What is a **simulation**?

sim·u·la·tion

/ˌsimyəˈlāSH(ə)n/

1. imitation of a situation or process
2. the action of pretending

That is just it, in LARC we have designed an exercise that allows us to experience a process in the classroom. The process that we are imitating, or simulating, is the patient flow through an emergency room. The classroom is great for this, as we don’t have to have x-ray machines, labs, needles or even patients. The participants don’t have to be providers or nurses or laboratorians. It is all pretend.

However, pretending has a distinct benefit. We can imitate a process and learn to see waste. After we imitate the process initially, we will learn some amazing tools that help us to remove waste from our processes. Then we will have the opportunity to put our new tools and skills into action on the very same day. We will rerun our emergency department simulation and see if we can improve on our chosen metrics.

Not only do you learn the tools, you have the chance to put them into action right in the classroom. Of course, the goal is that you will take these tools back to your hospitals, clinics, and labs to improve the chosen metrics for your improvement project.

Can you learn these waste-removal tools without the simulation? You can indeed teach and learn the tools without the simulation exercise. However, the simulation provides the positive feeling and experience of improvement and, of course, the simulation is so much more fun!

**SIMULATION**

|  |  |  |  |
| --- | --- | --- | --- |
| PHASE | When  Needed | Materials  Needed | Support  Needed |
| Preparation | Prior to LS | Print: (See below)   * Table Top Tents (24) * Patient Printout (600) * Fishbone Worksheets (15) * ED Work Instructions (15)   Secure:  Flip Charts (3)  Markers (2-3 per flipchart)  Dots (B. McKinney will provide)  Pens |  |
| Set-Up | Evening (Day #1) and 7:30 am (Day #2) | ROOM:   * 3 Tables / Simulation X 3 simulations = 9 tables * Supplies/Transport Table – 1   MATERIALS:  One Set Per Simulation   * 1 Flipchart with stand & markers * Table Tents - 6 + 2 * Patient Printouts (50 – batched) * Dots (5 sheets of each color – 5 colors) * Timing Device (Personal phones will work) * ED Work Instructions (1) | Room Set Up – 3 Simulations (Unimproved state – see diagram)  Distribute Materials – One set to each simulation |
| Simulation Phase #1 | AM (Day #2) |  | One Faculty / Simulation   * Assure participant understanding * Facilitate simulation * Capture times & metrics |
| Debrief Phase #1 | AM | Debrief Questions:  How was quality defined? How did the work environment feel? How did the triage person feel? How did the patients feel? What worked? What didn’t work? Think about what might be done to improve… | Facilitate Debrief \*\*\* |
| Simulation: Improve | PM | ROOM:   * 3 Tables / Simulation X 3 simulations = 9 tables * Supplies/Transport Table – 1   MATERIALS:  One Set Per Simulation   * 1 Flipchart with stand & markers * Table Tents - 6 + 2 * Patient Printouts (50 – single) * Dots (5 sheets of each color – 5 colors) * Timing Device (Personal phones will work)   ED Work Instructions (1) | Room Set Up – 3 Simulations:  Let teams redesign as desired (Faculty facilitate incorporation of Improve/Lean tools prior to re-running the Simulation)  Distribute Materials – One set to each simulation |
| Simulation Phase #2 | PM |  | As with Phase #1 |
| Debrief Phase #2 | PM | * How did it go this time? Did it feel differently? * What improvements did you make? * How were the outcomes? * Are there additional improvements you could make for Day 3? * Was it easier? * Are good systems important? | Facilitate Debrief \*\*\* |

Materials Needed:

Table top tents (= Workstations) – 3 sets of the following signs (Total of 8 X 3 = 24 table tents)

1. **Pre-Registration (Red Dot)**
2. **Triage (Green Dot)**
3. **Full Registration (Orange Dot)**
4. **Treatment (Blue Dot)**
5. **Discharge (Yellow Dot)**
6. **Quality Check (NO Dot)**

**Supplies**

**Transport**

“Dot Exercise\_Patient\_Final” Printout (= Patient)

150 (stapled in batches of 5)

150 single sheets

Dots (= Care provided = Work)

Dot stickers (5 colors)

**\*\*\*DEBRIEF – Contrast Phase #1 vs Phase #2**

|  |  |
| --- | --- |
| PHASE #1 | PHASE #2 |
| Environment / Structure |  |
| Chaos | Order |
| Noise | Quiet |
| Poor structural design – does not match work or patient flow | Redesigned work structure – matches patient and work flow |
| Feeling |  |
| Rushing | Moving at a steady pace |
| Anxiety | Calm |
| Stress | Resilient |
| Uncertainty around activities, i.e., what to do | Greater clarity around activities, i.e., what to do |
| Personnel/ Teams |  |
| Rigid roles | Greater cross training 🡪 Greater flexibility in roles |
| Individual efforts | Team approach |
| No teamwork or coordination | Chance to work as a team, gain consensus, and plan “care” before repeating the simulation |
| No Team Meeting | Team Meeting |
| Inefficiency |  |
| Excessive Waste:  Excess Motion, Transport, Waiting on behalf of the staff & the patients, Reprioritization – distractor, high number of defects, Excess inventory (patients backing up) | Reduced Waste:  Less Motion, Transport, Minimized waiting on behalf of the staff & the patients, Less distractors, decreased number of defects; Little to no inventory (patients backing up) |
| Batching | Single Flow |
| Poor patient flow | Unidirectional patient flow |
| Spaghetti Diagram – many lines = excess transport | Spaghetti Diagram – less lines = less transport |
| Supplies at a distance – needing constant restocking | Supplies at point of service |
| Not focused on metric = Treat as many patients as possible in the time given. Many “patients” “in process” at end of activity. | More focused on metric = Treat as many patients as possible in the time given. Less patients in process at end of “time”. (Teams may elect to pull all staff to assist as able near end of “time” to increase actual number of patients treated.) |
| Work Instructions |  |
| Sparse written instructions – on how to provide quality care | Written instructions - not yet, but consensus on how to perform to provide quality |
| No training on procedures – on how to provide quality care | Training/demonstrating how to perform in order to provide quality |
| Little to no chance to ask questions | Ability to ask qualifying questions |
| Quality |  |
| Quality check - only at the end, when no chance to correct | Built in quality throughout the process, not just checking at the end |
| No definition of “Quality Care” (i.e., never told that dots could not touch line) | Clear definition of “quality care” (aware that dots cannot touch line) |
| High defect rate (Dots touching line) | Decreased defect rate |
| Resources |  |
| Limited human resources – “not enough personnel” | Same number of personnel, but much smoother |
| Poorly designed facility | Same facility, but with redesign of the structure to match the workflow (process) |