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## The Suite Advantage

Prepared by:  
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 *Expertly Engineering Safety From Fire®*

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### William E. Koffel, P.E., FSFPE



- President of Koffel Associates, Inc.
- Serves on numerous NFPA technical committees
- 40+ years industry experience



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### Applicable Codes

- 2012 Edition of NFPA 101, The Life Safety Code® (LSC)
  - Currently enforced by accreditation organizations
- International Building Code
  - 2012, 2015, 2018 Editions
- Facility Guidelines Institute (FGI) Guidelines for Design and Construction of Hospitals and Outpatient Facilities
  - 2014 Edition



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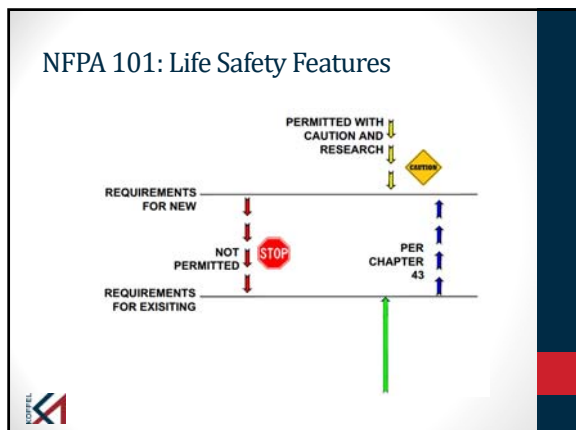
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### Health Care Occupancies

XX.1 General	XX.2.1 General
XX.2 <u>Means of Egress</u>	XX.2.2 Components
XX.3 Protection	XX.2.3 Capacity
XX.4 Special Provisions	XX.2.4 Number
XX.5 Building Services	XX.2.5 <u>Arrangement</u>
XX.6 Reserved	XX.2.6 Travel Distance
XX.7 Operating Features	XX.2.7 Exit Discharge

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- ### NFPA 101 Suites Section – Reorganized in 2012
- General
    - Separation, hazardous areas, subdivision
  - Sleeping suites
    - Arrangement, number of means of egress, size, travel distance
  - Non-sleeping suites
    - Organized the same as sleeping
  - Non-patient care suites
    - In accordance with primary use of the suite

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### When to Utilize Suites

- When there is patient care open to corridors
  - Treatment bays, non-latching doors, direct patient access, etc.
- When staff needs quick access to equipment or supplies
  - Case carts, patient transport, equipment...
  - Operating rooms, ICUs, Emergency departments
  - Such items would typically restrict clear width



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### Suite or Sour?



- Emergency Department
  - Latching doors
  - Constant corridor clutter
  - Daily overflow results in patient treatment in corridors



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### Suite!

- Creating a suite
  - Defining area
  - Adding separations
    - Doors and walls
  - Maintaining egress
    - Exit access
    - Dead-ends



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### When to NOT Utilize Suites

- If a suite would limit access to exits
  - Cannot egress from a corridor through a suite
  - By definition, a corridor has access to TWO exits
    - NFPA 101 §18.2.5.4 Every corridor shall provide access to not less than two approved exits in accordance with 7.4 and 7.5 without passing through any intervening rooms or spaces other than corridors or lobbies.
- If a suite would create a dead-end (30 ft)



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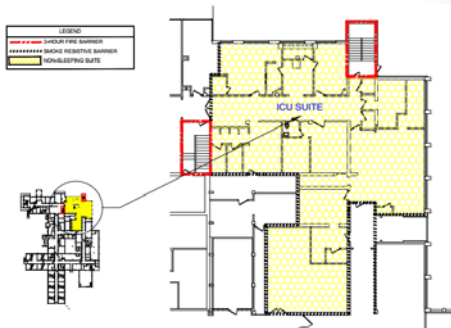
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### Suites – Potential Challenges



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### General Suite Requirements

- Separation from other suites and spaces
  - Must meet corridor requirements
- Hazardous areas
  - No intervening rooms
  - Separations from remainder of suite
- Subdivision
  - Not required to be fire rated (unless hazardous)



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### NFPA 101: Suite Intervening Rooms

- 2012 edition eliminates the limit on the number of intervening rooms in both sleeping and non-sleeping suites
- 100 ft distance to an exit access door regardless of the number of intervening rooms



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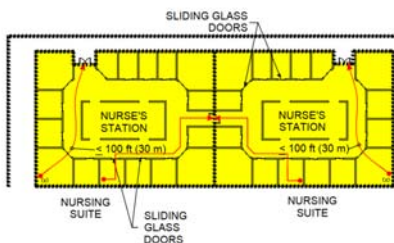
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### Egress Through An Adjoining Suite



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### Patient Sleeping Suites



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### Sleeping Suites

- Arrangement
- Number of Means of Egress
- Travel Distance
- Maximum Size



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### Sleeping Suites: Arrangement

- 2012 LSC §18.2.5.7.2.1:
  - Direct supervision OR
  - Smoke detection in sleeping rooms
- 2015/2018 §IBC407.4.4.5:
  - Limited to 8 patient care beds OR
  - Direct and constant supervision OR
  - Smoke detection in sleeping rooms
- 2012 IBC §407.4.3.5
  - w/ one intervening room:
    - Limited to 8 patient care beds AND
    - Direct and constant supervision



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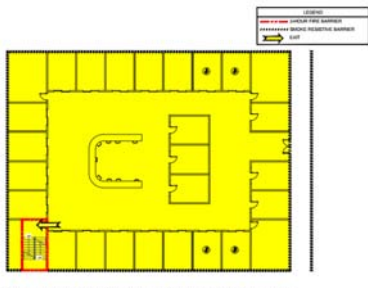
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### Sleeping Suites: Arrangement



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### Sleeping Suites: Intervening Rooms

CODE	NUMBER OF INTERVENING ROOMS*
2012 LSC	No limitation
2012 IBC §407.4.3.5.1	Up to 1
2015 IBC §407.4.4.3	Up to 3
2018 IBC §407.4.4.3	Up to 3

• 2015 and 2018 IBC limit by “passage through more than 3 doors”

\*Travel distance to exit access corridor must be met




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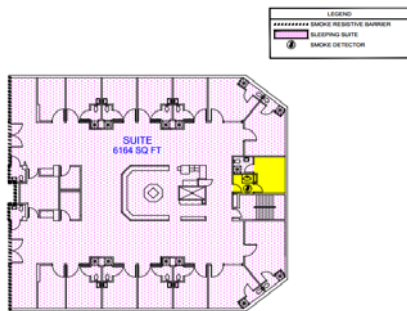
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### Ante-Room Within Suite




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### Sleeping Suites: Number of Exit Access Doors

CODE	SUITE LARGER THAN 1,000 SQ FT	SUITE LESS THAN 1,000 SQ FT
2012 LSC §18.2.5.7.2.2(A)	2*	1
2012 IBC §407.4.3.5.2	2*	1
2015 IBC §407.4.4.5.2	2*	1
2018 IBC §407.4.4.5.2	2*	1

• For 2 MOE:  
 • 1 MOE direct to corridor  
 • Other can be to adjacent suite



\* Doors must be remote

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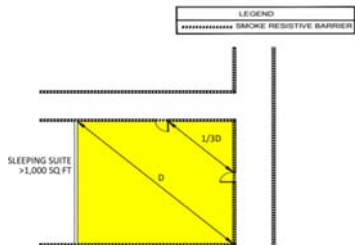
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### Number of Means of Egress



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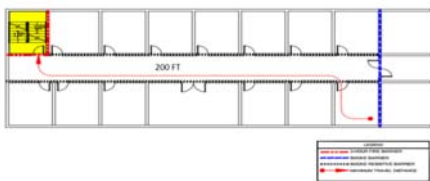
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### Travel Distance: To Exit



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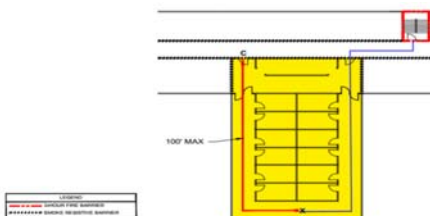
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### Travel Distance: To Exit Access Corridor



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### Sleeping Suites: Travel Distance

CODE	MAX DISTANCE TO EXIT ACCESS	MAX DISTANCE TO EXIT
2012 LSC §18.2.5.7.2.4	100 ft	200 ft
2012 IBC §407.4.3.5.3, Table 1016.2	100 ft: ≤1 intervening room	200 ft
2015 IBC §407.4.4.3, Table 1017.2	100 ft: passage through ≤3 doors 125 ft w/SD system	200 ft
2018 IBC §407.4.4.3, Table 1017.2	100 ft: passage through ≤3 doors 125 ft w/SD system	200 ft




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### Sleeping Suites: Maximum Size

CODE	MAX SIZE (SQ FT)
2012 LSC §18.2.5.7.2.3	7,500 10,000 w/direct supervision and complete SD system
2012 IBC §407.4.3.5.1	5,000
2015 IBC §407.4.4.5.1	7,500 10,000 w/ complete SD system
2018 IBC §407.4.4.5.1	7,500 10,000 w/ complete SD system




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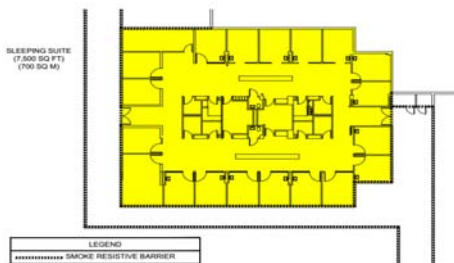
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### Sleeping Suites: Maximum Size




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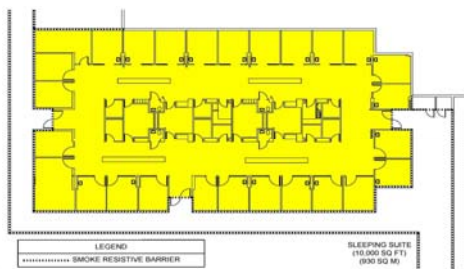
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### Sleeping Suites: Maximum Size



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### Non-Sleeping Suites



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### Non-Sleeping Suites

- Arrangement
- Number of Means of Egress
  - Egress through adjoining suite permitted (2nd route)
- Travel Distances
- Maximum Size



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### Non-Sleeping Suites: Intervening Rooms

CODE	NUMBER OF INTERVENING ROOMS*
2012 LSC	No limitation
2012 IBC §407.4.3.4	Up to 2
2015 IBC §407.4.4.3	Up to 3
2018 IBC §407.4.4.3	Up to 3

• 2015 and 2018 IBC limit by “passage through more than 3 doors”

\*Travel distance to exit access corridor must be met




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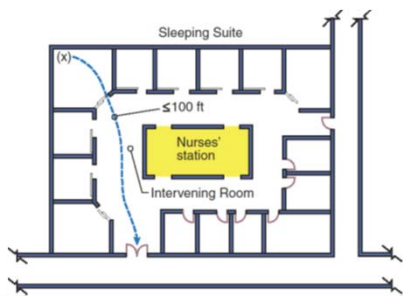
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### Arrangement- Intervening Rooms




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### Non-Sleeping Suites: Number of Exit Access Doors

CODE	SUITE LARGER THAN 2,500 SQ FT	SUITE LESS THAN 2,500 SQ FT
2012 LSC §18.2.5.7.3.2	2*	1
2012 IBC §407.4.3.6.2	2*	1
2015 IBC §407.4.4.6.2	2*	1
2018 IBC §407.4.4.6.2	2*	1

• For 2 MOE:  
 • 1 MOE direct to corridor  
 • Other can be to adjacent suite

\* Doors must be remote




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### Suite or Sour?



- Challenges with storage around ORs and need for multiple suites
- Total area limitations exceeded
- Concerns with access to a corridor



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### Suite!



- Divided area into multiple suites
- Utilized a horizontal exit in lieu of corridor access

 HORIZONTAL EXIT (≥ 2 HOURS)

 NON-SLEEPING SUITE



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### Suite or Sour?

- Emergency department requires a suite
- Non-latching room doors



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### Suite!



- Adding cross-corridor doors defined the suite area
- Access to exit stair maintained
- No dead-ends created




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### Non-Sleeping Suites: Travel Distance

CODE	MAX DISTANCE TO EXIT ACCESS	MAX DISTANCE TO EXIT
2012 LSC §18.2.5.7.3.4	100 ft	200 ft
2012 IBC §407.4.3.3-4, Table 1016.2	100 ft: ≤1 intervening room 50 ft: 2 intervening rooms	200 ft
2015 IBC §407.4.4.3, Table 1017.2	100 ft: passage through ≤3 doors 125 ft w/SD system	200 ft
2018 IBC §407.4.4.3, Table 1017.2	100 ft: passage through ≤3 doors 125 ft w/SD system	200 ft




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### Non-Sleeping Suites: Maximum Size

CODE	MAX SIZE (SQ FT)
2012 LSC §18.2.5.7.3.3	10,000
2012 IBC §407.4.3.6.1	10,000
2015 IBC §407.4.4.6.1	12,500 15,000 w/SD system
2018 IBC §407.4.4.6.1	12,500 15,000 w/SD system

- Increase to 12,500 sq ft not permitted until 2015 editions
- Need to meet most restrictive code




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### Suite or Sour?

- Emergency department requires a suite (no doors on treatment bays)
- Total area limitations exceeded
- Concerns with access to a corridor



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### Suite!



- Single-story area of building
- Previous building exterior could be upgraded to a horizontal exit



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### Suite or Sour?

- ED Treatment rooms
- Non-latching doors
- Oversized non-sleeping suite (13,440 sq ft)
- SOUR!
  - Needed equivalency
  - Don't design in the hopes of getting an equivalency



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### Non-Patient Care Suites



- 2012 LSC §18.2.5.7.4
- "Egress...in accordance with the use and occupancy of the space"
- Not included in IBC



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### Impact of Suites

- Improves speed of care delivery
  - Not subject to all requirements for corridors or individual patient rooms
  - Allows for placement of patient care equipment closer to patient rooms



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### Impact of Suites

- Requires increase in life safety criteria
  - Direct visual oversight
  - Smoke detection
  - Separation from other areas



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### FGI Guidelines

- Suites are a multi-patient “room”
  - 100 sq ft clear area per patient for single bed rooms
  - 60 sq ft clear area per patient when bays are utilized
- Consider required space of other elements of care
  - Equipment
  - Bed/cart movement



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### Authorities Having Jurisdiction

- How does your AHJ interpret the code?
- How to determine the “Sweetest” course of action?



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### Authorities Having Jurisdiction

- Questions to ask your AHJ:
  - What are your restrictions for utilizing suites?
  - What are your expectations for suite circulating space?
- Circulating space within suites
  - Does the corridor require the 8 ft clear width?
  - Is storage of equipment or supplies allowed?



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### Suite Implications

- Construction cost
- Day-to-day storage
- Operations within the suite
- Challenges/benefits to clinical staff
- Implications for future building maintenance



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### Key Considerations in New Suite Design

- Remaining corridor access when suite is created
- Access to exits
- Travel distance to an exit access corridor
- Suite boundaries- partitions and latches!



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### Questions



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