



SusQI Teaching – Value Process Mapping

Lesson Title:	SusQI Teaching on Value Process Mapping		
Level:	Basic QI knowledge	Duration:	1.5 Hours
Lesson Objectives:			
<ul style="list-style-type: none"> • Introduce SusQI framework for integrating sustainability into quality improvement and the concept of sustainable value • Apply the lens of sustainable value to a case study about Cannulation in A & E to focus on skills to study the system • Begin to apply the above QI tools to your own QI ideas 			
Format: Set up for Face-to-face teaching but could be delivered virtually			
Resources: 1. Intro presentation; 2.Process mapping activity sheet; 3. Carbon footprint example			

Summary of Tasks / Actions:	Timing
<p>1. Introduction and Review of key concepts Sustainable Value; Q&A</p> <p><i>Session structure / ground rules- What is sustainable value- sustainability as a domain of quality? Why integrate sustainability into QI?</i></p> <p>Resource 1: Introduction to SusQI Powerpoint (From Educator Pack)</p>	10 min
<p>2. Cannulation in A and E:</p> <p><i>Introduce Cannulation case study. What are the potential management options? Discuss how this is a potential area for QI and how we will now apply SusQI tools.</i></p> <p><i>Explain how to create a process map and set up the exercise – split the group</i></p> <p>Resource 2: process mapping activity sheet</p>	5 min
<p>3. Process Mapping</p> <p><i>Explain they will now do their own process mapping; start breakout rooms or break into groups</i></p> <p>Exercise 1: Ask the group to create an algorithm/ flow chart that reflects the process of a patient like Sarah being cannulated in A+E, and the 3 possible outcomes. (there maybe more but in this exercise encourage to keep to 3)</p>	20 min
<p>4. Applying value to Process Maps</p> <p>Exercise 2: Now ask students to use the key in Resource 2 to look for the environmental social and financial impact areas. Completed process map available.</p> <p><i>Return to main group between and after exercises for feedback</i></p>	15 mins

<p>5. From everything you have discussed in this workshop, what would be a potential target for a future improvement project for this clinical pathway?</p> <p>Ask students to present back what they have discussed to the rest of the room.</p> <p>6. Recap at this point. They have now looked at how to study the system and design improvement. This is an opportunity to look at how to measure impact – in particular focus on environmental and social impacts. Answer questions and check understanding</p>	<p>10 mins</p>
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<p>Resources/ Equipment:</p> <p><i>Resource 1 – Introduction to SusQI slide presentation</i></p> <p><i>Resource 2 – Process mapping activity sheet</i></p> <p><i>Resource 3 – Calculating carbon footprint - example</i></p>

<p>Take Home Tasks:</p> <p><i>Recap main learning points - it is important to Study a System to understand what is really going on and where we can make the most impact. This includes understanding where environmental, social and financial resource use / impacts occur.</i></p> <p><i>Signpost SusQI resources- http://www.susqi.org</i></p>
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Resource 2 – process mapping activity sheet

Instruction sheet for group participants

You have now had some introduction to concepts of sustainability in QI. This workshop will practise some key elements of planning a sustainable QI project. The aim is to understand how a system works currently, to help identify a focus for improvement.

Exercise 1: Build a value process map

Step 1

Take 5 minutes to read and discuss the scenario below

Scenario

In many A+E departments it is common to routinely cannulate patients attending with certain presentations.

Sarah is a 30-year-old single mother of 3, employed in a warehouse on a zero hours contract. On weekends she helps to coach a local football team. One Sunday evening she feels faint and almost collapses while cooking with a friend. Her friend brings her to the local A+E. It is busy and they have to queue to see a receptionist, then wait to be triaged. At triage, she is found to have a marginally low BP and a slightly raised pulse.

The triage nurse cannulates her as per department policy.

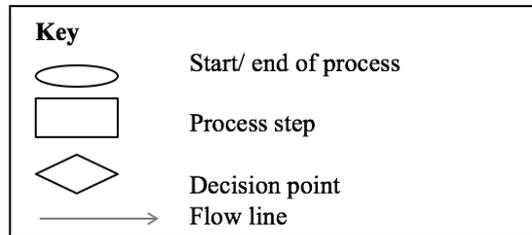
She then has to wait again to be seen by a nurse in the minors department and is now feeling even more faint.

Here are 3 potential options for what could happen next:

1. The nurse tells Sarah to eat and drink plenty, then comes back after an hour to re-measure the observations. Sarah now feels less faint, her vital signs are normal and she is sent home.
2. A doctor is informed and, as she is newly qualified, decides to 'err on the side of caution' and give IV fluids. Sarah's arm gradually becomes red, painful and swollen. When she calls the nurse, he tells her that the vein the cannula where the cannula is sited has burst. The first cannula is removed, a new one inserted and IV fluids restarted. Sarah is moved to the medical assessment unit to avoid breaching the A+E 4-hour waiting target. In the early morning her arm remains slightly sore and swollen but her vital signs have returned to normal and she is sent home.
3. On examination, Sarah is found to have a chest infection. When her observations are repeated her BP and pulse are worse and she has a fever. She is given IV antibiotics and admitted to the medical ward. She is discharged 2 days later.

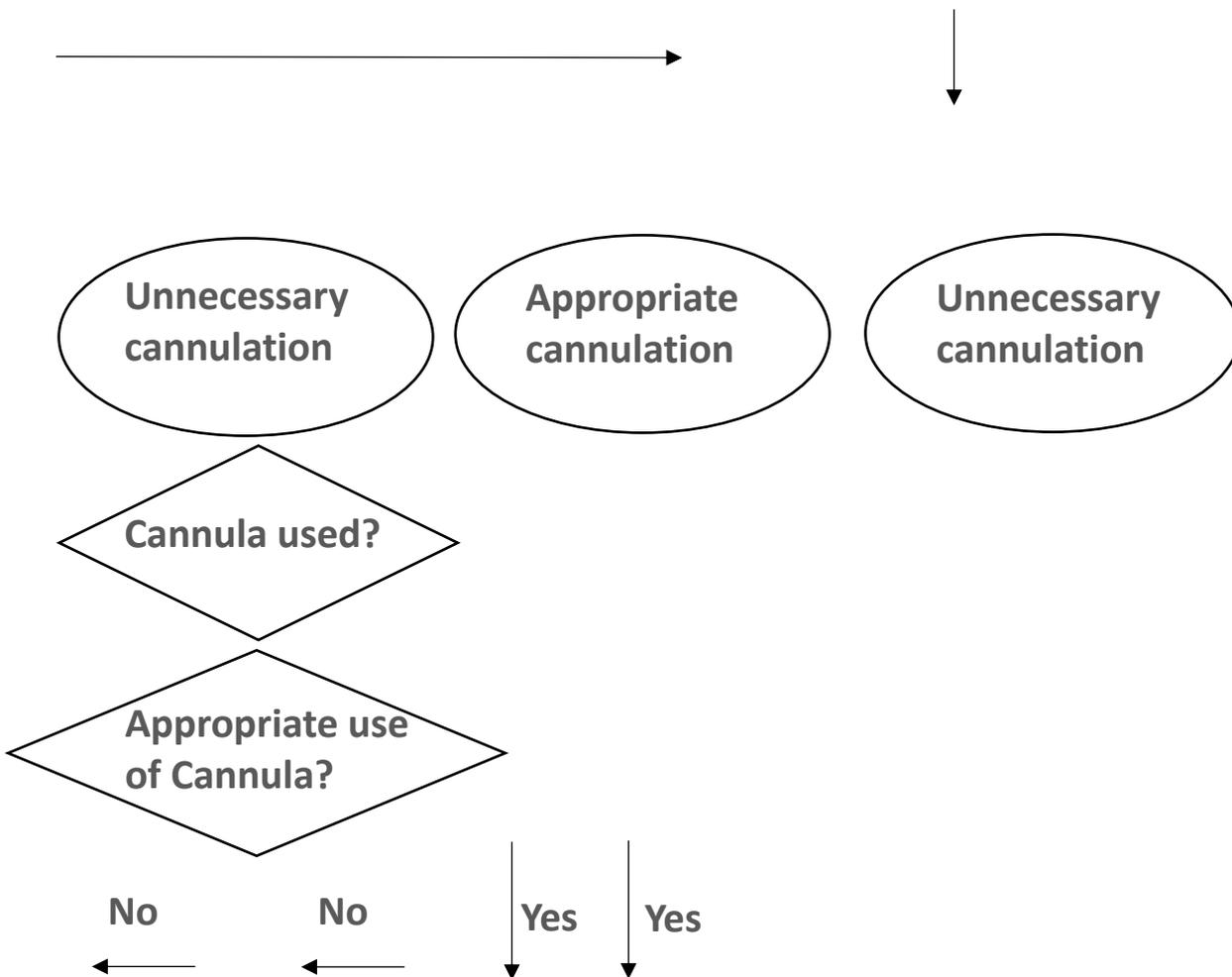
Step 2

Using the components given to you, link them together to create an algorithm or flow chart that reflects the process of a patient like Sarah being cannulated in A+E, and the 3 possible outcomes.



Patient presents to the emergency department

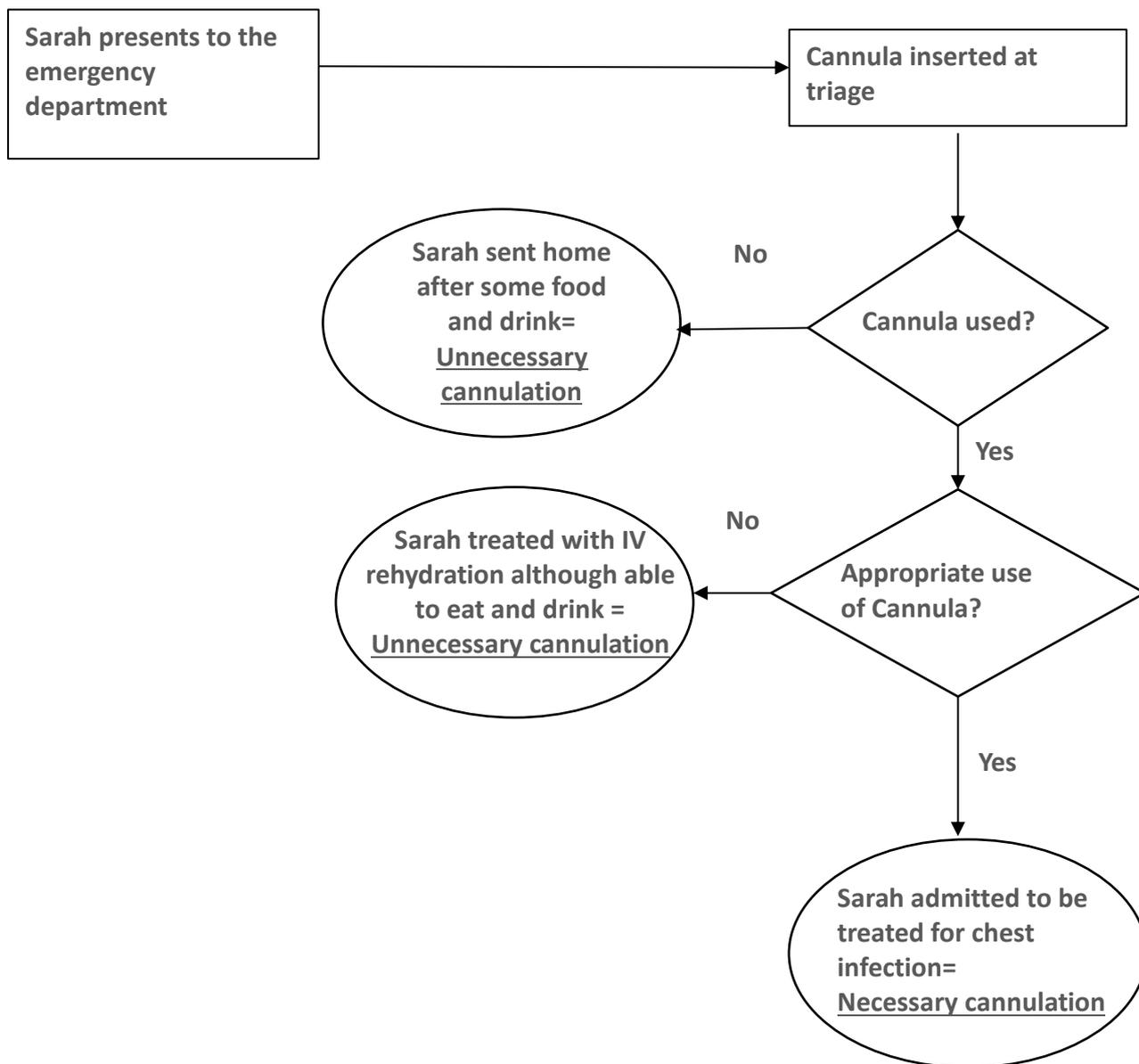
Cannula inserted



Exercise 2: Annotate the value process map

You have now completed a value process map for the cannulation of a patient arriving to A+E. this exercise will give opportunity to **map the flow of 'value' through the process**, to **practise assessing the environmental, social and financial impacts** of the process and to **consider where a potential improvement project might target**.

Example of completed process map:



Step 1

Re-read Sarah's story from exercise 1 and the potential endings regarding her being cannulated.

Step 2

Identify the process steps which **add value** to Sarah's care – i.e. **contribute to improved clinical outcomes**

Step 3

Using this story and the key below, analyse the process map for potential environmental, social and financial resource use/impacts. For each step in the flow chart discuss which of the resources or impacts are relevant, and how. Label the steps with the relevant items from the key (If you don't have colours available, you can use letters, e.g. E1 = Environmental resource No. 1, S4 = Social impact No. 4, F2 = Financial resource No. 2). Which steps have the highest resource use/impacts?

Note: Not all of them will apply, some will apply to several different steps in the flow chart For example Sarah's arrival at A+E is dependent on transport, which has a measurable environmental impact in carbon emissions. The impact will vary depending on the mode of transport she has used.

RESOURCE USE KEY

Environmental resources

- 1 Medications
- 2 Medical supplies
- 3 Anaesthetic gases/nitrous oxide
- 4 Propellant inhaler (MDI)
- 5 Non-medical supplies
- 6 Energy use
- 7 Waste disposal
- 8 Water use
- 9 Staff travel
- 10 Patient travel

Social resources/impacts

- 1 Patient/carer time
- 2 Patient/carer satisfaction
- 3 Patient/carer relationships
- 4 £ cost to patient/carer
- 5 Patient/carer wellbeing
- 6 Staff satisfaction
- 7 Staff wellbeing
- 8 Community impacts
- 9 Supply chain worker wellbeing

Financial resources

- 1 Medications
- 2 Medical supplies
- 3 Non-medical supplies
- 4 Energy use
- 5 Waste disposal
- 6 Water use
- 7 Staff time
- 8 Contracted services (e.g. cleaning, laundry)

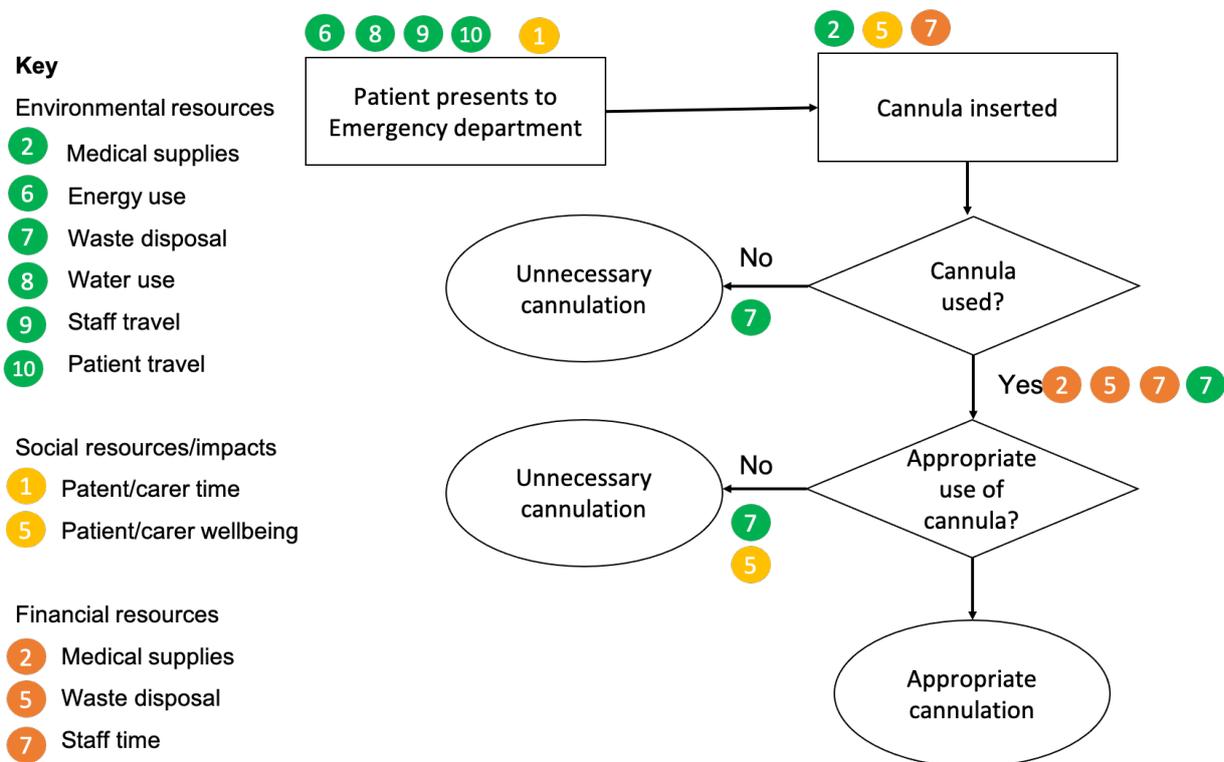
In annotating your map for social impacts, you may find it helpful to use this table to think about the knock-on effects of Sarah’s care each of the following social groups:

Patient	Carer	Dependents	Local community	Distant communities (e.g. supply chain)	Staff

How does each step in the value process map affect each of these social groups?

- For example, the insertion of a cannula is a use of staff time in a busy department, taking time from other tasks and potentially contributing to stress or poor job satisfaction.
- Or Sarah needing time in hospital means finding care for her 3 children.

Step 3 - Example of VPM with annotations



Resource 3 – carbon footprint example

This is a worked example of how to calculate the carbon footprint for a QI project. We have focused on this as it is often the measurement that people are least familiar with but remind students that the whole TBL should be measure to full capture the value of a project.

At one of the hospital Trusts in England, cannulae were inserted routinely in patients attending A&E. All cannulae were fitted with a bionector, for infection control purposes. However, an audit found that many cannulae were not used or used inappropriately. After deciding to reduce cannulation, the hospital reduced the cannulae use by 105 and the bionector use by 98 in one week when compared with the previous week. How much carbon emissions did the hospital save?

105 fewer cannulae were used (Cost: £1.80, weight: 0.061kg)

98 fewer bionectors were used (Cost: £3.51, weight: 0.01kg)

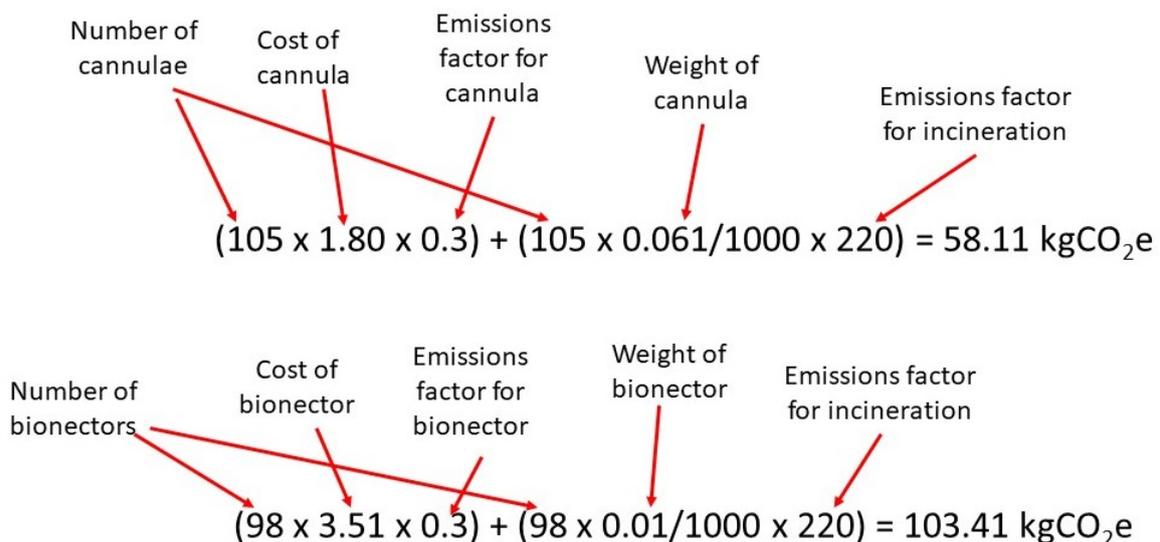
Greenhouse gas (GHG) emissions factors used

- Medical/surgical equipment: 0.3 kgCO₂e/£
- Waste incineration: 220 kgCO₂e/tonne

Calculation: carbon emissions saved

$(105 \times 1.80 \times 0.3) + (105 \times 0.061/1000 \times 220) = 58.11 \text{ kgCO}_2\text{e}$ from reduced cannula use

$(98 \times 3.51 \times 0.3) + (98 \times 0.01/1000 \times 220) = 103.41 \text{ kgCO}_2\text{e}$ from reduction in bionectors



In total the A&E department saved 161.52 kgCO₂e in one week by reducing cannulation. Over a year the GHG emissions savings would amount to 8,399 kgCO₂e.