Deteriorating Patient Event

Friday 25 August, Golden Jubilee Conference Hotel, Clydebank
Chair’s welcome

Kevin Rooney
National Clinical Lead - Acute Care Portfolio
Healthcare Improvement Scotland
Housekeeping

• Please put mobile phones on silent.

• If you hear a fire alarm, please proceed to the nearest fire exit.

• Wi-Fi name: GJCH-Public-Wifi, no password required

• Yellow lanyards – here to help
Aims of the day

This is a networking opportunity for staff in acute hospitals working to improve delivery of a person centred response for people who are deteriorating in acute care.

The session will:

• highlight the progress being made in Scotland and describe the factors behind that,
• support staff to share knowledge, experience and resources with colleagues, and
• explore the system enablers that support clinical teams to improve care.
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Room</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00</td>
<td>Registration and lunch</td>
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</tbody>
</table>
| 12:45  | Chairs welcome                             | Arcoona | Kevin Rooney  
Clinical Lead  
Healthcare Improvement Scotland |
| 12:50  | Learning from NEWS implementation           | Arcoona | Paula Riley  
Improvement Advisor  
NHS Dumfries & Galloway |
|        |                                            |      | Matt Jobson  
Quality Improvement Facilitator  
NHS Grampian |
| 13:20  | Market Stalls                              | Inspiration | Alison Hunter  
Improvement Advisor  
Healthcare Improvement Scotland |
| 14:30  | Coffee & networking                        |      |                                                                        |
| 14:50  | Making safety easier                       | Arcoona | Calum McGregor  
Consultant Physician  
NHS Lanarkshire |
| 15:20  | Next steps                                 | Arcoona | Kevin Rooney  
Clinical Lead  
Healthcare Improvement Scotland |
| 15:30  | Close                                      |      |                                                                        |
Scottish Patient Safety Programme - statement regarding the new international census definition of sepsis

Recommendations

1. The National Early Warning Score will continue to be the recommended method of identifying deteriorating patients, including those with sepsis.

2. Early Warning Scoring System trigger points for sepsis screening and management will continue to be locally defined. Screening for sepsis should be undertaken with the question – ‘could this deterioration be due to infection’.

3. Systemic Inflammatory Response (SIRS) criteria will continue to aid in the general diagnosis of infection.

4. The qSOFA criteria may be used as an adjunct to identify patients at increased risk of death and support decisions about treatment escalation.

5. All monitoring and screening tools should be viewed as an adjunct to clinical judgement.

6. Further studies on qSOFA will inform decisions about their potential use as a screening tool for sepsis.
% 30 day mortality of ICD-10 A40/ A41

Collaborative Launch

Mean 1: 24.8%

Mean 2: 19.5%

24.8% to 19.5% is a 21% reduction post collaborative launch
This represents a change from 85 to 75 Cardiac Arrests per month.
Learning from NEWS implementation

Paula Riley
Improvement Advisor
NHS Dumfries & Galloway

Matt Jobson
Quality Improvement Facilitator
NHS Grampain
Why? 
What? 
How?
Challenges?
The Results

Cardiac Arrest Rate

All Acute Sites
NHS Grampian

Rate per 1000 discharges

NEWS introduced
Implementing NEWS

Paula Riley
Quality Improvement Advisor—Patient Safety
Our Story
Challenge?
Do We Have Improvement?

Cardiac Arrest Rate

Current median 1.32
Reduction from baseline 52%
Market Stalls

Alison Hunter

Improvement Advisor, SPSP – Acute Adult
# Market stalls

<table>
<thead>
<tr>
<th>Group Number</th>
<th>Starting Market Stall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ayrshire &amp; Arran</td>
</tr>
<tr>
<td>2</td>
<td>Borders</td>
</tr>
<tr>
<td>3</td>
<td>Fife</td>
</tr>
<tr>
<td>4</td>
<td>Forth Valley</td>
</tr>
<tr>
<td>5</td>
<td>Golden Jubilee</td>
</tr>
<tr>
<td>6</td>
<td>Greater Glasgow &amp; Clyde</td>
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<tr>
<td>7</td>
<td>Lanarkshire</td>
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<td>8</td>
<td>Lothian</td>
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<td>9</td>
<td>Tayside</td>
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<tr>
<td>10</td>
<td>Western Isles</td>
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Coffee & networking
Making Safety Easier

Calum McGregor
Consultant Physician
NHS Lanarkshire
Making Improvement Easier

**DATA**
Using quantitative and qualitative data to understand current state, diagnose problems & prioritise improvement effort
Data that builds will

**PROCESS CHANGE**
Use principles of reliable design
Provide education on ‘what, why and how?’

**PEOPLE**
Credible leadership for subject matter
Coaching & appreciative enquiry
Celebrate success and learn from good practice

**QI support**
Use appropriate QI methods to diagnose, generate ideas, test changes and use data
Support from strategic leaders
Flattened hierarchy
Outline – My experience of trying to reduce cardiac arrests and make improvement easier

• Introduction
• QI Support
• Culture
• Process Change/Data
• People
• Share practical approaches
• Celebrate success!!
My Experiences
QI SUPPORT - Identify local problems

The measurement and monitoring of safety. Vincent et al. 2013
Lanarkshire HIS Report 2013

Findings:
- Patient safety issues on all 3 sites
- 21 recommendations made
Kotter’s Change Management Principles

EIGHT STEPS TO TRANSFORMING YOUR ORGANISATION

1. Establishing a Sense of Urgency
2. Forming a Powerful Guiding Coalition
3. Creating a Vision
4. Communicating the Vision
5. Empowering Others to Act on the Vision
6. Planning for and Creating Short-Term Wins
7. Consolidating Improvements and Producing Still More Change
8. Institutionalizing New Approaches

Burning Platform
QI Support - NHSL Patient Safety Collaborative 2014

Wishaw AMU – deteriorating patient pilot site

• How much by when?
• 50% reduction in cardiac arrests by June 2016

Benefits of collaborative approach

• Aims aligned – seniors and on ground
• Focus
• Advice – QI experts: Fellow and improvement advisor
• Support
Identify local problems

Process Measures:

- Reliable clinical **obs**
- **Recognition** of hypoxia
- Documentation of target oxygen saturations
- Oxygen Prescription
- **Response** to hypoxia

Figure 1 - Case Note review identification of sub-optimal care
Identify Local Problems

- Antibiotics not in department
- Patient going to X-ray prior to antibiotics and fluids
- Triage system not robust enough to prioritise sick patients
- Nursing staff not informed of STAT antibiotic prescription
- MEWS added incorrectly
- Not applicable section on form
- Medical Students....
- Lack of awareness

WE’RE TOO BUSY
CULTURE

“Culture eats strategy for breakfast”

Peter Drucker
Culture Change

Reports
• Berwick Report 2013
• Francis report 2013
• National Patient Safety Foundation 2015

• Need for culture change

Deming
• Psychology of change
• Shared vision and goals
• Create pride in work
Mayo Clinic Leadership Director – Steve Swensen

- Uses your name
- Asks for your ideas
- Communicates transparently
- Productivity increases
- Burnout decreases


Swensen S. IHI Conference. Gothenberg 2016
Culture / Environment

- Healthcare staff in general only receive feedback when things go wrong
- Audits / M and M / External review
- Cardiac arrest reviews
- Positive Focus?
Resilience Engineering

• “Learning from what went well”

• Safety 1 v Safety 2

• ICU Emergency Buzzers
Save of the Month!

- MDT Review of the Case
- Establish what went well from each discipline’s perspective
- Agree test to make that desirable “thing” happen more reliably
- Apply model for improvement to test plan (PDSA)
• Patient deteriorates – nurse on break...
Teamwork / reliable observations / recognition / response / escalation

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1900</td>
<td>Returned from tea - advised of above. RN MacInish has informed medical staff. Temp 39.1</td>
</tr>
<tr>
<td>1905</td>
<td>Mcus (6). Full aware. I will review.</td>
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**CLINICAL SUPPORT WORKER ESCALATION OF DETERIORATION PROMPT**

**Definition of Deterioration:**
- Any patient observation (including NIV/P) change, including one or more colour band, in a negative direction
- Temperature < 35°C or > 37.5°C
- AND/OR Drop in Sats to below 94% without COPD or below 88% with COPD
- Blood glucose < 4mmol or > 20mmol
- Daily weight loss > 1kg or gain > 1kg
- Concern regarding deficient intake or output

Is there evidence of any of the above?
Inform nurse in charge and place sticker in the nursing notes.

---

**Handwritten Notes:**
- Cough and sputum.
- II C/O therapy. Be N2 - 50%
- D/F: afebrile, patient, GCS 15
- EMT: On scene.
- Some respiratory distress.

---

**Plan:**
1. *O2 to maintain Sats N 92%.* No formal diagnosis of COPD so would like > 88%.
2. IV access & fluids incl. BC & 10% dextrose.
3. ABG (if not done).
4. IV fluids
5. AB therapy, d/w serum.
6. Monitor urine output 80 per sepsis protocol.
Process Change – Testing in Quality Improvement

Model for Improvement

What are we trying to accomplish?

How do we know that a change is an improvement?

What changes can we make that will result in the improvements we seek?

Act
Plan
Study
Do

Process Change - Make it easy to do the right thing
Standardised obs times and visual aids
Data for Improvement

Reliable implementation of the observation bundle

% Reliability

Week commencing

21/06/2014
05/10/2014
19/11/2014
30/11/2014
14/12/2014
04/01/2015
08/02/2015
08/03/2015
22/02/2015
22/03/2015
12/04/2015
17/05/2015
12/07/2015
08/08/2015
23/08/2015
04/10/2015
25/11/2015
29/11/2015
27/12/2015
10/01/2016
14/02/2016
06/03/2016

Value
Goal
“We count our successes in lives”

Brent James – Intermountain Healthcare

Reduce Unwanted Variation:

- Identify a high-priority clinical process
- Build an evidence-based protocol (always imperfect: poor evidence, unreliable consensus)
- Demand that clinicians vary based on patient need
- Constantly update and improve the protocol
Reducing Unwanted Variation

- Hypoxia – key local issue
- Wide variation in location of documentation of oxygen target saturations
  - BTS guidelines state document oxygen target saturations on **drug** chart
  - Know processes and listen to staff:
    - CSWs only look at **obs** chart
    - Standardise to **obs** chart
    - More reliably identify hypoxia
Recognition of Hypoxia – O2 applied and / or medic informed

- Target Sats on obs chart = 100% recognition of hypoxia
- Target sats anywhere else = 45% recognition of hypoxia

Figure 4 - Target Saturations Documentation on clinical obs chart

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<tr>
<td>Median</td>
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</tbody>
</table>

No data

Target sats standardised to obs chart

Target sats sticker on obs chart trialled
Standardise Response – reliable basics

Starting O₂?
Please do this too

Please complete actions below when hypoxia is identified; i.e. sats <94%, or <88% if COPD

☐ Apply O₂ to achieve target saturations
☐ Inform nurse in charge of bay
☐ Repeat obs after O₂ applied, then decide on frequency of obs
☐ Request medical review
MH

- EXAC of COPD
- Moved from GP assessment direct to non-specialty ward
Successful Checklists – Do the basics right

[Graph showing central line infection rate (per thousand line days) with a note: March 2011: zero central line infections in whole country]
Central Line Insertion

U/S guidance
Sterile gown and gloves
Hat and mask
Sterile field maintained
Suture and dressing applied under sterile conditions
# Surgical Checklist

## Before induction of anesthesia

**SIGN IN**

- Patient has confirmed:
  - Identity
  - Site
  - Procedure
  - Consent
- Site marked  ☐ Not applicable
- Anesthesia safety check completed
- Pulse Oximeter on patient and functioning
- Does patient have a Known allergy?
  - NO ☐ YES
- Difficult airway/aspiration risk?
  - NO ☐ YES, and equipment/assistance available
- Risk of >500ml blood loss (7ml/kg in children)?
  - NO ☐ YES, and adequate intravenous access and fluids planned

## Before skin incision

**TIME OUT**

- Confirm all team members have introduced themselves by name and role
- Surgeon, Anesthesia Professional and Nurse verbally confirm:
  - Patient
  - Site
  - Procedure
- Anticipated critical events:
  - Surgeon reviews: What are the critical or unexpected steps, operative duration, anticipated blood loss?
  - Anesthesia team reviews: Are there any patient-specific concerns?
  - Nursing team reviews: Has sterility (including indicator results) been confirmed? Are there equipment issues or any concerns?
- Has antibiotic Prophylaxis been given within the last 60 minutes?
  - YES ☐ Not applicable
- Is essential imaging displayed?
  - YES ☐ Not applicable

## Before patient leaves operating room

**SIGN OUT**

- Nurse verbally confirms with the team:
  - The name of the procedure recorded
  - That instrument, sponge, and needle counts are correct (or not applicable)
  - How the specimen is labelled (including patient name)
  - Whether there are any equipment problems to be addressed
- Surgeon, Anesthesia Professional and Nurse review the key concerns for recovery and management of this patient
## Improvements post checklist

**Table 5. Outcomes before and after Checklist Implementation, According to Site.***

<table>
<thead>
<tr>
<th>Site No.</th>
<th>No. of Patients Enrolled</th>
<th>Surgical-Site Infection</th>
<th>Unplanned Return to the Operating Room</th>
<th>Pneumonia</th>
<th>Death</th>
<th>Any Complication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
<td>After</td>
<td>Before</td>
<td>After</td>
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<tr>
<td>1</td>
<td>524</td>
<td>598</td>
<td>4.0</td>
<td>2.0</td>
<td>4.6</td>
<td>1.8</td>
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<tr>
<td>2</td>
<td>357</td>
<td>351</td>
<td>2.0</td>
<td>1.7</td>
<td>0.6</td>
<td>1.1</td>
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<tr>
<td>3</td>
<td>497</td>
<td>486</td>
<td>5.8</td>
<td>4.3</td>
<td>4.6</td>
<td>2.7</td>
</tr>
<tr>
<td>4</td>
<td>520</td>
<td>545</td>
<td>3.1</td>
<td>2.6</td>
<td>2.5</td>
<td>2.2</td>
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<td>5</td>
<td>370</td>
<td>330</td>
<td>20.5</td>
<td>3.6</td>
<td>1.4</td>
<td>1.8</td>
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<tr>
<td>6</td>
<td>496</td>
<td>476</td>
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<td>4.0</td>
<td>3.0</td>
<td>3.2</td>
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<tr>
<td>7</td>
<td>525</td>
<td>585</td>
<td>9.5</td>
<td>5.8</td>
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<td>0.2</td>
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<tr>
<td>8</td>
<td>444</td>
<td>584</td>
<td>4.1</td>
<td>2.4</td>
<td>0.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>3733</td>
<td>3955</td>
<td>6.2</td>
<td>3.4</td>
<td>2.4</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*The most common complications occurring during the first 30 days of hospitalization after the operation are listed. Bold type indicates values that were significantly different (at P<0.05) before and after checklist implementation, on the basis of P values calculated by means of the chi-square test or Fisher’s exact test. P values are shown for the comparison of the total value after checklist implementation as compared with the total value before implementation.
Wishaw sepsis mortality – ICD codes A40/A41
Practical ways of Making Improvement Easier

• Reliable Obs
• Recognise deteriorating patients
• Respond to deterioration
• Teamworking

• Standardised obs and visual aids
• Make target sats visible
• Concentrate on reliable basics
• Clear guidance on escalation
• MDT learning from success
• Use data for improvement
People

What matters to me?

Engage and support patients and carers, more compassion

What matters to leaders?
Patient Centred Culture - paeds

What Matters to Me

1. NO Boiling Rules
2. Help Me
3. Knock before you come in my room!
4. Have activities for me while stuck in bed!
5. Don't forget About me!
Patient Centred Culture - COTE
Impact of Patient Centred Care

- 19% reduction in falls
- No complaints >300 days
- Sustained reduction in staff sickness absence
- Maher – 2016

Joy in Work...?
What Matters to you? day 2017 - Joy in Work?!
"That I receive treatment if I need it. I like when I get visitors at visiting hours. Some days I like a nap in the afternoon and when people are coming and going it upsets you as you can't get a sleep. I like the staff, they are very helpful and can't do enough for you. Doctors are nice but there is things they say and I don't know what they are talking about. But the nurses are good at explaining."
Applying Patient Centred Care to Deteriorating Patients

- Patient Activated Consultant Response (PACR)
- “If you are worried, or feel that you, or your family members’, condition is deteriorating, please feel free to phone your consultant, Dr McGregor, on ****”
- Given to all patients on arrival
- Feedback form taken back at 5pm or when patient discharged
- ? Identify and respond to deteriorating patients earlier
Nobody phoned!

- Consultant Response to Activation by Patient (CRAP)
- ? Failed test
  
  - "Felt safe." "Wasn't worried and could tell staff were busy." "No need." "Staff explained there would be a wait"

- Flatten hierarchy and show willing
Influence culture?

Hospital talk on culture

Hold a mirror to clinicians and give practical examples

“I am more than happy to apologise personally to every patient decanted.”

From “shop floor” and top down:

Safety boards in all wards displaying data
Culture Change?

Quotes:

We’re a receiving unit – deteriorating patients are our priority”

Nurses used to ask to come here for experience of cardiac arrests – now they don’t.”
Wishaw AMU - Winners of the Resilient Health Care International Prize 2016

Celebrate Success
Figure 2 - ECU Cardiac Arrest Rate per 1000 discharges - Annotations correspond with improved process measures

- UCL
- Hypoxia response more reliable
- Obs reliability improved

Rate

Month
Wishaw Cardiac Arrest rate

- Oct 2014 to end 2015 ECU = 27% of all Wishaw arrests
- 2016 ECU = 12.5% of all Wishaw arrests
Summary

• Tips on making improvement easier
• Understand your own processes and problems
• Learn from success- “What does good like?”
• Multi-disciplinary involvement is key
• You can influence culture
• Improvements are possible!!
Next steps & close

Kevin Rooney
National Clinical Lead - Acute Care Portfolio
Healthcare Improvement Scotland
### Acute Care – Overarching Driver Diagram

<table>
<thead>
<tr>
<th>Aim</th>
<th>Primary Driver</th>
<th>Secondary Drivers</th>
<th>System Enablers</th>
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</thead>
<tbody>
<tr>
<td>Improve experience and outcomes for frail people in acute hospitals</td>
<td>Improve experience and outcomes for people using acute health care to support National Health &amp; Wellbeing outcomes</td>
<td>Reliable care delivery to:</td>
<td>Promote a culture that helps acute care teams improve experience and outcomes for people in their care</td>
</tr>
<tr>
<td></td>
<td>Reliable care delivery to:</td>
<td>Identify people with frailty at the front door of hospital</td>
<td>LEARNING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Initiate Comprehensive Geriatric Assessment within 24 hours if frailty is present</td>
<td>Set priorities and aims using</td>
</tr>
<tr>
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<td></td>
<td>Provide co-ordinated care for people with frailty</td>
<td>• Evidence base to identify opportunities for improvement</td>
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<td></td>
<td>Consider options for supporting people at home or in a homely setting</td>
<td>• Local data to set a baseline and measure progress</td>
</tr>
<tr>
<td>Improve prevention, recognition and response for people in acute hospitals at risk of harm</td>
<td>Improve prevention, recognition and response for people in acute hospitals at risk of harm</td>
<td>Reliable care delivery to:</td>
<td>• Feedback from service users and staff</td>
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<tr>
<td></td>
<td></td>
<td>Reduce harm from Falls</td>
<td>• Diagnostic tools (e.g. pareto analysis, FMEA, A3 thinking, process mapping)</td>
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<td>Reduce harm from Pressure Ulcers</td>
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<td>Reduce harm from Cardiac Arrest, Sepsis and AKI</td>
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<td>Reduce harm from Delirium</td>
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<td>Reduce harm from Medicines</td>
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</table>
### LEARNING
- Set priorities and aims using

- Evidence base to identify opportunities for improvement
- Local data to set a baseline and measure progress
- Feedback from service users and staff
- Diagnostic tools (e.g. pareto analysis, FMEA, A3 thinking, process mapping)

### CHANGING
- Identify key processes to improve

- Use principles for reliable process design
- Provide education on ‘why’ and ‘how’
- Use data to measure impact of changes on outcome

### EMPOWERING
- Build an improvement team through

  - Co-design of processes with people and families
  - Process changes and communication that flatten hierarchy
  - Use of data to build will
  - Use of coaching and appreciative enquiry
  - Communication and processes that celebrate and learn from excellence
  - Credible leadership with subject matter and improvement skills

### SUPPORTING
- Strategic leaders support the work of improvement
- Use appropriate QI method & support to diagnose, generate ideas, and support testing and use of data
Thank You