



A game that turns swallowing a pill into a mission the child commands

ARC Game Jam · Sheba Medical Center · Team: Masha, Nechama, Geffen (Product Manager)

2-minute talk track (for visitors at the booth)

Hook. Picture a 7-year-old in day hospitalization with 1–6 pills to swallow today [5]. He closes his mouth – and no one can make him open it. In that moment, it's the one thing in his life he controls.

Problem. Over half of children aged 6–11 can't swallow a standard pill [1][2]. In cancer care it matters: children with leukemia take oral chemotherapy every day for two years, and missing more than 10% of doses triples the risk of relapse [4]. At Sheba's pediatric oncology, about 2 new children every month need to learn [5]. When they refuse, the next step is a nasogastric tube or IV.

Solution. In Glide Mission the child is the Captain. He tells us how he feels, picks a candy (from a sprinkle up to an M&M) and a support (water, yogurt or puree), and launches it down a water slide. A calm copilot models slow breathing. No blame, no bribes – and he can pause any time.

Why it works. The candy-size ladder is the same method clinicians already use [9]. With 14 days of daily practice, all 33 children in one study learned to swallow pills [6]. And games change behaviour: in a randomized trial, young cancer patients who played a game took their oral medication more consistently and felt more in control [13].

For parents. A 2-week dashboard shows how each session felt and how the child's mood before playing shaped it.

Ask. We want to pilot at Sheba, then in the US. Want to try a launch?

1. The problem

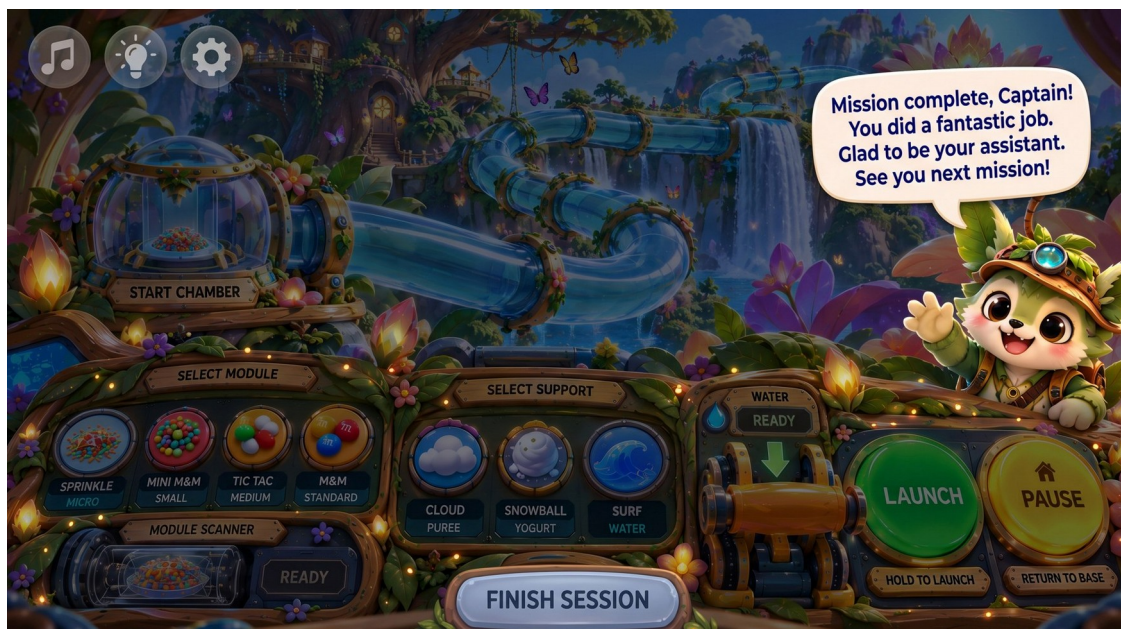
Most children physically can learn to swallow a pill. Many simply refuse – they close their mouth, and nothing (not even the promise of a toy car) can make them open it. For a child who moves between home, day hospitalization and long hospital days, far from routine and friends, refusing is sometimes the only decision left that is truly theirs.

- **It is common:** 54% of 124 children aged 6–11 could not swallow a pill before training [1]; parents of over half of 304 children reported their child could not swallow a standard pill or small capsule [2]. Even in a hospital sample of 109 children aged 3–17, 16% could not swallow any placebo pill [3].
- **It matters in oncology:** children with leukemia take daily oral chemotherapy (6-MP) for two years; about 25% took fewer than 90% of doses, which tripled their relapse risk [4].
- **At Sheba:** about 2 new children per month in pediatric oncology need to start taking pills, typically 1–6 pills a day in day hospitalization [5]. Even crushed into syrup, many still refuse – they know it will feel bad.
- **Nausea makes it harder:** up to 70% of children on chemotherapy have nausea at some point [5].
- **The cost of refusal:** a nasogastric tube or IV – more distress and less control for the child, and a significant, repeated time cost for nurses and doctors.

2. Our insight: control

Refusing the pill is often about control, not ability. Glide Mission does not fight that need – it acknowledges it. When the child says "I want to be in control", the game hands him the controls: he chooses the pace, the candy, the support and the moment to launch. Choosing for himself – to go ahead or to pause – is the point. The adults' eyes move from the child to the character on screen, which lowers the pressure in the room.

3. The game



Game screen (design): the child picks a module and a support, then holds LAUNCH. The copilot cheers at the end.

- **The child is the Captain** and fully controls the screen.
- **Mood check-in:** before playing, the game asks "How do you feel today?" – fine, tired, nauseous, angry or sad. Answering is itself a choice, and it tells the child that someone cares.

- **The mission:** choose a candy module (sprinkle → mini M&M → Tic Tac → M&M) and a support (puree, yogurt or water), then launch it down the water slide to the receiving station.
- **The copilot** models calm, steady breathing and gives short, empathic feedback – encouraging, never sugary, and never promising rewards.
- **After each session** the child rates the experience with one of five smileys (very happy → very sad).
- **Target age for this demo:** 6–10. A version for children up to 16 is planned.

Progression: more control at every level

Each session ends with a surprise at the receiving station (it lights up, a purple flame appears, roots grow around it...), so children want to come back. Higher levels give the child more control:

Level	Name	What the child controls
1	Core mission	Choose candy + support and launch; a surprise celebration at the receiving station.
2	New worlds	New backgrounds with matching candies (e.g., a space world with alien-style candies).
3	My own support	The child names a support of his own (e.g., cherry puree); later, AI can draw it into the game.
4	The hammer	Tap up to 3 times: half → 4–6 pieces → powder. (In-game only – real tablets are crushed only when the pharmacist approves.)
5	Slide master	Control the slide speed and choose a different slide.

Design principles

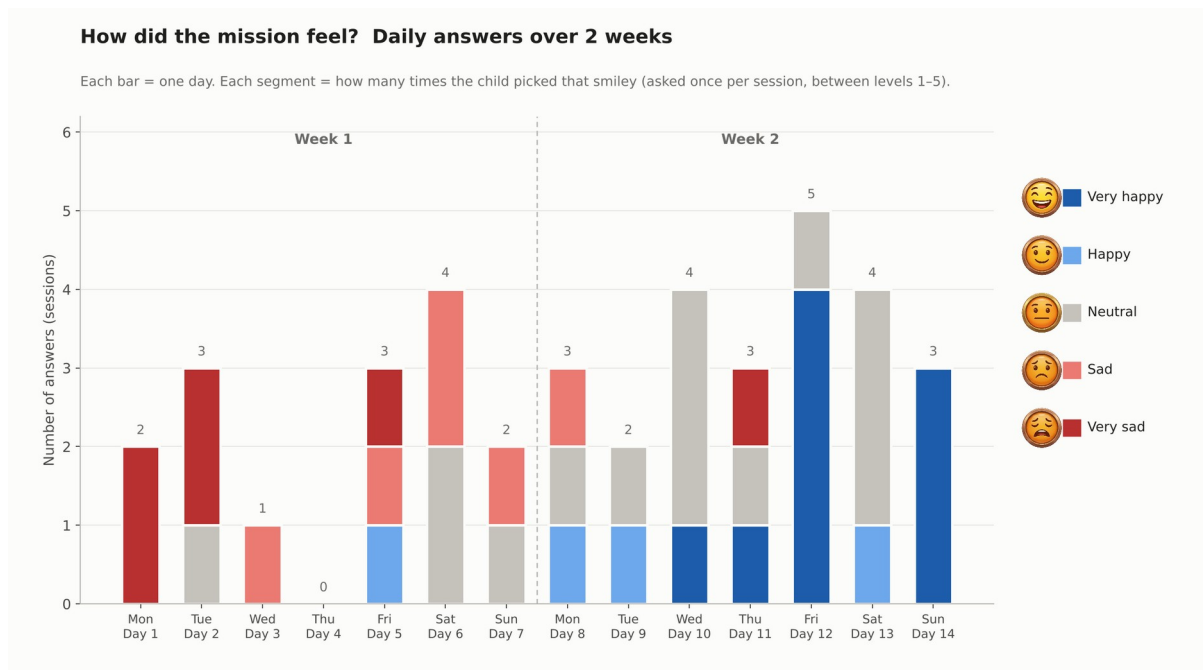
- **Non-judgmental:** pressing PAUSE never triggers a blaming message – the child can restart or exit.
- **Low stimulation:** calm visuals, background music can be muted, accessibility button in the full version.
- **Honest goal:** the game does not cure. It helps the child feel more in control and take the pill **when he decides, with a positive attitude** – that is our measure of success.

4. Why it should work – the evidence

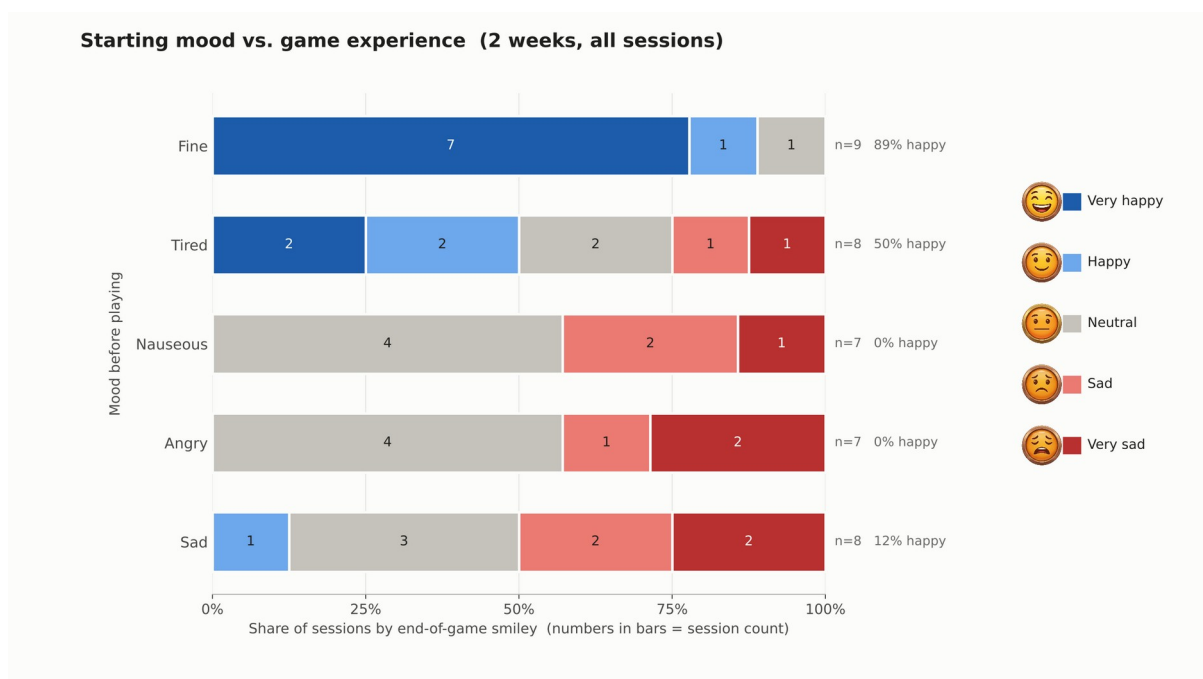
- **Graded practice works:** all 5 studies in a systematic review successfully taught children to swallow pills [7]. With daily practice for 14 days, all 33 children who practised succeeded [6]. A UK hospital "Pill School" taught 87% of children (aged 3–18) in a single session [8].
- **Our candy ladder mirrors clinical practice:** St. Jude's program moves children from sprinkles to mini M&Ms to Tic Tacs, then to placebo capsules [9].
- **Games can change health behaviour:** in the Re-Mission randomized trial (375 cancer patients aged 13–29), players took oral chemotherapy and antibiotics more consistently and gained self-efficacy faster than controls [13]. Glide Mission applies the same principle to the first barrier: swallowing the pill.

5. The parent screen (mock data)

Parents spend far more time with the child than the nursing team, and most practice happens at home. The parent screen shows two weeks of sessions:



Graph 1 – How did the mission feel? Daily smiley answers over 14 days. Sessions move from mostly sad in week 1 to mostly happy in week 2 (average 2.1 → 3.8 out of 5). [*]



Graph 2 – Mood before playing vs. game experience. Sessions that started "fine" ended happy 89% of the time; sessions that started "nauseous" or "angry" never did. [*]

What a parent learns: progress over time, and the best moment to practise – e.g., not right after nausea. In the full game, the child can also leave his own feedback and ideas.

[*] **Mock data – illustrative only, not real patient data.** The patterns are modelled on published evidence: (a) skill improves with daily practice over about 14 days [6], so experience improves across two weeks; (b) nausea is common on chemotherapy [5], and in [6] nausea and sedation were the main reasons children could not practise, so a "nauseous" start leads to worse sessions; (c) anxiety makes pill-swallowing harder, which is why clinical programs add relaxation techniques [9].

6. Competitors

Today's options are paper sticker-chart games [10], instructional videos [12], placebo-pill training kits [11] and staff-led hospital programs [8][9]. None is an interactive game the child plays at home, and none

gives parents or clinicians progress data. The closest evidence for games – Re-Mission [13] – targets teenagers with cancer, not pill swallowing.

7. Who benefits

Who	Value
Child	A sense of control, less fear, fewer tubes and IVs.
Parents	A calm way to practise at home, and data on progress and good moments to practise.
Medical team	Less time and frustration spent on refusals; fewer escalations to NG tube or IV.
Hospital	Saves staff time – a reason to purchase the game and distribute it to patient families.

8. Privacy

In the full game, each child has a login, and personal data is stored only in that account. This is the minimum security threshold; a clinical pilot will also need to meet the relevant health-data regulations in each country.

9. Roadmap and pilot

Pilot: start at Sheba's pediatric oncology day hospital, then a pilot in the USA.

Future feature	Details
Languages	Per country and hospital – e.g., English & Spanish (USA); Hebrew, English, Russian, Arabic & Amharic (Israel).
Ages 11–16	A version with older visuals and more complex missions.
Build your own slide	A slide builder; possible partnership with Mojang Studios (Microsoft), the makers of Minecraft [14].
AI supports	The child describes a support, and AI creates it in the game.
Child feedback	In-game comments and ideas from the child to improve the game.
Clinician view	A summary for the medical team alongside the parent screen.

References

- [S] Sheba Medical Center, pediatric oncology – challenge mentor, personal communication, October 2026.
- [1] Meltzer EO, Welch MJ, Ostrom NK. Pill swallowing ability and training in children 6 to 11 years of age. *Clinical Pediatrics*. 2006;45(8):725–733. <https://doi.org/10.1177/0009922806292786>
- [2] Polaha J, Dalton WT, Lancaster BM. Parental report of medication acceptance among youth: implications for everyday practice. *Southern Medical Journal*. 2008;101(11):1106–1112. <https://sma.org/southern-medical-journal/article/parental-report-of-medication-acceptance-among-youth-implications-for-everyday-practice/>
- [3] Prospective assessment of pill-swallowing ability in pediatric patients. *Clinical Pediatrics*. 2017 (Ann & Robert H. Lurie Children's Hospital of Chicago). <https://doi.org/10.1177/0009922817724399>
- [4] Bhatia S, Landier W, Hageman L, et al. 6MP adherence in a multiracial cohort of children with acute lymphoblastic leukemia: a Children's Oncology Group study. *Blood*. 2014;124(15):2345–2353. <https://pubmed.ncbi.nlm.nih.gov/24829202/>
- [5] St. Jude Children's Research Hospital. Nausea and vomiting during cancer treatment. Together by St. Jude. <https://together.stjude.org/en-us/treatment-tests-procedures/symptoms-side-effects/nausea-vomiting-during-cancer-treatment.html>
- [6] Kaplan BJ, Steiger RA, Pope J, Marsh A, Sharp M, Crawford SG. Successful treatment of pill-swallowing difficulties with head posture practice. *Paediatrics & Child Health*. 2010;15(5):e1–e5. <https://academic.oup.com/pch/article/15/5/e1/2639510>
- [7] Patel A, Jacobsen L, Jhaveri R, Bradford KK. Effectiveness of pediatric pill swallowing interventions: a systematic review. *Pediatrics*. 2015;135(5):883–889. <https://doi.org/10.1542/peds.2014-2114>
- [8] Feasibility of developing Children's Pill School within a UK hospital. *Archives of Disease in Childhood*. 2021;106(7):705. <https://adc.bmj.com/content/106/7/705>
- [9] St. Jude Children's Research Hospital. A not-so-bitter pill to swallow. 2019. <https://www.stjude.org/research/progress/2019/a-not-so-bitter-pill-to-swallow.html>
- [10] Hamilton Health Sciences. Help your child learn to swallow pills (Pill Swallowing Challenge Game). <https://www.hamiltonhealthsciences.ca/wp-content/uploads/2019/08/SwallowPillsHelpChild-lw.pdf>
- [11] Wisconsin School of Business, Weinert Center. UW alum develops new product to teach children how to swallow pills (Pill Skills kit). <https://business.wisc.edu/centers/weinert/blog/uw-alum-develops-new-product-to-teach-children-how-to-swallow-pills>
- [12] OHSU School of Medicine. Instructional videos on swallowing pills. <https://www.ohsu.edu/school-of-medicine/snack-lab/instructional-videos-swallowing-pills>
- [13] Kato PM, Cole SW, Bradlyn AS, Pollock BH. A video game improves behavioral outcomes in adolescents and young adults with cancer: a randomized trial. *Pediatrics*. 2008;122(2):e305–e317. <https://doi.org/10.1542/peds.2007-3134>
- [14] Mojang Studios – developer of Minecraft, acquired by Microsoft in 2014. https://en.wikipedia.org/wiki/Mojang_Studios