

# Unity Health Toronto Simulation Program

## ROI Framework Example - NICU

| Value Domain                                                   | Broadened Description / Ideas                                                                                                                      | Data Sources                                                                                            | Types of Questions to Ask Users / Stakeholders                                                                                                                                                                                                                        | Ways of Relating to Literature                                                                                                             | NICU Examples (from report)                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Direct Value (to participants)</b>                          | Staff development, engagement, and satisfaction from participation in the simulation process; improved decision-making confidence.                 | Participant feedback (verbal or survey), debrief notes, attendance logs, post-simulation reflections.   | <ul style="list-style-type: none"> <li>• Did staff feel their input influenced design decisions?</li> <li>• How confident are teams in the new space now vs. before?</li> <li>• Did simulation increase engagement, satisfaction among staff? (estimate %)</li> </ul> | Literature linking simulation participation to improved engagement, reduced burnout, and sense of agency in system change.                 | <ul style="list-style-type: none"> <li>• 36 interdisciplinary participants (nursing, physicians, allied health, volunteers, parents).</li> <li>• Point-of-care staff engaged in design validation across eight sessions.</li> <li>• “Objective: increase staff satisfaction and involvement in planning their new NICU space.”</li> </ul>                                                                        |
| <b>Social Value (benefit to patients, families, and teams)</b> | Enhance patient/ family experience, safety, and inclusion; mitigates latent safety threats; promotes collaboration.                                | Safety threat log, design modification records, family experience feedback, interprofessional debriefs. | <ul style="list-style-type: none"> <li>• How much safer do you think the space is for patient care? (%)</li> <li>• How will these design changes affect family experience?</li> <li>• Did the simulation strengthen collaboration across disciplines?</li> </ul>      | Research on family-centered design and patient safety improvements from early simulation testing.                                          | <ul style="list-style-type: none"> <li>• Validated need for family storage, privacy, lighting zones.</li> <li>• Confirmed call-bell placement for family safety/ accessibility.</li> <li>• Infection control (e.g. sink placement, contamination reduction).</li> <li>• “Validated need for cabinet storage in family zone.”</li> </ul>                                                                          |
| <b>Operational Value</b>                                       | Workflow and process improvements; time savings; ergonomic and safety optimizations; reduced inefficiencies.                                       | Simulation findings table, workflow maps, pre/post time-motion observation, design drawings.            | <ul style="list-style-type: none"> <li>• What workflow inefficiencies were identified or resolved?</li> <li>• How much faster/smoothen are key tasks now? (%)</li> <li>• Did simulation accelerate decision-making and reduce iteration time?</li> </ul>              | Studies linking simulation-informed design to improved workflow efficiency and safety (e.g., translational simulation for system testing). | <ul style="list-style-type: none"> <li>• Adjusted room layouts to reduce congestion (e.g., moving sinks, repositioning carts).</li> <li>• Identified need for double oxygen/air outlets for surge and daily workflow.</li> <li>• Standardized headwall design across all rooms to streamline use.</li> <li>• “Explore possibility of 2<sup>nd</sup> sink to allow two nurses to work simultaneously.”</li> </ul> |
| <b>Strategic Value</b>                                         | Aligns with institutional priorities (safety, quality, readiness, innovation); fosters cross-team collaboration, culture of proactive improvement. | Leadership feedback, redevelopment planning notes, OpR reports, strategic planning documents.           | <ul style="list-style-type: none"> <li>• Did simulation accelerate or improve key redevelopment decisions?</li> <li>• How much did it contribute to operational readiness?</li> <li>• What strategic risks or delays were avoided?</li> </ul>                         | Organizational learning and high-change culture literature; case studies on simulation in healthcare redesign.                             | <ul style="list-style-type: none"> <li>• Supported St. Michael’s redevelopment goals by validating design pre-construction.</li> <li>• Reduced risk of post-build modifications.</li> <li>• Demonstrated simulation as a decision-making tool integrated into capital design.</li> <li>• “Next steps for clinical, redevelopment and OpR* teams to operationalize findings.”</li> </ul>                          |
| <b>Financial Value (implied/potential)</b>                     | Avoidance of rework costs; time/resource savings through early issue detection; improved equipment utilization.                                    | Redevelopment cost data, procurement records, post-occupancy modifications avoided.                     | <ul style="list-style-type: none"> <li>• What costs were avoided by identifying design issues early?</li> <li>• How much rework time or materials were saved? (%)</li> <li>• Did simulation reduce the need for expensive post-build changes?</li> </ul>              | Cost-benefit analysis literature linking design simulation to avoided expenditures.                                                        | <ul style="list-style-type: none"> <li>• Simulation required no added budget; used low-cost mock-up materials.</li> <li>• Prevented downstream costs identifying errors pre-build (e.g., headwall outlet configurations, sink placement).</li> <li>• “Simulation informed improvement opportunities before build phase.”</li> </ul>                                                                              |