

# **Estimated Cost of Applying the 2014 vs. the 2010 FGI *Guidelines for Design and Construction Requirements* to Hospitals and Outpatient Facilities**

## **Executive Summary**

The Facility Guidelines Institute (FGI) published the 2014 FGI *Guidelines for Design and Construction of Hospitals and Outpatient Facilities* in March 2015. Any time states or other jurisdictions consider adopting new editions of codes, they receive anecdotal comments about large costs associated with updated requirements. Many states require an economic impact analysis as part of their code adoption process. To quantify the economic impacts of the latest edition of the *Guidelines*, FGI and the American Society for Healthcare Engineering (ASHE) commissioned several studies to examine all of the changes between editions of the *Guidelines* document and assess the costs associated with those changes.

The research found that changes in the 2014 edition from the requirements in the 2010 FGI *Guidelines for Design and Construction of Health Care Facilities* could lead to an increased construction cost of less than 2 percent for general hospitals. The research also found that this increase could be significantly reduced or potentially eliminated through improvements in the 2014 edition text that: (1) clarify requirements and when they apply, (2) reduce the prescriptive nature of some requirements, and (3) support design of facilities appropriate to the location, size, and services provided by a particular institution. After reviewing this research, ASHE and FGI are confident the changes in the new edition are both economically appropriate and necessary to provide patient and staff safety, reduce risks, and align with current patient care practices.

### **The Cost Study Process**

The research study evaluated each significant change from the 2010 edition to the 2014 edition to determine if it would affect construction or “first” costs and, if so, to estimate the value of these potential changes in cost. The study did not address life cycle cost or potential effects on operating costs. The cost study also did not assess the clinical and operational benefits that may be derived as a result of applying the 2014 FGI *Guidelines* requirements, although the Health Guidelines Revision Committee (the body responsible for updating the document) did take these enhancements into consideration during the development process.

The methodology used to determine cost variations in the requirements of the 2010 and 2014 editions employed programmatic cost models supplied by constructors and owners for several typical health care facility types that are often regulated using the *Guidelines*.

Although no health care facility project is really “typical,” due to the unique nature of each location and program, four models were developed to provide a basis for determining the relative cost of the changes in the 2014 FGI Hospital/Outpatient *Guidelines*. The cost models were developed for new facilities constructed in the southeastern United States in 2013, and a program with a budget was developed for each model. For example, the hospital was based on a new 100-bed facility. As a result of this approach

and due to the unique nature of each renovation project, the cost impact for additions and renovations to health care facilities could not be included.

The estimated values of the changes in the requirements in the 2014 edition were compared to the models to determine the relative costs of the revisions from the 2010 to the 2014 edition. These relative cost estimates can be adjusted to different locations using *RSMMeans Building Construction Cost Data* and for comparisons to different years using the federal government’s annual Consumer Price Index.

The *Guidelines* includes requirements for 29 different facility types. For the purposes of this study, these facility types were classified and combined into four basic categories:

- General hospital
- Psychiatric/rehab hospital
- Outpatient freestanding – urgent care, surgery, imaging
- Outpatient freestanding – primary care center

**Note:** The new Residential *Guidelines* document was not evaluated as part of this study due to the complexity of comparing the new book to the requirements in the 2010 edition. As well, the new section on dental facilities (Chapter 3.14) was not included as there were no prior requirements for comparison.

### Potential Cost Increases

Relative changes in cost for the key facility types regulated by the 2014 *Guidelines* are summarized here:

Facility Type	Cost Change	Explanation
General hospital	1.88 %	The bulk of this increase was due to changes required for fume hood exhaust, family support and meditation rooms, private rooms for intermediate care units, and lifts for bariatric rooms.
Children’s hospital	2.37 %	The bulk of the increase was due to the requirements for a family lounge and a play area on top of the 1.88% increase for general hospitals. (These requirements were compared to the 2010 general hospital requirements as a separate children’s hospital chapter is new in the 2014 edition.)
Psychiatric/rehab hospitals	0.26 %	The bulk of the increase was due to changes requiring drywall ceilings in patient rooms and toilets.
Freestanding outpatient – urgent care/surgery/imaging/endoscopy	0.17 %	The bulk of the increase was due to changes requiring a separate clean/decontamination room and a toilet in the recovery area in endoscopy facilities.
Freestanding outpatient – neighborhood clinic/office surgery/dialysis center	2.68 %	The bulk of the increase was due to changes requiring a soiled workroom in renal dialysis centers and a toilet at pre-procedure areas in office surgical facilities.

### Potential Cost Reductions

For several reasons, this study did not include any potential cost reductions when calculating the percentage of cost change from the 2010 requirements to the 2014 requirements. It is difficult to evaluate changes in cost that could stem from changes in complex processes or could vary across facility types. In addition, the general models developed for the study could not be used to price potential cost reductions.

Nonetheless, it is apparent that a number of changes in the 2014 FGI Hospital/Outpatient *Guidelines* document could yield substantial reductions in the percentage of cost increase estimated by the study and

could provide significant increases in benefits. As examples, some of these changes and their potential to reduce costs or add benefits are noted here:

**1.1-3.1.1.2 Major Renovations.** Changed text in this section clarifies the scope of renovations that would trigger required updates for an entire building, particularly for building systems. The intent is to encourage owners to upgrade parts of a building even if they cannot afford to bring an entire facility up to the current codes.

**1.2-2 Functional Program.** This section was revised to clarify the requirements for a functional program and to help owners and designers define the actual needs for a project to minimize additional costs for construction of scope beyond programmed requirements or needs and to minimize the need for scope changes later in a project.

**1.2-4 Safety Risk Assessment.** Combining a number of risk assessments under one umbrella, this new tool clarifies what risks should be assessed at the outset of a project and should help owners and designers define the scope of a project to avoid overbuilding and to improve operational and clinical results.

**1-2-6.4 Bariatric–Specific Design Considerations.** The percentage of the population that is obese varies considerably in different regions in the United States, making it impossible to determine minimum requirements for facilities and equipment to accommodate provision of care for this portion of the population that would be appropriate everywhere. Therefore, specific requirements were removed so that health care organizations can determine the percentage of their patient population that needs these accommodations. Allowing the decision on how much of a facility must be able to accommodate persons of size to be customized to a locality should allow cost savings in some areas.

**2.1-5.1 Central Services.** Requirements in this section were clarified so sterile processing services can be provided in a manner that meets local capabilities rather than having minimum requirements that may go beyond what is needed in small hospitals. This would save costs by allowing a customized approach for each location.

## Conclusion

Overall, the research study concluded that changes to the requirements in the 2014 edition vs. the 2010 edition would only increase the construction costs for a general hospital by 1.88 percent. As well, this increase would generally be offset by changes that give project planners, designers, and owners more options to potentially reduce costs by allowing them to better scale a project to the specific needs of a health care organization.

Undeniably, the fairly minimal cost changes that may result from applying the requirements in the 2014 FGI *Guidelines for Design and Construction of Hospitals and Outpatient Facilities* to new construction projects are justified by potential increases in patient and staff safety, potential reduction in risk, and enhanced alignment with current industry practices offered by using the 2014 edition.

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