

# Semi-Automatic Medicine Dispenser

*Transforming medication dispensing into a safe, simple, and digital process*



## Positive Impact

- Enhances patient safety
- Frees up valuable nursing time
- Digitalises medication management.



## Initial Validation

Our multi-year successful international validation in numerous EU countries, guided by Bosch's corporate innovation framework and Lean Startup principles, included rigorous concept testing, customer discovery, and validation. The process delivered deep market insights, confirmed demand, and built strong traction with nursing homes.



## Solution

The proposed medicine dispenser is an **innovative hardware/software system in table format**. It automates medication sorting and dispensing, accelerating processes by **50%** and reducing human errors by **70–90%**. Beyond dispensing, it **digitally manages patient, billing, and inventory data**, while employing **optical inspection, QR scanning, and computer vision** to ensure safe, accurate, and traceable medication delivery.



## Problem

The problem with manual medication dispensing in nursing homes is that it is slow, paper-based, and highly prone to human error—especially when dealing with similar medication boxes. This leads to an estimated error rate of **40–45% in dispensing**, contributing to a **global annual cost of \$21 billion** from medication errors. Compounding this issue is the severe shortage of nursing staff and limited digital support, which strains healthcare providers and impedes both quality control and efficient inventory management.



## Technology

- The Semi-Automatic Medicine Dispenser combines advanced mechatronics, software, and computer vision in a compact 160×80 cm workstation. It supports parallel dispensing of up to 28 patient boxes, integrates a semi-automatic debulking system, pill breaker, QR scanner, and label printer, and continuously validates accuracy via optical inspection. All data is logged and integrated into digital workflows for inventory, invoicing, and patient care.



## Call to Action !!!

We are looking for experienced business developers, and open-minded individuals with hardware and software development experience. Interested? Do not hesitate to contact us and reach out at:

[entrepreneur@hightechxl.com](mailto:entrepreneur@hightechxl.com)



## Potential Markets

The solution—combining a smart dispensing device with integrated software services—will bring significant benefits in countries such as:

- CEE: Tangible need validated by 13/16 signed LOIs from nursing homes, with strong backing from key stakeholders and the largest medicine wholesaler.
- Germany: Validated demand with 4 LOIs from nursing homes and strong distributor interest, amid a critical nursing shortage.
- Poland: High demand with 16/19 institutions interested and over 10 long-term testing offers.
- Spain & Portugal: Confirmed interest from institutions requesting trials of the compact tabletop solution.
- Belgium: Strong interest from leading associations such as Apricusa, with long-term testing opportunities.
- East Asia (e.g. Taiwan): Open to manufacturing and distribution partnerships with innovative hospital providers.