Joined up care in the hospital

Nightingale: Clarifying and Communicating Risk, Monitoring and Alerting Deterioration

John Welch
Critical Care Outreach
London
13th International Conference on Rapid Response Systems & Medical Emergency Teams

Chicago, IL, USA
May 11-12 2017
91 year old hip fracture

- Thursday  - fall, hip fracture ⇒ ED ⇒ Surgical Assessment Unit
- Friday    - ⇒ Theatre (hemi-arthroplasty) ⇒ ICU
- Saturday  - ICU ⇒ ward
- Sunday    - on ward
- Monday    - on ward: cardiac arrest
91 year old hip fracture

Background

• ↑ confusion, ↓ memory
• hypertension, atrial fibrillation; heart failure
• peripheral vascular disease
• gastritis
• bilateral knee replacements
91 year old hip fracture

Prognosis

- \( \approx 5\% \) of hip fractures die within 30 days ...

- Probability male aged 91 will die before reaching 92 = 0.18

- add in long term conditions, frailty ...
91 year old hip fracture

Friday

• Surgery: “straightforward”
• 1L iv crystalloid given
• Operation started 12.15, in ICU by 14.00
  • @ 15.00: Ur 11.8, Cr 129, K 4.1
• Post-op fluid balance: + 1223 mL to midnight
91 year old hip fracture

Saturday – on ICU

• 06.30: routine morning bloods- Ur 14.1, Cr 161, K 4.6
• 08.59 - “PLAN: ready for ward” “monitor for any signs of sepsis”
Saturday – on ICU

- 06.30: routine morning bloods- Ur 14.1, Cr 161, K 4.6
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91 year old hip fracture

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- daughter “he’s more confused than usual”
- physio “unable to follow commands”
91 year old hip fracture

Saturday afternoon, Sunday, Monday – on ward

• Saturday - observations: 16.00  17.00  21.30

• Sunday - observations: 06.00  10.20 (pulse 138*)
91 year old hip fracture

Saturday afternoon, Sunday, Monday – on ward

• Saturday - observations: 16.00 17.00 21.30

• Sunday - observations: 06.00 10.20 (pulse 138*) Dr
91 year old hip fracture

Saturday afternoon, Sunday, Monday – on ward

- Saturday - observations: 16.00 17.00 21.30
- Sunday - observations: 06.00 10.20 (pulse 138*)
  16.25 (pulse 144*) 20.45
- Monday - observations: 08.00 (pulse 135*) 10.20 (pulse 144*)
Saturday afternoon, Sunday, Monday – on ward

- **Saturday** - observations: 16.00 17.00 21.30
- **Sunday** - observations: 06.00 10.20 (pulse 138*)
  16.25 (pulse 144*) 20.45
- **Monday** - observations: 08.00 (pulse 135*) 10.20 (pulse 144*)
- **CARDIAC ARREST @ 11:15** (bloods: Ur 24.5, Cr 258, K 7.2)
What could be better?!

- Communication of risk factors
- Flagging of hypotension, “soft signs” - ? rethink discharge
- Vital signs monitoring on ward, alerts
- Prompts regarding bloods
- Feedback loop
Emergency Ambulatory Care
Nightingale Preventing Admissions & Enabling Patient Care at Home

Dr David Brealey
Consultant in Intensive Care Medicine
London
“HOSPITAL IS THE SAFEST PLACE TO LOOK AFTER MY PATIENTS…….”
Emergency Ambulatory Care

A Common Case
Complicated Infection

• 18 year old woman with urinary tract infection

• 59 year old man with diabetes & cellulitis

• 34 year old with Crohn’s colitis

• 62 year old with chemotherapy-induced febrile neutropenia
Emergency Ambulatory Care
A Common Problem
Complex Risk Management

**PRO**
- Discreet illness
- Predictable pathogens
- Rapid improvement on appropriate therapy
- Defined pathway

**CON**
- Potential for deterioration through sepsis
- May need ‘source control’ (multi-specialty involvement)
- Serial diagnostics & imaging required
Emergency Ambulatory Care

A ‘Simple’ Solution
A Nightingale System

Assure early identification of deterioration
A Nightingale System

Works in partnership with patient and caregivers
A Nightingale System

Build patient-specific risk stratification through additional information as management progresses
A Nightingale System

Create safe triggers for patient readmission to hospital
A ‘Simple’ System

- Assure early identification of deterioration
- Integrate into protocolised diagnostics & therapeutics pathway
- Build patient-specific risk stratification through additional information as management progresses
- Create safe triggers for patient readmission to hospital
“HOSPITAL AT HOME” IS THE SAFEST PLACE TO LOOK AFTER MY PATIENTS
OF COURSE NOT EVERYONE SHOULD GO HOME....
A 45 year old presents one day to the ED with pancreatitis

• 08:00 He’s admitted and handed over to the medical team as being “fine”.
• A junior doctor is asked to look after the patient.
• The patient is in severe pain, given some pain killers.
• 11:00: Respiratory and heart rate rise (charted, but little done)
• Pain worsens
A Simple System

- Blood tests show significant kidney and liver problems. These are not escalated.
- 17:00: Blood pressure is falling, patient is cold and clammy (shocked).
  - iv drip failing (i.e., the main means of treatment).
- Junior Doctor seeks help but her colleagues are busy, doesn’t try harder.
- 19:25: the patient isn’t in bed. Other patients say he’s gone to the toilet.
- No answer from the toilet. Patient dead on the floor.
A Simple System

• He died un-noticed in one of the most advanced hospitals in the world

• The hospital, one of the best run in the NHS, had to cancel £2m of elective surgery in the last few months because of emergency admissions

• This story is is played out EVERY day in EVERY hospital across Europe and the U.S.

• I am sure everyone of you could have helped save that patient

• I am sure everyone of you could help prevent admissions and keep the surgery rolling
A Simple System

With NIGHTINGALE we all have a unique opportunity to make that difference

THANK YOU