FINAL STATEMENT OF REASONS
FOR PROPOSED BUILDING STANDARDS
OF THE OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
REGARDING THE 2019 CALIFORNIA MECHANICAL CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 4

(OSHPD 05/19)

The Administrative Procedure Act requires that every agency shall maintain a file of each rulemaking that shall be deemed to be the record for that rulemaking proceeding. The rulemaking file shall include a Final Statement of Reasons. The Final Statement of Reasons shall be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

UPDATES TO THE INITIAL STATEMENT OF REASONS:

The Office of Statewide Health Planning and Development (OSHPD) finds that no revisions have been made which would warrant a change to the initial statement of reasons for the proposed actions associated with this rulemaking.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

OSHPD has determined that the proposed regulatory action WOULD NOT impose a mandate on local agencies or school districts.

OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S).

OSHPD received a comment from the State Fire Marshal and received various comments, objections, and recommendations for the proposed actions as noticed during the 45-Day Comment Period of April 10, 2020 through May 26,2020. A summary of the comments, objections, recommendations, and OSHPD responses are as follows:

Regarding Item #2, Section 1.10.4.
OSHPD 4.

Commenter(s): Greg Andersen, The Office of the State Fire Marshal

Commenter(s) Recommendation: Please withdraw the OSHPD 4. It is still in error. CDCR does not have the authority to adopt regulations. Also, CDCR does not have the authority to enforce. They have to comply to your regulations. They are self-monitored, but not an enforcing agency.

Agency Response: OSHPD accepts the recommendation and has withdrawn this amendment.

Regarding Item #4, Table 4-A of Final Express Terms.

Removal of outside air column from Table 4-A.

Commenter(s): Robyn Rothman, California Health Care Climate Alliance
The following submitted substantially similar or supporting comments:

Steven Guttmann
Abdel Darwich
Andy Woommavovah
Robyn Rothman
Jennifer Gunby
John Pappas
Ben Apolinario
David Thomsen
Matthew Ebejer
Ron Chin
Suzanne Kiely
Thomas Born
Tim McRae
Travis English
Gurdaver Singh

Commenter(s) Recommendation: The California Health Care Climate Alliance urges the state to postpone and further study the proposed changes prior to adoption. The changes have a significant energy and greenhouse gas emissions consequences, which has not been adequately examined. At a minimum, we recommend a multiple-agency review, involving OSHPD and the California Energy Commission (CEC). The state should look at the costs and benefits of the proposal from the perspectives of energy, safety, and public health.

- OSHPD has proposed to eliminate California's lower minimum air change rates for 100% outside air systems.
- This change will add roughly 1,230 million kBTU, 120,000 tons of CO2, and $25M of baseline energy cost annual to California hospitals. Maintaining the minimums at their current levels provides the opportunity for energy conservation and GHG reduction in California hospitals.

There has been no evidence to suggest that California hospitals have been less safe for patients or staff as a result of the current code, which has been in place since 1972. California's in-progress research project CEC PIR-16-004 has demonstrated air change rates above two ACH do not improve air quality in patient rooms.

Agency Response: Energy and carbon are not ignored in this decision. While proposing this adjustment to the California Mechanical Code (CMC), OSHPD has been working closely with the California Energy Commission (CEC) to ensure that new and future medical facilities in California comply with Title 24, Part 6. This already includes improvements in building envelope, lighting improvements and HVAC heavy equipment efficiency. Part 6 is the appropriate code for energy consumption requirements and OSHPD looks forward to working with the California Energy Commission in the future

on this. In fact, OSHPD continues to remove spaces from CMC Table 4-A allowing healthcare providers to take advantage of the reduced ventilation and air changes for those spaces per ASHRAE 62.1, including substantial reductions offered in that document like Section 6.2.5.2, "Short-Term Conditions". As we review designs for new medical facilities, we are surprised by the lack of interest in energy efficiency measures beyond the reduction of air being provided to the patients and staff. Missing from the designs are measures like thermal storage, solar thermal, and renewables. We are encouraged by the growing use of fuel cells and photovoltaic and will continue to assist healthcare providers and designers in their use. OSHPD looks forward to continued collaboration with CEC in this effort so that we may rely on their expertise.

Due to climate change, California now regularly endures worsening wildfire seasons each summer and fall. As the ambient air quality suffers from the resulting smoke, some hospitals that utilize 100% outside air systems choose to shut their HVAC systems completely off, resulting in health risks.

The reason why energy conservation in the healthcare setting has not historically been a global top priority is the higher goal of asepsis to protect all the many patients who are immunocompromised along with the obvious fact that healthcare facilities are expected to have infectious occupants. It has been accepted that more air changes in a space and more ventilation result in greater asepsis1,2,3. One factor for this is enhanced dilution of contaminates that may be emanated from an infectious patient via increased air changes in a space - a constant concern in the healthcare setting. In recent history in California we have faced a measles outbreak and currently a coronavirus outbreak. Due to immigration we remain vigilant for tuberculosis. While approximately 5% to 15% of AHIs are airborne1 all of the above diseases have airborne ramifications. Some estimate that airborne infections amount to roughly one-third of all hospital acquired infections (HAIs) 3.

We acknowledge that there is a need for more research regarding air change rates vs. HAIs. In fact, we assisted the CEC in the grant approval for the referenced research: CEC PIR-16-004. However, the results of that grant have not been published yet and have not been peer reviewed. We do think the preliminary findings from that work, as performed at Kaiser's South Bay Medical Center, are promising. Please note than when faced with the COVID-19 patient surge, the staff at South Bay preemptively terminated the reduced air changes being used in that study and immediately returned the facility to full-flow constant air volume operations in an effort to enhance safety.

Point #7 in the Nine Point Criteria for Title 24 Proposed Building Standards states, "The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate." ASHRAE 170-2008 establishes the design minimums required for CMS (Medicare) funding. OSHPD officially adopted ASHRAE 170 in the 2016 intervening code cycle. At that time IAPMO also included ASHRAE 170 as a ventilation requirement in the model mechanical code language. In its current state, Table 4-A in the California Mechanical Code allows air change rates that are below those listed in ASHRAE 170. Per request for interpretation

from a California healthcare provider to ASHRAE Technical Committee (Proposal Number 170-16-12-0001/002) the 170 Committee responded on April 13, 2017 that they did not agree that a reduction in total air changes per hour for 100% outdoor air systems was a correct interpretation. In light of that interpretation, OSHPD, as the authority having jurisdiction, evaluated three options; 1 - Remove the 100% OA column, 2 - place a remark in the code pointing out the risk of failing to qualify for CMS funding, or 3 - do nothing. OSHPD determined that option 1 is the most appropriate.

Please note that the reductions in the 100% outdoor air column of Table 4-A actually do include critical spaces. Operating rooms, cardiac catheterization labs and procedure rooms are subject to reductions per the current 100% outdoor air column. Patients with a surgical site infection have a 2 to 11 times higher risk of death4. JCHO EC.02.05.01 #15 does not eliminate any space in a healthcare facility in terms of meeting air flow minimum requirements.

Analysis of the nine-point criteria yields the following:

1. Proposed building standards do not conflict with other building standards. To this end OSHPD adopted ASHRAE 170 in the 2016 Intervening Code Cycle.
2. Proposed building standards are within the parameters established by enabling legislation and are not expressly within the exclusive jurisdiction of another agency. OSHPD will continue to work with the CEC on energy efficiency as that is their jurisdiction.
3. The applicable national specifications, published standards, and model codes have been incorporated. ASHRAE 170 is the national standard for ventilation in healthcare.

1. ASHRAE, 2019 ASHRAE Handbook - HVAC Applications, 2019, Chapter 9
2. Noakes, Applying the Wells-Riley equation to the risk of airborne infection in hospital environments, University of Leeds
3. Fernstrom, Aerobiology and Its Role in the Transmission of Infectious Diseases, 2013, Journal of Pathogens
4. Spagnolo, et.al, Operating theatre quality and prevention of surgical site infections, Journal of Preventive Medicine and Hygiene, 2013

DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS

OSHPD has determined that no alternative would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected private persons than the adopted regulation. The proposed regulations will not have a cost impact to private persons.

REJECTED PROPOSED ALTERNATIVE THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES:

OSHPD has determined that the proposed regulations will not have an adverse economic impact on small businesses. The proposed regulations are technical modifications that will provide clarification and consistency within the code.