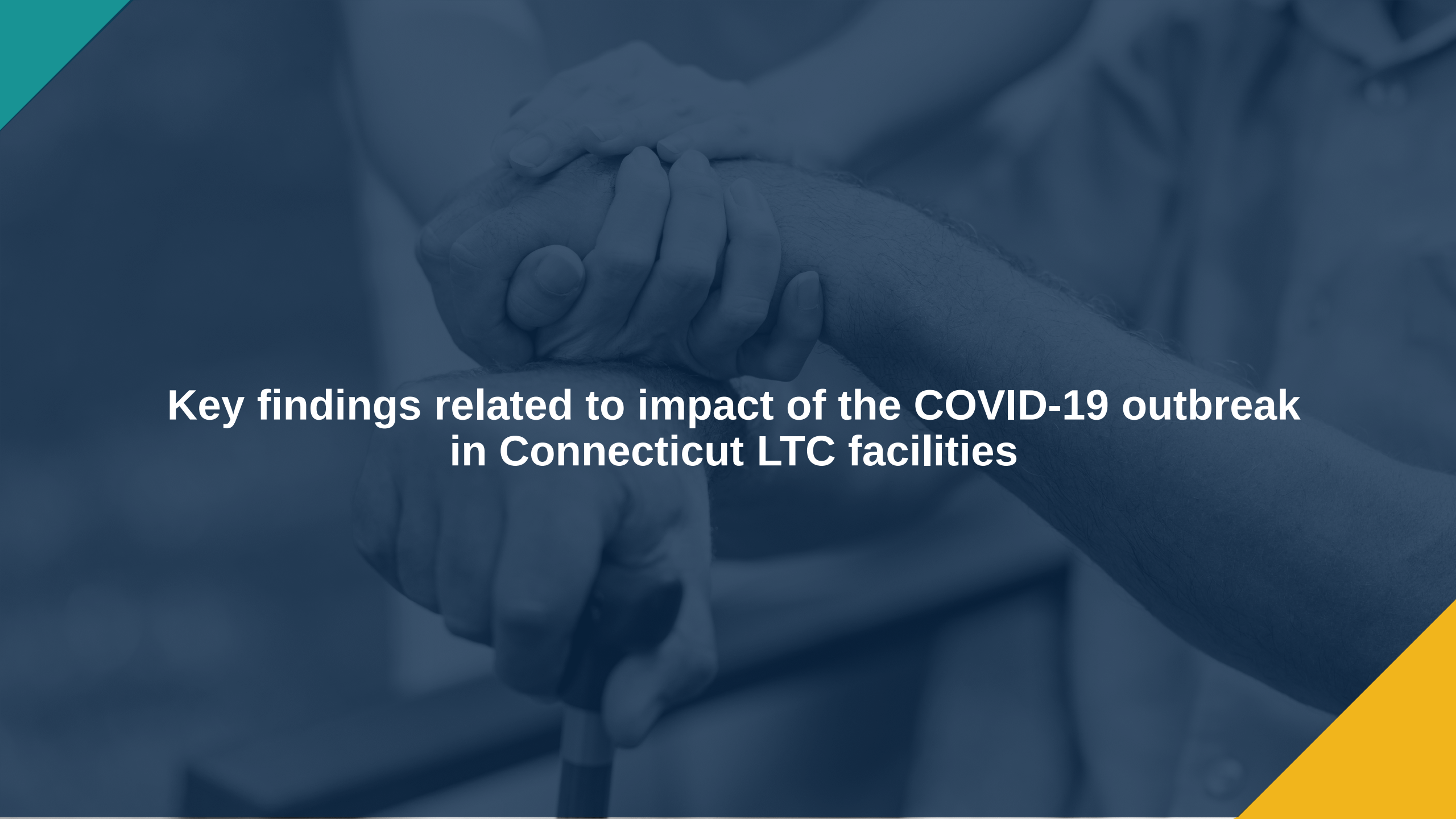
Long-term care staffing and workforce availability	
Facilities should adopt staffing policies that can help limit potential exposure for staff and residents, such as using two 12-hour shifts and increasing full-time staff positions to limit staff working in multiple facilities. [SR17]	Final report Section V.C.2.c
The state should extend the temporary suspension of in-state licensure requirements for as long as the public health emergency is in effect. [SR18]	Final report Section V.C.2.a
Connecticut should increase the minimum required staffing ratios in nursing homes and consider financing mechanisms to raise the Medicaid reimbursement rate to support greater increases in direct care workers' pay and benefits. [LR14]	Final report Section V.C.1.b
The state should ensure that all LTC facility staff and HCBS providers have access to guaranteed paid sick time under the state's existing paid sick leave regulations. [LR15]	Final report Section V.C.2.a
If any nursing homes close due to declining occupancy rates as a result of COVID-19, the state should work with local colleges and universities to facilitate opportunities for staff retraining in HCBS jobs. [LR16]	Final report Section II.F

Recommendations

State agency roles, expertise, and skills	
The state should designate qualified staff or contractors that can provide technical assistance to LTC facilities regarding infection control guidelines. [SR19]	Final report Section IV.B.1.a
The state should conduct a comprehensive assessment of DPH staffing needs, including number of staff, skills required for topics including infection control and emergency response, and interaction with groups within and outside of DPH. [LR17]	Final report Section IV.D
Communication and coordination	
DPH should supplement its weekly calls with LTC facilities by providing written summaries following each call and archiving guidance in a central place (for example, via “Blast Faxes” or the Mutual Aid Plan website). [SR20]	Final report Section IV.G.2.b
Facilities should ensure family members can obtain accurate and timely information on residents’ health and well-being by providing weekly updates on the situation in each facility and designating a single point of contact for family members to request updates on individual residents. [SR21]	Final report Section V.G.2.b
The state’s Long-Term Care Planning Committee, comprising elected officials and state agency representatives, should increase the frequency of meetings and add agenda topics related to the COVID-19 response moving forward. [LR18]	Final report Section IV.D

Recommendations

Care transitions	
Connecticut Department of Social Services (DSS) and contracted access agencies should work with hospitals to facilitate discharge of older adults and people with disabilities with COVID-19 to home and community-based settings, rather than nursing homes, with appropriate home health and other supports and care coordination. [SR22]	Final report Section V.F
The state should ensure that all LTC residents receive counseling on their options to receive services in the community and support those who want return to the community. [LR19]	Final report Section V.F
The state should support nursing homes that want to develop business plans to repurpose their facilities to provide community-based care. [LR20]	Final report Section V.F
Reimbursement mechanisms to support increased LTC system costs	
The state should continue to assess how it supports facilities with the cost of widespread resident and staff testing. [SR23]	Final report Section V.E.2
The state should ensure the ongoing cost of nursing facility resident and staff COVID-19 testing, as well as PPE, are adequately covered by the state's Medicaid reimbursement rates. [LR21]	Final report Section IV.F.2
The state should consider tying a component of Medicaid reimbursement for LTSS in nursing facilities, and in home and community-based settings, to provider performance on quality metrics such as those used to calculate the CMS star ratings. [LR22]	Final report Section II.J



Key findings related to impact of the COVID-19 outbreak in Connecticut LTC facilities

Certain nursing home characteristics were correlated with COVID-19 outcomes

Nursing home characteristics	Number of cases per licensed bed	Number of deaths per licensed bed
Town cases per 100,000 residents	+*	+*
Town median household income	+*	+*
Profit status	+	+
Chain affiliation	+	+
High health inspection rating	–	–
High staff rating	–*	–*
High quality measure rating	+	+
Total residents as of 3/9/20	+*	+*
Share of licensed beds filled as of 3/9/20	+*	+*

Note: See Exhibit 6 in the final report for full details of this analysis.

- **Nursing homes with greater exposure to COVID-19 in the surrounding community had more cases and deaths.**
- **Nursing homes with higher staffing ratings were better able to limit the spread of COVID-19.**
- **All these characteristics were important to understanding the variation in cases or deaths across nursing homes and were therefore included in the regression model.**

+ correlated with more cases or deaths
– correlated with fewer cases or deaths
*** statistically significant at the 10 percent level**

Receiving care in the community increased the likelihood of COVID-19 cases and deaths

Resident characteristics	Number of cases per licensed bed	Number of deaths per licensed bed
Male	+	+
Getting dialysis or cancer treatments	+*	+*
Had a recent fall	+	+
Had a recent pressure ulcer	+*	+*
Had any depressive symptoms	–	–*
Lost control of bladder	–	+

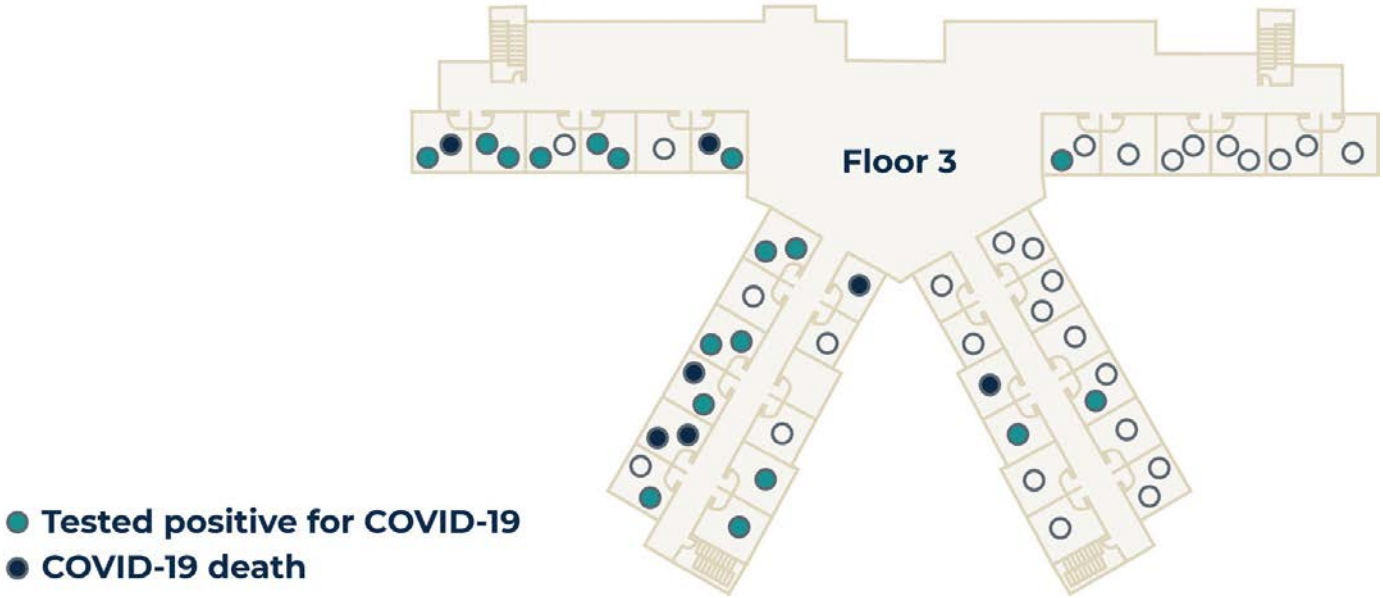
Note: See Exhibit 6 of the final report for full details of this analysis. Characteristics are the average for all residents in each nursing home as of March 9, 2020.

- **Nursing homes with more residents who left the facility for medical treatments had more cases and deaths.**
- **Average age and racial/ethnic composition of residents were not important to understanding variation in outcomes.**
- **All these characteristics were important to understanding the variation in cases or deaths across nursing homes and were therefore included in the regression model.**

+ correlated with more cases or deaths
– correlated with fewer cases or deaths
*** statistically significant at the 10 percent level**

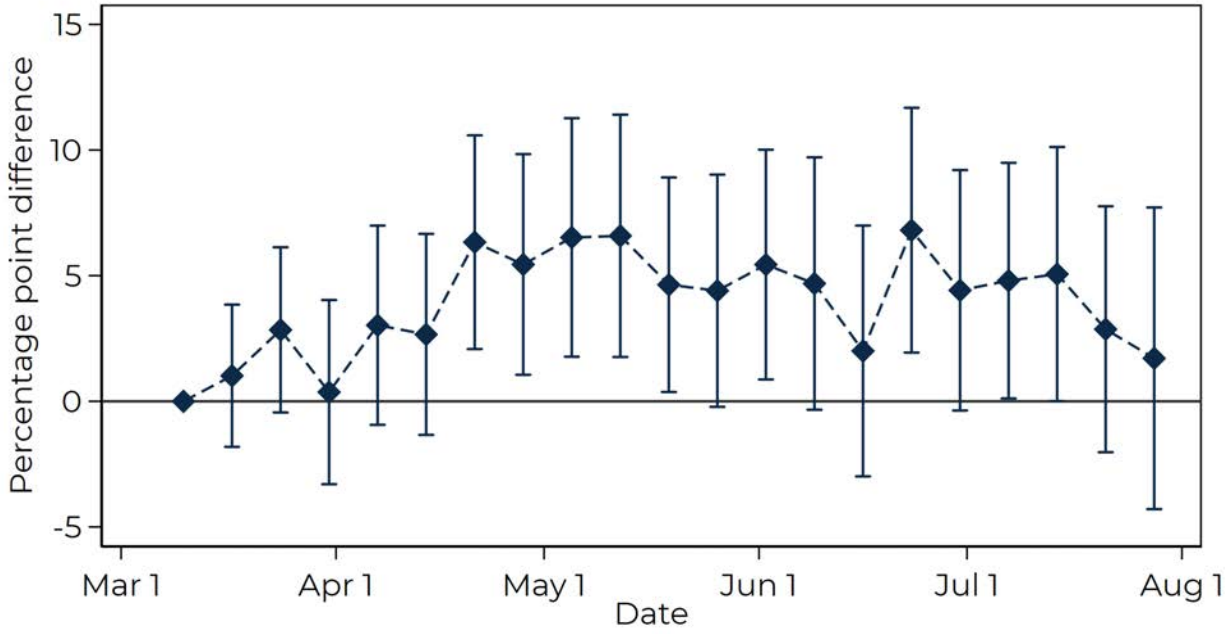
Case study: COVID-19 cases and deaths in one nursing home

- **This case study underscores the ability to limit the extent of an outbreak within a facility.**
- **Staff and physical proximity to others who became infected might play an important role in the spread of COVID-19.**
- **However, risk of contracting COVID-19 in each facility is random to some extent.**



Note: See Exhibit 7 in the final report for full details of this analysis.

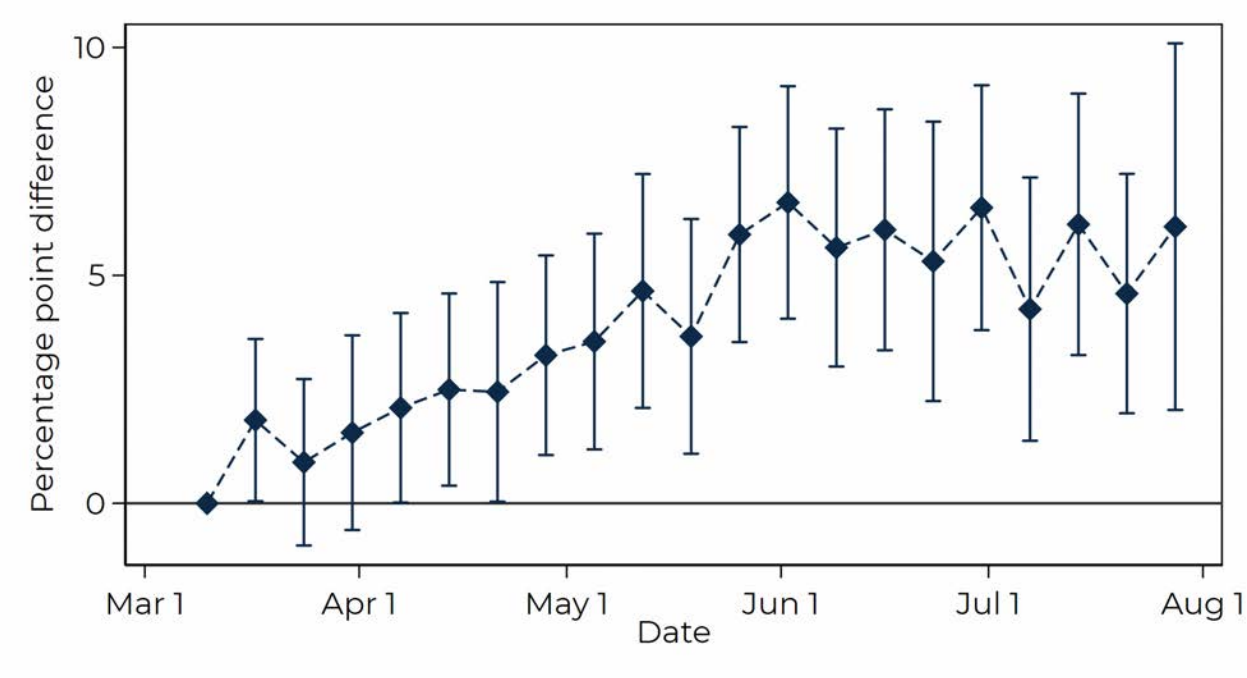
Prevalence of any depressive symptoms increased by 7 percentage points after the peak of the COVID-19 outbreak



Note: See Exhibit 11 in the final report for full details of this analysis. The sample includes people who lived in the nursing home as of March 9, 2020 and includes all subsequent observations. Bars represent the 95 percent confidence interval accounting for standard errors clustered at the nursing home level.

- **In the week of March 10, 46 percent experienced any depressive symptoms.**
- **As of mid-April, this percentage rose by 7 percentage points (a relative increase of 15 percent).**
- **The prevalence of any depressive symptoms declined slightly from this peak by mid-May, when Connecticut started to allow visitors again in an outdoor setting.**

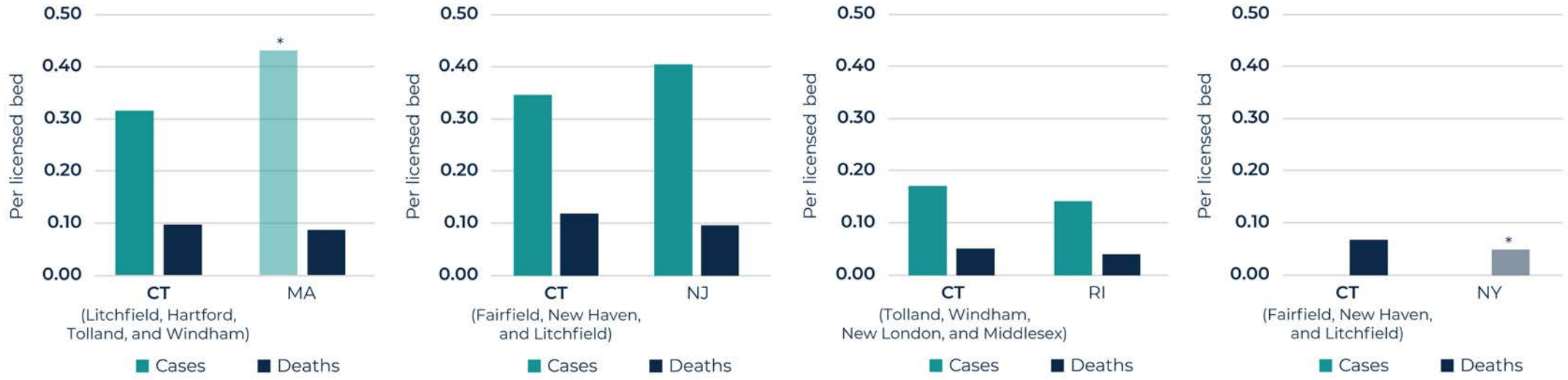
Rates of unplanned weight loss nearly doubled after the peak of the COVID-19 outbreak



Note: See Exhibit 12 in the final report for full details of this analysis. The sample includes people who lived in the nursing home as of March 9, 2020 and includes all subsequent observations. Bars represent the 95 percent confidence interval accounting for standard errors clustered at the nursing home level.

- **The increase in unplanned substantial weight loss indicates faster physical deterioration.**
- **Though weight loss was higher among residents who contracted COVID-19, those who did not get sick also had meaningful increases in weight loss.**

Total nursing home cases and deaths per licensed bed did not vary much across nearby states after adjusting for facility characteristics



Note: We shade the bars to be more transparent for cases in Massachusetts and deaths in New York because of data limitations surrounding these estimates that suggest the results should be interpreted with caution. See Exhibit 10 in the final report for the complete details of this analysis.

* statistically significant difference from Connecticut at the 5 percent level.

Impact of COVID-19 in assisted living facilities

- **Key findings related to the impact of the COVID-19 outbreak in Connecticut assisted living facilities have not changed since the interim report.**