CuraCuddle : Robotic Soothing Unit for Immunocompromised Children

Sophie Bibault

Masters of Business Administration, Thompson Rivers University

HLTH 5500: Integrating Information Technology in Healthcare

Dr. Anila Virani

June 13, 2025

Demographic change: The NeoCuddleBot switched to the CuraCuddle. It switched from an AI-powered care robot for NICU babies to the same robot for immunocompromised children that need to stay in isolation for their own safety.



Prompts: Create an image of a sad looking child in an isolation room of a hospital. Have parents on the outside of the isolation window looking sadly at their child. (<u>openart.ai</u>, 2022)



Benefit: Soothing Immunocopromised Children

Prompt: Create an image of the child sleeping peacefully on a bed that is blue and pink and resembles a friendly robot. Make the robot's body the bed structure in which the boy is sleeping. Have the robot's arms on the side of the device with mist coming from the top of the robot's head. (openart.ai, 2022)



Benefit: Real-time vital tracking straight from the device

Prompt: Create many monitors attached to the robotic device with a nurse that is looking at

those monitors. (openart.ai, 2022)



Challenge: Discomfort felt by children towards the device

Prompt: Create an image of the child sitting across from the robot device and looking at it.

(<u>openart.ai</u>, 2022)



Challenge: Children becoming too attached

Prompt: Create an image of the child hugging the robot and looking attached to the device.

(<u>openart.ai</u>, 2022)

Google Search: No more relevant or similar devices have been made public since the previous search on May 26, 2025. Other devices used in children's hospitals are all interactive devices and none with AI monitoring feedback, scent dispersion, heartbeat, or breathing simulation. No devices in or out of Canada have similar uses as the CuraCuddle (children's version of the NeoCuddleBot). I searched for: "therapeutic robot companion for children hospitals", "pediatric robot for cuddling", "pediatric robot for comfort of patients".

Response to feedback provided: The feedback you provided in part A was " One area for potential enhancement would be to include an image of a more medically fragile infant perhaps one with visible tubes or medical equipment to better reflect the realistic conditions in which the NeoCuddleBot would be used." Although I would like to be able to implement that feedback for the current assignment, there were and still are ethical issues surrounding making AI images of sad or sick looking babies and children. I attempted to do this for the previous assignment and each time I input the prompt, the website would say that there was an "ethical error". I looked this up and it turns out that it is difficult to have AI devices make pictures of babies and children in general because of ethical reasons, let alone making the subjects look sick or sad.

For the part B assignment, I was unable to have the child look sick or sad or have any tubes attached to them although I tried.

Narration:

In a quiet wing of the pediatric hospital, six-year-old Leo sits alone in an isolation room, separated from his parents by a thick glass wall. Diagnosed with an autoimmune disease, Leo must be shielded from common germs and viruses as contact with the outside world could be dangerous. His parents watch helplessly from the hallway, their faces pressed gently against the window, longing to hold their child. Inside, Leo curls up on a sterile hospital bed, surrounded by machines, wires, and the absence of human touch.

One day, a nurse wheels in a new kind of device, the CuraCuddle, a robotic soothing unit designed specifically for children like Leo. Shaped like a friendly companion with soft blue and pink tones, the device gently envelops Leo in its warming arms, simulating the breathing, heartbeat, and scent of Leo's mother. For the first time in days, Leo's eyes soften, and his breathing slows. That night, he sleeps peacefully, cradled by CuraCuddle.

The hospital staff monitors his vital signs directly through the device, displayed clearly on surrounding screens. A nurse smiles as she watches the data, heart rate stable, stress levels decreasing. CuraCuddle has become not only a source of comfort for Leo, but also a valuable clinical tool for the care team.

CuraCuddle can't replace a mother or a father, but it offers children like Leo something vital, it offers emotional safety in a world where physical safety means separation. For immunocompromised children, the CuraCuddle represents an opportunity for comfort and care, for there to be connection, even in isolation.