

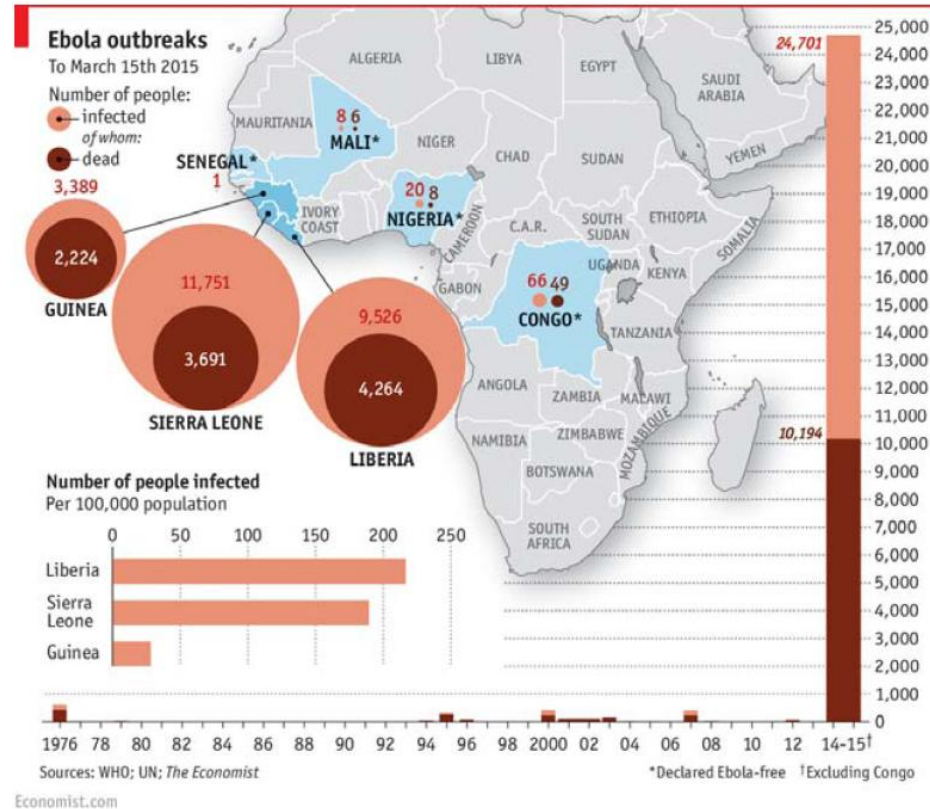
One Hospital's Perspective

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Largest Ebola outbreak in history



Social and healthcare infrastructure

Country	Physicians per 10,000 population
United States ¹	24.2
Massachusetts ²	46.9
Cambridge, MA ³	81.0
Boston, MA ³	148.0
Guinea ¹	1.0
Mali ¹	0.8
Sierra Leone ¹	0.2
Liberia ¹	N/A

¹ Kaiser Family Foundation; ² US Census; ³ Boston Globe

Institutional Preparedness

- Infection Control Unit
- Infectious Diseases Division
- Emergency Preparedness
- Emergency Department
- Medical Intensive Care Unit
- Pediatric Intensive Care Unit
- Pathology (includes all laboratory services)
- Respiratory Therapy
- Environmental Services
- Patient Care Services
- Police and Security
- Occupational Health Service
- Public Affairs
- Information Services
- Environmental Health and Safety
- Buildings and Grounds

Challenges

- Dynamic situation
 - Changing public health guidance
 - Media attention
- Large institution
 - 25,000 employees; 59K inpatients/year; 1.2M ambulatory visits/year
 - In addition to main campus, multiple healthcare centers in Charlestown, Chelsea, Revere, Everett, North End, Back Bay
- Costly
 - Personnel, supplies, construction

Approach

- Comprehensive EVD Response Plan
 - Concentrate EVD care in 2 locations; elsewhere, focus on early identification, isolation, and referral
 - Focused Training: staff in PPE, Site Managers, PPE Managers
 - Broad, comprehensive communication for employees and visitors: town halls, intranet/extranet, email
- Modifications to care locations
 - Physical transformations: Biothreat Care Unit (BCU)
 - Exercises/Drills
 - Refinement of plan

Site Manager

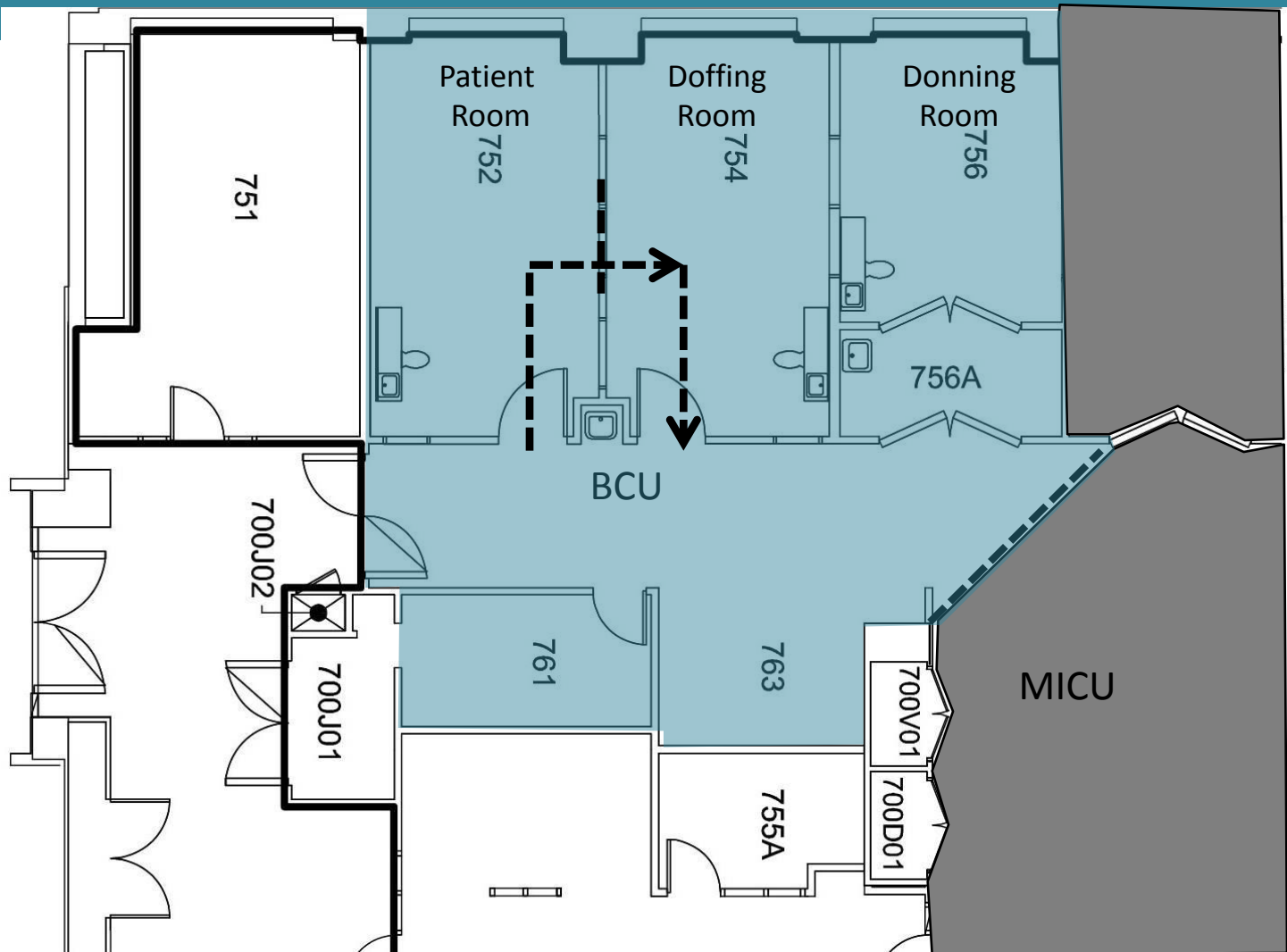
- Unique role created by CDC guidance in October 2014
 - Ensure the safe and effective delivery of Ebola treatment
 - Responsible for all aspects of Ebola infection control including supply monitoring and evaluation with direct observation of care before, during, and after staff enter an isolation and treatment area
 - At least one Site Manager should be on-site at all times in the location where the Ebola patient is being cared for

Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing), CDC, October 20, 2014.

Transforming MICU into the BCU



BCU Layout



The Wall



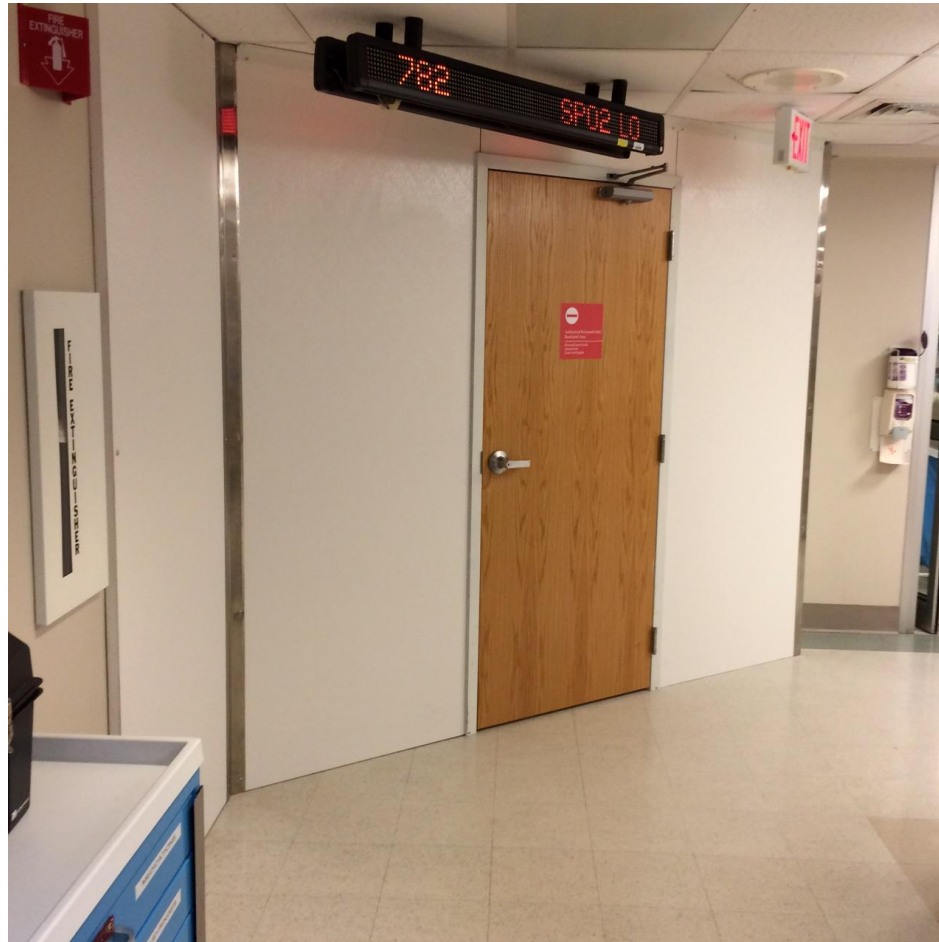
The Wall



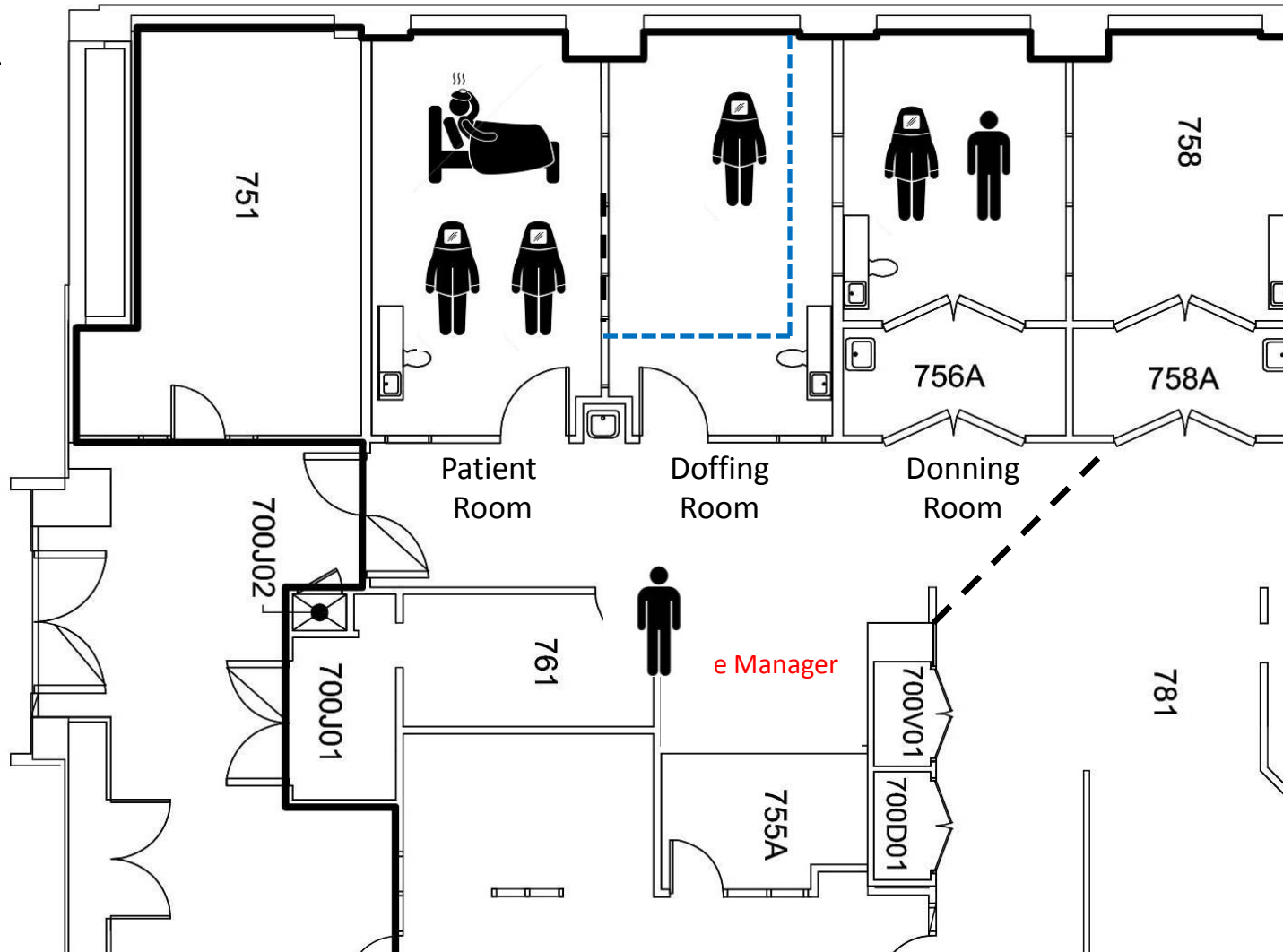
The Wall: BCU Side



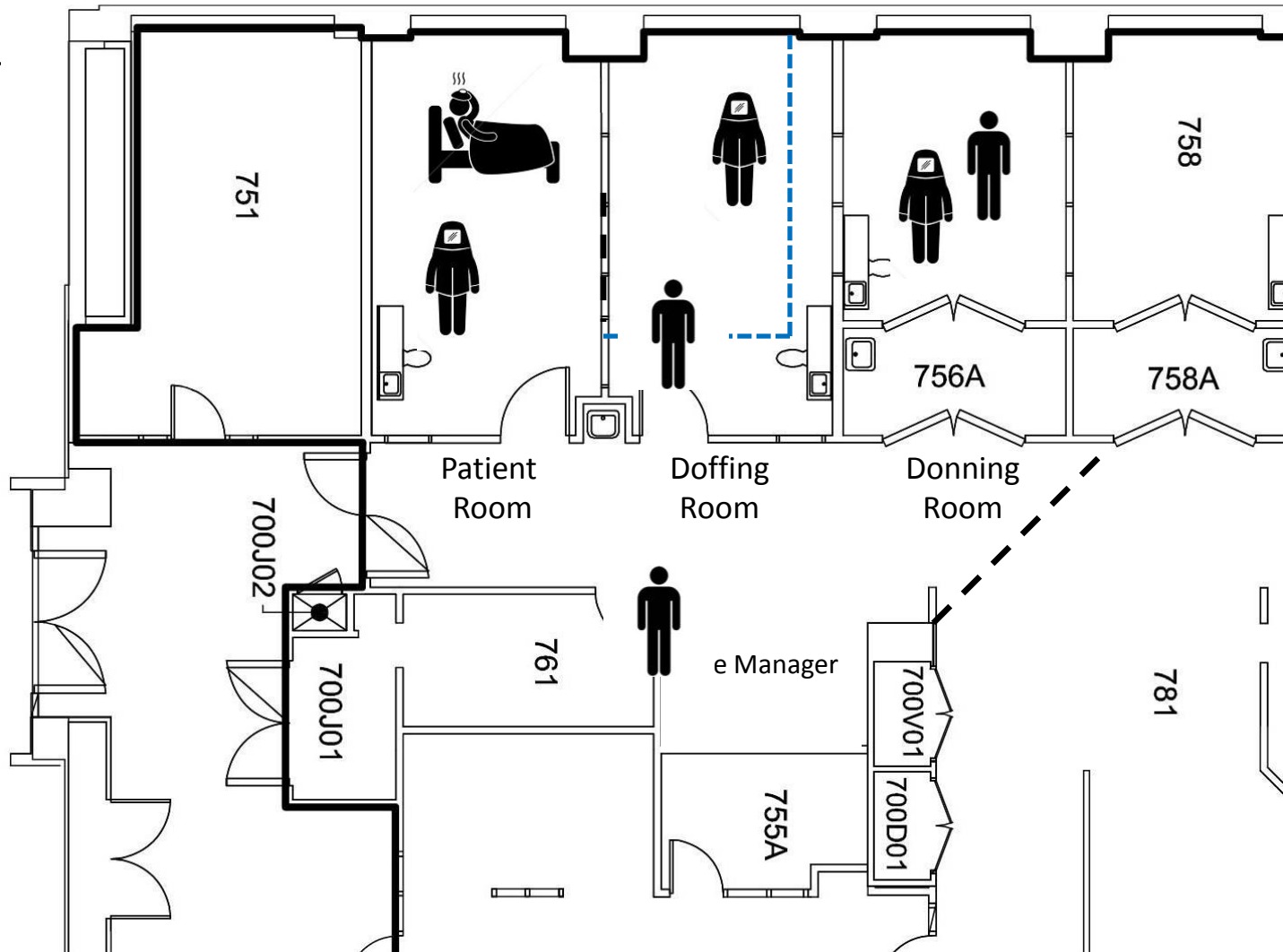
The Wall: MICU Side



BCU HCW Flow



BCU HCW Flow



Preparation of the Clinical Team

- A team of 32 nurses and 16 physicians had volunteered to form the BCU “SWAT Team”
 - Plan was to include a team of 5 clinicians: attending MD and 4 RNs per shift
- All received training in donning and doffing appropriate personal protective equipment (PPE), participated in planning meetings, and institution-wide drills
- Participation in simulation training, while in PPE

Personal Protective Equipment (PPE)

- Goal: no visible skin
- N95 Respirator or PAPR (Powered Air-Purifying Respirator)
- Single-use (disposable) fluid-resistant or impermeable gown that extends to at least mid-calf or coverall
- Double gloves
- Single-use (disposable) apron



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Preparation put to the test

Mass. General Hospital testing patient for Ebola



ASSOCIATED PRESS

Massachusetts General Hospital said it has admitted a patient under investigation for possible Ebola.

By Felice J. Freyer and [Travis Andersen](#) | GLOBE STAFF DECEMBER 03, 2014

Looking ahead

- Sustaining current capacity
- Beyond Ebola