Translational Simulation

An open access professional development module for simulationists

How to use this module



Module progresses from foundational concepts to advanced practice. Self direct how deep you want to go!

Exercises are designed to work on your own or to discuss with a friend over coffee.



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Translational Simulation

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Overview:

Translational simulation is a simulation activity that translates into improved patient care. In this module we will explore this definition further and then establish a conceptual framework around the principles by working through the development of a translational simulation project.

Exercise 1 : Foundational Principles

In this exercise we will consider what it is that makes simulation 'translational' and how it is differentiated from standard educational simulation. And will begin to explore the potential utility of translational simulation.

Read the article:

• Translational simulation: not 'where?' but 'why?' A functional view of in situ simulation¹

Ask yourself :

- What differentiates translational simulation from simulation based education?
- What sort of systems problems would be well suited to being explored though use of a diagnostic translational simulation?
 - Can you think of any examples from your own experience?
- What kind of adaptations to simulation format and modality might be needed to adapt an educational sim to a translational one?

Retrieval practice :

- In this article, Brazil references <u>Berwick's landmark systems improvement</u> paper².
- What are Berwick's 3 questions that that provide a framework for the Plan, Do, Study, Act cycle?

Exercise 2 : Interventional simulation

Now let's consider an example of a Norwegian project where translational sim was used as an intervention to embed an new process within a health care system.

• <u>Reducing door-to-needle times in stroke thrombolysis to 13 min through protocol revision and simulation</u> <u>training: a quality improvement project in a Norwegian stroke centre³</u>

Ask yourself/discuss with a peer:

- What interventions did the team implement?
 - \circ $\,$ Of these which were at a system level and which were not?
- How would you expect the reductions in door-to-needle time reported in this study to hold up over time?
 - Other than door-to-needle time, what other results did they collect?
 - Do you think there may have been other beneficial outcomes from their interventions that were not measured?

Retrieval practice :

- What methods did the study authors use to generate solutions to the problem of reducing door-toneedle time?
- What other methods could they have considered?

Thorny questions :

• What potential negative impacts on patient care need to be considered when designing a study such as this?

Exercise 3 : Diagnostic simulation

In this exercise we will consider an example where translational simulation was utilised as both a diagnostic tool and a tool for embedding an intervention.

• <u>The clock is ticking: using in situ simulation to improve time to blood administration for bleeding trauma</u> <u>patients</u>⁴

Ask yourself:

- What are the advantages of using simulation as a tool for identifying latent safety threats (LSTs) as opposed to observation of clinical events?
- Can you think of other circumstance where translational simulation could be used as a tool for identifying LSTs

Challenges with diagnostic simulation:

- The premise of diagnostic simulation as a tool to identify LSTs is an alluring one but executing this type of simulation requires a new type of expertise.
- Read this blog post from First 10 EM on the work of Chris Hicks and Andrew Petrosoniak in diagnostic sim⁵: <u>The TRUST study: Latent safety threats in trauma resuscitation</u>⁶.
- You can also hear more discussion in the latter half of this podcast:
 Simulcast Journal Club Podcast October 2020⁷

Discuss with a colleague:

- What have you learned about diagnostic simulation from these papers?
- Did you feel inspired or overwhelmed while exploring these works?
- How can your own health service diagnose and act on latent safety threats better?
- Is there any 'low hanging fruit' in your service where simple changes to known latent safety threats would have a big impact?

Exercise 4 : Beyond time based targets

In the previous exercises many studies had clear, measurable outcomes with targets that clearly align with patient outcomes. However, the allure of measuring 'that which is easy to measure' can mean that we under value other components of the healthcare system that are harder to quantify despite their impact on performance.

Complex socio-cultural aspects of healthcare require a different strategy to measure than KPIs like 'time to antibiotics' and in this exercise we will consider how to do just that.

Read the following article:

• Improving the relational aspects of trauma care through translational simulation⁸

Discuss the paper with a peer

- Does it surprise you that team simulation training can impact the culture of an organisation?
- Can you reflect on examples from your own experience where you have been part of a team with a positive or negative culture and relationships? What drove this?

Retrieval practice

• How did the authors measure the outcomes in this study?

Thorny question

- What is the most effective means you have encountered of reporting non-quantitative data such as this?
- How can we help organisations value the potential of qualitative data?

Exercise 5 : A framework for translational simulation

It can be easy to feel overwhelmed when exploring the achievements of some of our industry's greats but breaking the overwhelming into small, achievable parts can help make the insurmountable possible.

In this exercise we will review a framework for creating a translational simulation project that has been put together by 4 experts in this field.

Listen to the podcast:

• Simulcast Episode 124 Advances in Simulation: Translational Simulation in Action⁹

Review the original article:

• Translational simulation: from description to action¹⁰

Retrieval practice :

• What were the 5 key principals that the authors proposed for a translational simulation project?

Exercise 6 : Contextualise to your service

We've covered a lot in this module and it's now time to start bringing those concepts together. How will you use what you've learned to improve patient care?

Consider a service you work with and identify a goal for performance improvement that would benefit from a translational simulation project. For help identifying a well crafted healthcare improvement goal, you may like to explore <u>Simulcast Self Development Module : Introduction to Quality Improvement¹¹</u>.

Map out an <u>Input Process Output framework</u>¹⁰ to address your quality improvement goal with the help of translational simulation.

Consider:

- What are you trying to accomplish?
- How will you identify the issues contributing to poor performance?
- How will you find solutions to these problems?
- How will you embed your interventions into practice?
- How will you measure the results?

Rehearse and present a 5 minute sales pitch for your translational simulation project to a friend or colleagues

- What questions did they have?
- Were you able to 'hook' them onto your idea?

Reflect:

- Now that you've gone through the process of designing a translational simulation project, is it time to start putting one into action? If so, what's currently stopping you?
- What are the stories, goals and outcomes that might help you motivate others to join you on your journey towards healthcare improvement?
- Who can help you on your journey?

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Alex is an Emergency Medicine and Retrieval Physician and a keen proponent of both educational and translational simulation. After spending the early part of his career in the UK he completed specialist training in Queensland, Australia, where he is currently continuing his education as a simulation fellow at the Gold Coast University Hospital.

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