Patient Flow

Carolyn Volker
AED Patient Flow –HMC
What does it mean?

Progressive movement of patients, products, information, people through a system of processes

Uninterrupted movement along the patients care pathway

Different meanings to different staff

Complex

International Issue

What do we want?

Reliability

Ideal Care

Safety

Flow

www.institute.nhs.uk/quality_service_improvement_tools
Crowding or Flow?
### Crowding?

**Australasian College Emergency Medicine (ACEM)**

“Situation where the ED function is impeded primarily because the number of patients waiting to be seen, undergoing assessment and treatment or waiting to leave exceeds the physical or staffing capacity of the ED”

**The College of Emergency Medicine – London**

- *Situation where ambulances cannot offload,
- There are delays for high acuity patients to be seen
- High rates of “left before being seen”
- There are more trolley patients than cubicle spaces
- *If patients are waiting more than 2 hours for an inpatient bed after DTA

*Access Block, Myths Versus Facts in Emergency Department Overcrowding and Hospital Access Block; Drew Richardson and David Mountain; MJA: Volume 190 number 7:6 April 2009
The College of Emergency Medicine: Crowding in Emergency Departments; June 2014*
Patient Flow – A System

Patients in the ED
- See & Treat
  - Inpatients
  - Short Stay

Urgent referrals OPD
- Referrals Other Hospitals

Elective Patients

Co-ordination & Bed & Case Management Systems

Clinical Care Pathways

The Patients Journey from Arrival – Discharge
- Right Place/ Right Time / First Time
- Clinical Services, Flow Services, Support Services, Capacity
## Understanding the System

<table>
<thead>
<tr>
<th>Demand – Who Needs the Service</th>
<th>Capacity – Resources Req.</th>
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<tbody>
<tr>
<td>Emergency Admissions</td>
<td>Space in ED</td>
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<tr>
<td>Elective Admissions</td>
<td>Number OR’s</td>
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<tr>
<td>Number &amp; Specialty</td>
<td>Number Beds – Specialty</td>
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<tr>
<td>Other Admissions</td>
<td>Staff</td>
</tr>
<tr>
<td>Elective Cancellations</td>
<td>Information Systems</td>
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<tr>
<td>Discharges &amp; Timeliness</td>
<td>Access to Diagnostics</td>
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<tr>
<td>IP Length of Stay</td>
<td>Escalation &amp; Coordination Systems</td>
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Right Patient - Right Place - Right Time – First Time
What have we done so far?

- Daily Clinical Flow Management & Coordination
- Acute Medical Assessment Unit
- Relocated long term care patients
- Corporate awareness – New Facilities
  - MICU, SICU, TICU, ED, OR’s
  - New Ambulatory / Elective Facilities
- System wide bed management capacity system
- Surgical booking in Urology / Bariatrics
Median ED wait time HGH only by week

Bed Management Roles & Action Focus Systems

AMAU

Information
## Patient Flow

<table>
<thead>
<tr>
<th>Key Elements</th>
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<tbody>
<tr>
<td>• Understand your System</td>
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<td>• Provide Services to meet Demand</td>
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<td>• Reduce &amp; Improve Variation</td>
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<td>• Reduce Waste in the Pathway</td>
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<td>• Increase Responsiveness to Problems in Flow</td>
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<td>• Work together / Multidisciplinary</td>
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<td>• People and Processes</td>
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<tr>
<td>• Culture - Flow is everybody’s business!</td>
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</table>
THANK YOU...
Flow Workshop

A participative exercise to engage staff in understanding flow across a hospital

Hosted by: Tom Stephenson- Health and Social Care Consultant, SIMUL8 Corporation

800 547 6024 | www.SIMUL8Healthcare.com | healthcare@SIMUL8.com
Agenda

1. Introduction
2. Rules of FlowR8
3. Play FlowR8
4. Feedback and Reflection
Decision Making In Healthcare Should be:

- Logical
- Scientific
- Evidence Based

Healthcare Systems

- Complex
- Variable
- Joined
SIMUL8 Corporation

Established in 1994.

Suite of Tools to help make scientific decision making **Accurate** and **Easy**

Core product is SIMUL8 Professional
What do these tools do?

- Imitation of a system as it progresses through time
- Virtual copy of your system, in which to test ideas
- Method of visualizing flow through space and time
How it Works

Models a flow of individual patients

Small scale operations
Service operations
Whole system

Passing of time

Arrivals
Duration of treatment
Time between treatments
Waiting times and bottle necks

Experimentation

What if?....
No risk to patients through pilots

Results

Costs
Resource utilisation
Waiting times

High level flow and operational questions, individual patient variability, graphical visualisation
Understanding emergency care flow
FlowR8 in summary

What is it?
Simulation of a Emergency Department
Built as a game where players impact patient flow
Doing well in the game means beating established hospital metrics

How does it work?
Built around generic simulation model
Scaled down so we can see the ED on one screen
Set-up

A&E

Intensive Care

Facilitator

Medical Ward

Surgical Ward

healthteam@simul8.com
Generic Simulation Runs

You have been split into four groups, each represents the different parts of the hospital

- A&E
- Assessment
- Medical Wards
- Surgical Wards

Each player has access to a question booklet

You are responsible for making your area run efficiently.

healthteam@simul8.com
The Simulation

8.00 AM

A & E
- Maximum Queue Time
- Maximum Delay

ASSESSMENT
- Maximum Queue Time
- Maximum Delay

SURGICAL WARD

MEDICAL WARD
- Maximum Inpatients Delay

healthteam@simul8.com
Run Time Features - Display

Wait over 4 hours

Maximum Patient Wait

11.02 AM

Minor Arrivals

Major Arrivals

In delay Question Code

healthteam@simul8.com
Delayed Patients

Players are aiming to reduce patient delays

When a patient is in delay a challenge must be completed before that patient can be moved.

Emulate the panic when moving patients
Delay Challenges

These are a combination of Numerical, Verbal and Logic based puzzles.

To treat a patient in delay
1. Find the question relating to your patients
2. Solve the question and give the answer to your facilitator.
3. If correct (and the move is possible) you may move the patient.
Let’s play the game
Reflect and Review

We are playing a larger version of this game every day.

- Want to make the game as easy to play as we can

- Correct bed breakdown
- Reduce unnecessary delays
- Work as a whole system
How Using Effective Systems Can Help

Visual Representation of flow
  – Engages stakeholders
  – Increases Understanding
  – Tool to encourage conversation

Allows quick ‘what if’ analysis
Captures the variation of a real system
Eliminates Risk
Examples of Effective Use

• Hamad Medical Corporation- Blood Donation model, Critical Care Tower and Weaning Unit.

• Mount Sinai Hospital built a case for decision makers to implement prenatal services for women without access to health insurance

• Memorial Health Systems Ensuring the feasibility of a $31 million OR expansion project: Capacity planning, system design, and patient flow

• Geisinger release 8% of nursing time back to direct patient care

• Shout It Now, to improve HIV screening and treatment processes in an effort to save millions of lives
Summary

To truly perform well we have to see the whole healthcare system.

It is important to analyze our system scientifically.

We need to be able to test solutions to our problems without increasing patient risk.
Incorporating variation in capacity planning
Variation

- Every process displays variation
- In health variation exists in:
  - Demand
  - Utilization
  - Resources
- Variation can be predictable
Question: With variation

How many patients are seen within the 15min target?

A: 0-25%
B: 50-75%
C: 75-100%
What is the ideal bed occupancy?
What is occupancy and why does it matter?

Occupancy: proportion of utilized beds in a ward – normally quoted as an average
- 2000 admissions at 5 days each = 10,000 bed days = 27.3 beds
- 27.3/30 = 91% occupancy

Commonly quoted target acute ward occupancy of 85%

High occupancy has been linked to increased risk to patient care.

Low occupancy mean less cost-effective services
Go To model
Question

How many beds do we need to ensure 100% of patients wait less than the target?

A: 85
B: 90
C: 95
D: 100
What determines the ideal bed occupancy?

Demand pattern
   – Unscheduled vs. scheduled
   – Variation in admission rate

Acuity (target wait times)
   – How long can patients afford to wait in ED?

Discharge pattern
   – Variation in length of stay and discharge
Beds: To pool or sub-divide?
Trends towards ward/unit specialization

– Cohorting by condition
  • Coronary care units
  • Stroke units

– Cohorting by acuity
  • Critical care
  • Acute medical/surgical
  • Step-down wards
Question

How many beds would you need if you pooled the individual wards?

A: Less
B: More
C: The same
Why does it matter?

Sub-dividing a pool of beds increases your capacity requirements

- Larger pools of beds are better able to accommodate variations in demand:

The challenge: Balancing the benefits of ward specialization versus the benefits of managing your beds as a wider pool
www.simul8healthcare.com/IHIQatar