

ASSEMBLY BILL NO. 281—ASSEMBLYMEN GORELOW;
ANDERSON, CARTER, COHEN, DURAN AND NGUYEN

MARCH 14, 2023

Referred to Committee on Health and Human Services

SUMMARY—Revises provisions governing senior living facilities.
(BDR 40-457)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State: No.

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EXPLANATION – Matter in *bolded italics* is new; matter between brackets [omitted-material] is material to be omitted.

AN ACT relating to health care; requiring the administrator of a senior living facility to ensure a senior living facility is equipped with functional ventilation and filtration systems; establishing requirements for the assessment of and any improvement to such ventilation and filtration systems; requiring certain personnel to complete an assessment report on such a ventilation or filtration system; requiring the administrator of a senior living facility to prepare a report on such a ventilation or filtration system; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing law sets forth various requirements for certain medical facilities that provide care to persons who are aged or infirm, including, without limitation, a facility for intermediate care, facility for skilled nursing, a residential facility for groups and a home for individual residential care. (Chapter 449 of NRS) This bill establishes requirements for the ventilation and filtration systems of a senior living facility.

Section 7 of this bill defines "senior living facility" as any facility that receives any federal funding from Medicare, Medicaid or other federal health care program and which provides living assistance and related care to a resident of the facility who is an aged or infirm person, including, without limitation, a facility for intermediate care, facility for skilled nursing, a residential facility for groups and a home for individual residential care. **Sections 3-6** of this bill define other terms related to ventilation systems in senior living facilities.

Section 9 of this bill sets forth a legislative declaration relating to ventilation and filtration systems in senior living facilities.



Section 10 of this bill requires, to the extent money is available, the administrator of a senior living facility to ensure that the senior living facility is equipped with a functional ventilation system and to have an assessment of the existing system conducted by qualified adjusting personnel or qualified testing personnel.

Sections 11-14 of this bill set forth the requirements for qualified adjusting personnel or qualified testing personnel to assess and perform updates to: (1) a filtration system of a senior living facility; (2) the ventilation rates of a senior living facility; (3) the ventilation system of a senior living facility; and (4) the carbon dioxide monitors in a senior living facility.

Section 15 of this bill sets forth requirements for an assessment of a senior living facility with a limited ventilation system or no ventilation system. **Section 16** of this bill requires qualified adjusting personnel or qualified testing personnel to prepare an assessment report, including certain information relating to the assessments conducted pursuant to **sections 11 to 14**.

Section 17 of this bill requires the administrator of a senior living facility to prepare a report on the work performed by qualified adjusting personnel or qualified testing personnel pursuant to **sections 11-15** and to make the report available to the Office of Energy upon request.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN
SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 449 of NRS is hereby amended by adding thereto the provisions set forth as sections 2 to 17, inclusive, of this act.

Sec. 2. *As used in sections 2 to 17, inclusive, of this act, unless the context otherwise requires, the words and terms defined in sections 3 to 8, inclusive, of this act have the meanings ascribed to them in those sections.*

Sec. 3. *“Apprenticeship program” means an apprenticeship program approved by the State Apprenticeship Council created by NRS 610.030.*

Sec. 4. *“Minimum efficiency reporting value” means the minimum efficiency reporting value established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, or its successor organization.*

Sec. 5. *“Qualified adjusting personnel” means a:*

1. Technician certified to test, adjust and balance ventilation systems through a program accredited by the Associated Air Balance Council, the National Environmental Balancing Bureau or the Testing, Adjusting and Balancing Bureau, or their successor organizations; or

2. Skilled and trained workforce under the supervision of a technician certified to test, adjust and balance ventilation systems through a program accredited by the Associated Air Balance Council, the National Environmental Balancing Bureau or the



1 *Testing, Adjusting and Balancing Bureau, or their successor*
2 *organizations.*

3 **Sec. 6. "Qualified testing personnel" means:**

4 1. *A technician certified to test, adjust and balance*
5 *ventilation systems through a program accredited by the*
6 *Associated Air Balance Council, the National Environmental*
7 *Balancing Bureau or the Testing, Adjusting and Balancing*
8 *Bureau, or their successor organizations; or*

9 2. *A person certified to perform assessments of ventilation*
10 *systems through a program accredited by the American National*
11 *Standards Institute.*

12 **Sec. 7. "Senior living facility" means any facility that**
13 *receives any federal funding from Medicare, Medicaid or other*
14 *federal health care program and which provides living assistance*
15 *and related care to a resident of the facility who is an aged or*
16 *infirm person including, without limitation, a facility for*
17 *intermediate care, facility for skilled nursing, residential facility*
18 *for groups or home for individual residential care.*

19 **Sec. 8. "Skilled and trained workforce" means a workforce**
20 *not less than 60 percent of which is composed of graduates of an*
21 *apprenticeship program.*

22 **Sec. 9. The Legislature finds and declares that:**

23 1. *Studies have found:*

24 (a) *Most ventilation systems are improperly installed; and*

25 (b) *Many of the problems with ventilation systems are linked to*
26 *the use of inadequately trained personnel to install, test, adjust*
27 *and balance ventilation systems.*

28 2. *Ventilation systems should operate as efficiently as*
29 *possible and inspections and repairs should be performed by*
30 *qualified personnel.*

31 3. *In addition to increasing the risk of infectious, airborne*
32 *diseases, inadequate ventilation systems in senior living facilities*
33 *negatively impact the health of residents and staff in senior living*
34 *facilities.*

35 4. *Improving indoor air quality in senior living facilities may*
36 *protect the health of residents and staff, reduce the risk of*
37 *infectious, airborne diseases and save energy.*

38 5. *Senior living facilities should have functioning ventilation*
39 *systems that meet or exceed recommended health and safety*
40 *standards.*

41 6. *Consistent statewide standards for senior living facilities*
42 *are necessary to protect the health and safety of residents and*
43 *staff.*

44 **Sec. 10. 1. To the extent that money is available, the**
45 *administrator of a senior living facility shall ensure that the senior*



1 *living facility is equipped with a functional ventilation system that*
2 *is tested, adjusted and, if necessary or cost-effective, repaired,*
3 *upgraded or replaced to increase efficiency and performance.*
4 *Money shall be considered available if the senior living facility:*

5 *(a) Receives federal or state money and allocates such money*
6 *to equip the senior living facility with a functional ventilation*
7 *system or improve the ventilation system or indoor air quality in*
8 *the senior living facility; or*

9 *(b) As a condition of receiving federal or state money is*
10 *required to ensure the senior living facility is equipped with a*
11 *functional ventilation system or improve the ventilation system or*
12 *indoor air quality in the senior living facility.*

13 *2. The administrator of the senior living facility or any other*
14 *person that ensures the senior living facility is equipped with a*
15 *functional ventilation system pursuant to this section shall employ*
16 *qualified adjusting personnel or qualified testing personnel to*
17 *assess the status of and make any necessary improvements to the:*

18 *(a) Filtration system of the senior living facility in accordance*
19 *with the provisions of section 11 of this act;*

20 *(b) Ventilation rates of the senior living facility in accordance*
21 *with the provisions of section 12 of this act;*

22 *(c) Ventilation system of the senior living facility in*
23 *accordance with the provisions of section 13 of this act; and*

24 *(d) Carbon dioxide monitors at the senior living facility in*
25 *accordance with the provisions of section 14 of this act.*

26 *3. The administrator of a senior living facility or any other*
27 *person that ensures a senior living facility is equipped with a*
28 *functional ventilation system pursuant to this section shall have*
29 *performed any work required to meet the minimum requirements*
30 *for ventilation and filtration established by sections 2 to 17,*
31 *inclusive, of this act, up to an estimated cost of not more than*
32 *\$200,000. The administrator may have performed any additional*
33 *recommended work that exceeds an estimated cost of \$200,000.*

34 **Sec. 11.** *In assessing a filtration system of a senior living*
35 *facility pursuant to section 10 of this act, qualified adjusting*
36 *personnel or qualified testing personnel, as applicable, shall:*

37 *1. Review the capacity and airflow of the filtration system to*
38 *determine the type of filters with the best minimum efficiency*
39 *reporting value based on industry standards that can be installed*
40 *without adversely impacting the filtration system;*

41 *2. Ensure that the filters used in the filtration system are of*
42 *the type determined pursuant to subsection 1 with the best possible*
43 *minimum efficiency reporting value;*

44 *3. Ensure that the filters are properly installed and replace or*
45 *upgrade the filters as needed;*



4. If a filtration system uses ultraviolet germicidal irradiation to disinfect air, ensure that the ultraviolet bulb is operating properly and does not shine on the filters, and replace the ultraviolet bulbs as needed;

5. If a filtration system uses an economizer, test and repair the economizer dampers; and

6. Recommend any additional maintenance, replacements or upgrades to improve the overall performance of the filtration system.

Sec. 12. 1. In assessing the ventilation rates of a senior living facility pursuant to section 10 of this act, qualified adjusting personnel or qualified testing personnel, as applicable, shall:

(a) Ensure that the ventilation rates in each room of the facility that is routinely occupied meet the minimum requirements for ventilation rates set forth in the Uniform Mechanical Code;

(b) Calculate the required minimum outside air ventilation rates for each room of the facility that is routinely occupied based on the maximum anticipated rate of occupancy and the minimum required ventilation rate per occupant in accordance with the Uniform Mechanical Code;

(c) Ensure that the minimum outside air ventilation rates meet the required minimum rate calculated pursuant to paragraph (b);

(d) If the minimum outside air ventilation rates do not meet the required minimum rate calculated pursuant to paragraph (b):

(1) Determine whether additional ventilation can be provided without adversely impacting the performance of the filtration system or the environmental quality of the building; and

(2) If additional ventilation can be provided, adjust the ventilation rates to meet the required minimum rate;

(e) If the minimum outside air ventilation rate cannot be met after adjusting the ventilation rates pursuant to paragraph (d), explain why the rate cannot be met;

(f) Conduct survey readings of the inlets and outlets to:

(1) Ensure that ventilation is reaching the served zone and is adequately distributed;

(2) Ensure that the inlets and outlets are balanced to be tolerated by the design of the filtration systems;

(3) Document read values and deficiencies; and

(4) If the original values of the design of the filtration system for inlets and outlets of the filtration system are not available, document the available information and note the unavailability of the original values;

(g) Ensure that there is a positive pressure differential between the building and the outdoors, that the building is not overly pressurized and that rooms designated for temporary occupation



by sick residents or staff maintain a negative pressure differential or a pressure differential otherwise set forth by the applicable industry standards;

(h) Ensure that the coil velocities and the coil and unit discharge air temperatures maintain the desired indoor conditions and avoid moisture carryover from the cooling coils;

(i) Ensure that the separation between the outdoor air intakes and the exhaust discharge outlets is in accordance with the Uniform Mechanical Code;

(j) Verify that the air handling unit is bringing in outdoor air and removing exhaust air as intended by the design of the filtration system;

(k) Measure the air volume for the exhaust fans and document any discrepancies in volume between the measurements and the original volume of the design of the filtration system;

(l) Verify that the coil condition, condensate drainage, air temperature differentials of the cooling coils, operation of the heat exchangers and drive assembly meet applicable industry standards;

(m) Review the control sequences to verify that the systems will maintain the intended ventilation, temperature and humidity;

(n) Verify that daily flushes are scheduled in accordance with the standards set forth by the American National Standards Institute and the American Society of Heating, Refrigerating and Air-Conditioning Engineers and any applicable local or state guidance; and

(o) Ensure that the operation times and set points of the ventilation system and exhaust fans are in accordance with any applicable guidance set forth by the American National Standards Institute and the American Society of Heating, Refrigerating and Air-Conditioning Engineers and any applicable local or state guidance.

2. Except as otherwise provided in subsection 3, if a demand control ventilation system is installed at a senior living facility, qualified adjusting personnel or qualified testing personnel, as applicable, shall ensure that the set point for carbon dioxide is set to 800 parts per million or less.

3. Qualified adjusting personnel, qualified testing personnel or a licensed professional engineer shall disable a demand control ventilation system installed at a senior living facility and configure the overall ventilation system to meet the minimum requirements of sections 2 to 17, inclusive, of this act if:

(a) The demand control ventilation system does not maintain an average daily maximum carbon dioxide concentration of less than 1,100 parts per million;



(b) The administrator of the senior living facility, as applicable, determines that a public health crisis caused by an airborne illness is in effect; and

(c) Disabling the demand control ventilation system would not adversely affect the operation of the overall ventilation system, until the administrator determines that a public health crisis caused by an airborne illness is no longer in effect.

Sec. 13. In assessing the ventilation system of a senior living facility pursuant to section 10 of this act, qualified adjusting personnel or qualified testing personnel, as applicable, shall assess the overall performance of the ventilation system. If a ventilation system is broken, fails to meet the minimum requirements for ventilation established by sections 2 to 17, inclusive, of this act or is otherwise unable to operate at the level intended by the original design of the system, qualified adjusting personnel or qualified testing personnel, as applicable, shall recommend any necessary repairs or maintenance. Any repairs or maintenance to the ventilation system must be performed by a skilled and trained workforce.

Sec. 14. In assessing the carbon dioxide monitors of a senior living facility pursuant to section 10 of this act, qualified adjusting personnel or qualified testing personnel, as applicable, shall ensure that each room in the senior living facility is equipped with a carbon dioxide monitor that:

1. Is hardwired or plugged in and mounted to the wall at least 3 feet but not more than 6 feet above the floor and at least 5 feet away from any door or operable window;

2. Displays readings to appropriate personnel through a display on the monitor or through an application on an Internet website or a cellular phone;

3. Provides a visual notification, including, without limitation, through an indicator light, electronic mail, text message or an application on a cellular phone, when the concentration of carbon dioxide in the room reaches 1,100 parts per million or more;

4. Maintains a record of previous data that includes, without limitation, the maximum carbon dioxide concentration measured;

5. Has a range of 400 parts per million to 2,000 parts per million or more; and

6. Is certified by the manufacturer of the carbon dioxide monitor to be accurate within 75 parts per million at a carbon dioxide concentration of 1,000 parts per million and requires calibration not more than once every 5 years.

Sec. 15. 1. If a senior living facility has a limited ventilation system or no ventilation system, qualified adjusting



1 *personnel or qualified testing personnel, as applicable, shall*
2 *document existing conditions and provide a licensed professional*
3 *engineer with any information necessary for the licensed*
4 *professional engineer to make recommendations for upgrading or*
5 *installing a ventilation system.*

6 *2. Qualified adjusting personnel or qualified testing*
7 *personnel that conduct an assessment of a senior living facility*
8 *with a limited ventilation system or no ventilation system shall*
9 *determine whether carbon dioxide monitors that meet the*
10 *requirements of section 14 of this act are installed in each room of*
11 *the senior living facility.*

12 **Sec. 16.** *1. Qualified adjusting personnel or qualified*
13 *testing personnel, as applicable, shall prepare an assessment*
14 *report of any assessment performed in a senior living facility*
15 *pursuant to section 10 of this act. A licensed professional engineer*
16 *shall:*

17 *(a) Review the assessment report and determine if any:*

18 *(1) Additional adjustments or repairs are necessary to meet*
19 *the minimum requirements for ventilation and filtration*
20 *established by sections 2 to 17, inclusive, of this act; and*

21 *(2) Cost-effective upgrades for energy efficiency are*
22 *warranted; and*

23 *(b) Provide an estimated cost of any work required to meet the*
24 *minimum requirements for ventilation and filtration established*
25 *by sections 2 to 17, inclusive, of this act, up to an estimated cost of*
26 *not more than \$200,000 and an estimated cost of any additional*
27 *recommended work up to an estimated cost of not more than*
28 *\$200,000.*

29 *2. The assessment report must include, without limitation:*

30 *(a) The name and address of the person preparing the report*
31 *and the senior living facility where the assessments required*
32 *pursuant to section 10 of this act were performed;*

33 *(b) For each piece of equipment assessed, the model number,*
34 *serial number, general condition and any additional information*
35 *that could be used to assess options for replacements, repairs or*
36 *upgrades;*

37 *(c) Verification that the filters meet the best possible minimum*
38 *efficiency reporting values pursuant to subsection 2 of section 11*
39 *of this act or, if a filter does not meet the best possible minimum*
40 *efficiency reporting value, documentation of the current minimum*
41 *efficiency reporting value of the filter;*

42 *(d) Verification that the ventilation rates meet the*
43 *requirements set forth in section 12 of this act or, if the ventilation*
44 *rates do not meet the requirements, an explanation of why the*
45 *ventilation rates do not meet the requirements;*



(e) The measurements of air volume for the exhaust fans and the documentation of any discrepancies in volume between the measurements and the original volume of the design of the filtration system prepared pursuant to paragraph (k) of subsection 1 of section 12 of this act;

(f) Verification that each assessment conducted pursuant to sections 11 to 15, inclusive, of this act meets the requirements of the applicable section;

(g) If the minimum outside air ventilation rate cannot be met, the explanation of why the rate cannot be met prepared pursuant to paragraph (e) of subsection 1 of section 12 of this act;

(h) If the original values of the design of the filtration system for the inlets and outlets of the filtration system are not available, the documentation of the available information and the notation of the unavailability of the original values prepared pursuant to paragraph (f) of subsection 1 of section 12 of this act;

(i) Documentation of any deficiencies within any system assessed pursuant to section 10 of this act;

(j) Verification of the installation of carbon dioxide monitors pursuant to section 14 of this act, including, without limitation, the make and model of the carbon dioxide monitors;

(k) If applicable, documentation of the information prepared pursuant to section 15 of this act for a senior living facility with a limited ventilation system or no ventilation system; and

(l) Recommendations for additional maintenance, replacements or upgrades to improve the energy efficiency, safety or performance of any system assessed pursuant to section 10 of this act.

Sec. 17. 1. The administrator of a senior living facility or any other person that ensures a senior living facility is equipped with a functional ventilation system pursuant to section 10 of this act shall prepare a report on the status of the assessments performed pursuant to section 10 of this act and any maintenance, repairs or upgrades performed as a result of those assessments. The report must include, without limitation:

(a) The name and address of the person preparing the report and the senior living facility where the assessments required pursuant to section 10 of this act were performed;

(b) A description of the assessments performed pursuant to section 10 of this act and any maintenance, repairs or upgrades performed as result of those assessments;

(c) Verification that the administrator of the senior living facility, as applicable, has complied with the requirements of sections 2 to 17, inclusive, of this act;



(d) Verification that the filters meet the best possible minimum efficiency reporting values pursuant to subsection 2 of section 11 of this act or, if a filter does not meet the best possible minimum efficiency reporting value, documentation of the current minimum efficiency reporting value of the filter;

(e) Verification that the ventilation rates meet the requirements set forth in section 12 of this act or, if the ventilation rates do not meet the requirements, an explanation of why the ventilation rates do not meet the requirements;

(f) The measurements of air volume for the exhaust fans and the documentation of any discrepancies in volume between the measurements and the original volume of the design of the filtration system prepared pursuant to paragraph (k) of subsection 1 of section 12 of this act;

(g) Documentation of any deficiencies within any system assessed pursuant to section 10 of this act;

(h) Documentation of the initial operating verifications and adjustments, the final operating verifications and adjustments and any adjustments or repairs performed;

(i) Verification of the installation of carbon dioxide monitors pursuant to section 14 of this act, including, without limitation, the make and model of the carbon dioxide monitors;

(j) If applicable, documentation of the information prepared pursuant to section 15 of this act for a senior living facility with a limited ventilation system or no ventilation system; and

(k) Verification that all work has been performed by qualified adjusting personnel or qualified testing personnel or a skilled and trained workforce, as appropriate, which may include, without limitation, the provision of the name and, if applicable, certification number of any contractor, qualified adjusting personnel or qualified testing personnel who performed such work.

2. The administrator of a senior living facility shall maintain the report prepared pursuant to subsection 1 for at least 5 years and make a copy of the report available to the Office of Energy upon request.

