Designing our way out of Emergency

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Designing our way out of Emergency
IHEEM, 20 October 2015
Jonathan Wilson, Principal, Stantec

Suspence
Reality for patients...
Reality for staff . . .
Failure

‘Black alert’ is lifted but fears over A&E go on
Portsmouth.co.uk, October 30, 2014

A&E patients left waiting for over 12 hours
The Argus, November 3, 2014

All But One London NHS Trust Misses A&E Target
LBC, March 18, 2014

NHS facing ‘challenging winter’ with declining staff morale’
Nursing Times, October 30, 2014

NHS facing summer crisis as A&E performance deteriorates
The Guardian, June 10, 2014
4 hour target (95+%)  

December 2014 – 90% within  
December 2015 – 91% within
Demand increasing . . .

- **3.2%** Growth in Major A&E¹ attendances from 2013 to 2014²

- **26%** Increase in Major A&E attendances not meeting the four hour target from 2013 to 2014³

- **60%** Increase in spending on locum doctors in A&E units over last three years

Advisory Board Company

RAND Health research (http://www.rand.org/pubs/research_reports/RR280.html).

Compared to 2003, in 2009 U.S. hospitals admitted

- 2.7M more inpatients
- and 1.6M fewer inpatients

from hospital emergency departments

from doctor’s offices and other outpatient settings.
NHS response . . .

The Keogh urgent and emergency care review – January 2013
Five year forward view – October 2014
Safer, faster, better – August 2015
Emergency care improvement programme (EPIC) -
http://www.ecip.nhs.uk
Can design really make a difference or is this purely an operational and capacity issue?
UK innovation

Northumbria Specialist Emergency Care Hospital, Cramlington, UK
Architect: Keppie (concept – Jonathan Bailey UK)

Worthing Hospital
Emergency Floor
West Sussex, UK
Architect: ADP

St Thomas’ Hospital
Emergency Department
London, UK
Architect: ADP   Art Strategist: Artinsite
Emergency Floor

- Cardiology
- Elderly/Stroke
- Paediatrics
- Fracture
- A&E
- Image
- Ambulatory
- Medical

Level 1

Keppie (concept - Jonathan Bailey Associates UK)
Worthing Hospital Emergency Floor

https://www.rcplondon.ac.uk/projects/development-sites
Nanaimo Emergency Department

- 6,200 sqm
- Completed 2012
- 80-85k visits per year
- User engagement
- Integrated emergency care services incl:

  Triage/streaming
  Urgent/emergent care
  Trauma and Resus
  Ambulatory Care
  Psychiatric emergency suite
  Psychiatric intensive care unit
**Client’s brief:**

**Process design before spatial design**

<table>
<thead>
<tr>
<th>Walk-In Patient</th>
<th>ARRIVAL</th>
<th>TRIAGE</th>
<th>REGISTRATION</th>
<th>ASSESSMENT</th>
<th>DISPOSITION</th>
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<td>Rapid</td>
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<td>Full*</td>
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<td>Category</td>
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<td>Acute ED (T1, 2, 3)</td>
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<td>Ambulatory ED (T3, 4, 5)</td>
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<td>Minor Treatment (T4, 5)</td>
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<td>Patient can be offloaded</td>
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<td>Patients wait in stretchers</td>
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<td>Patients wait in chairs</td>
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- **Required step**
- **Step may not be required or performed**

* Full Triage may include in-depth history, pain score, medication history, additional modifiers
Client’s brief: Streaming process

Arrival → Triage → Classification
- Ambulatory ED
- Emergency Treatment
- Acute ED (Stretcher not available immediately)
- Acute ED (Stretcher available upon arrival)

Patient placed directly into stretcher

Proceed to Registration → Registration
Client’s brief:
Front door flows clearly defined
20 minutes by float plane
90 minutes by ferry
Vancouver Island pop 750,000
Victoria pop 350,000

London, Birmingham, Liverpool, Manchester, Leeds, Edinburgh...
Catchment

80,000 (city)
150,000 (region)
56,000 km² (island and mainland)
Catchment

3,000 SM (ed)
6,000 SM (building)
65,000 (ED patient visits)
Visioning and Design Workshop

“The workshop created the ‘buzz’. You got us interested by letting us get involved. You were interested in us, what we had to say, and how we do things differently. You weren't some architect coming in here telling us how you were going to design our ED”.

Dr. Drew Digney- Site Chief for Emergency and Trauma Services Nanaimo Regional General Hospital
4 hr User Meetings
“We’ve made a conscious decision not to barricade the [triage] area behind glass”

Suzanne Fox
Director of Emergency Services and Trauma Care
Vancouver Island Health Authority
Ergonomic triage desk
No barriers
Ambulatory Care Zone (streaming)
Diagnostic Corner – phlebotomy/EKG/X-ray

‘Blue’ Waiting Area

Phlebotomy

X-Ray

EKG
Urgent/Emergent Care Pod

Care Station

Shared Support Zone
POE question: There is plenty of daylight throughout the facility.

“One hundred percent if we did this process again, we would do courtyards.”

Suzanne Fox
Shared soiled utility, clean supply and med rooms
Exterior blinds deployed
Electronic Glazing in Treatment Cubicles
Charting Stations between Treatment Cubicles
New healthcare-related CDI infection rate has dropped more than 50%
Opening Wall in PES

Patient Day Lounge
Courtyard
Results after the first year:

• C-Difficile infections reduced in half
• Sick time for staff less than previous year
• Overtime $500,000 less than previous year
• Staff time loss-to-injuries rate improved
• Patient rating of perceived care reported as very good by 90% of patients and families
• Patient rating of feeling around privacy in the ED was reported as positive by 75% of patients
• Patient rating of the courtesy of the ED staff was reported as positive by 90% of patients
• Lowest energy use in BC - 1.1 million kwh/year of electricity, enough to power 100 homes
“The design is great and the service has improved immensely!"

A patient in the new ED
February 18, 2013
Lower Level Staff Courtyard
“It should be so good that staff will want to drop in on their day off!!”

Staff working on “their” courtyard on their day off.
Key issues

Flows

Integration of care

Patient and staff wellbeing
Why it matters . . .

A study by Richardson found a 43% increase in mortality at 10 days after admission through a crowded A&E.

Design, working together with clinical process and service integration, can make a real difference.
Further reading


Transforming urgent and emergency care services in England - Safer, faster, better: good practice in delivering urgent and emergency care – NHS England (August 2015)

Health Building Note 15-01: Accident & emergency departments – Department of Health (2013)