IMPROVING SAFETY IN HEALTHCARE THROUGH SIMULATION AND TECHNOLOGY

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At the end of the day, we are people training people to be better at what they do.
Medical Errors vs. Aviation Errors
Patient Safety and Aviation Safety

- 11.5 accidents/M.
  263 deaths/M.
  1 death every 1 million miles (approx.)

- 0.9 accidents/M.
  23.3 deaths/M.
  1 death every 1 billion miles (approx.)

Medical Errors vs. Aviation Errors
Patient Safety and Aviation Safety

- #9 Cause of Death (COD)
  - 11.5 accidents/M.
  - 263 deaths/M.
  - 1 death every 1 million miles (approx.)

- #3 COD
  - 440,000 deaths/year

- 10B
  - 0.9 accidents/M.
  - 23.3 deaths/M.
  - 1 death every 1 billion miles (approx.)

Healthcare

Bringing aviation’s culture of safety to healthcare

Leveraging our experience in simulation-based training to improve the safety and efficiency in healthcare
FACTORS DRIVING SIMULATION-BASED TRAINING IN HEALTHCARE

- Increasing use of simulation in healthcare
- Digital transformation of healthcare training
- Limited access to live patients during training
  - Apprenticeship model
  - Limited access to high-risk procedures
- Growing emphasis on patient safety
  - Reducing medical errors*
  - * 3rd leading cause of death in USA
- Medical technology revolution
  - Advancements in medical technology are driving the adoption of simulation.

Advancements in medical technology are driving the adoption of simulation.
The Digital Transformation Enables Adaptive, Closed-Loop Training That Leverages Value-Based Care and Precision

PUBLIC OPINION ABOUT SIMULATION FOR PRACTICING CLINICIANS
Better meets distance and on-demand learner needs, focused on practicing anesthesiologists

Improves learner feedback, reporting and administration

#1 continuing education choice during the pandemic

Generated over 0.5 BILLION data points over ~ 100,000 sessions
Analyzing “in simulation behavior” provides insights about:

- Practice patterns
- Professional blind spots / weaknesses

Synergy between FOQA (flight data) and SOQA (sim/training data) in civil aviation
OPERATING ROOM SAFETY AND TEAMWORK
HOW CLINICIANS ARE MAKING DECISIONS
SURVIVING VS. THRIVING

1. Self-Actualisation
2. Esteem
3. Love and Belongingness
4. Safety
5. Physiological Needs
We have a crisis on the horizon
CRITICAL NURSING SHORTAGE

1.2 MILLION NEW NURSES NEEDED IN THE USA BY 2030
# Heavy Workload Impact on Nurses and Patient Safety

<table>
<thead>
<tr>
<th>Impact on Nurse</th>
<th>Resulting Issues</th>
<th>Impact for Patient</th>
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<tbody>
<tr>
<td>Less time</td>
<td>Bypassing safety protocols and incomplete communication</td>
<td>Lapses of continuity in treatment</td>
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<tr>
<td>Less attention to details</td>
<td>Mistakes and brain strain</td>
<td>Risk of over- or under-medicating patients</td>
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<tr>
<td>More stress</td>
<td>Reduced job performance</td>
<td>Greater risk of medical errors</td>
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<tr>
<td>More shortcuts</td>
<td>Compromised quality of patient care</td>
<td>Risk of infections and compromised data security</td>
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CRITICAL ROLE OF SIMULATION IN NURSING TRAINING

Nurses Educational Life Cycle

Simulation Hours

Clinical Hours

Simulation Hours

Theory

Professional Accreditation Hours

50% of clinical hours substituted by simulation hours
EFFICIENT
SAFE
SUSTAINABLE

RETHINKING NURSING EDUCATION
Thank you
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Artificial intelligence

À l’avant-garde de la technologie numérique

Forefront of digital technology