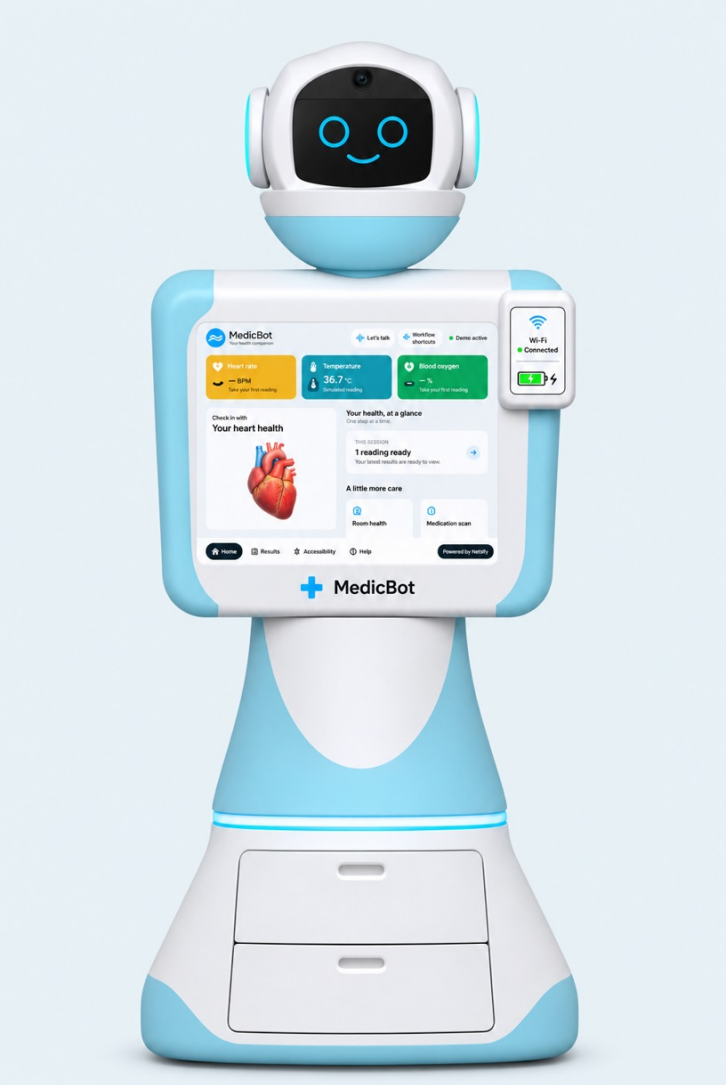
How MedicBot works. What comes next.

A visual guide to the prototype, the design and the future.

A friendly presence.

Your team in control.

Clear information.
Spoken introductions.
A platform designed to evolve.



16 illustrated pages

Prototype today.
A wider vision for tomorrow.

Exterior concept illustration. Screen artwork does not establish installed health sensors.

> **Read the stage, not just the picture.**
>
> Software demonstrated, CAD design and proposed future modules are identified separately throughout this guide.

A useful role around people

The first goal is a clearer, more approachable everyday interaction.



For the person

See the words, hear the message and choose whether to take part.

For the team

Choose an approved introduction, adjust the display and stop the session.

For the organisation

Test one useful task before committing to a wider role.

Problems to investigate

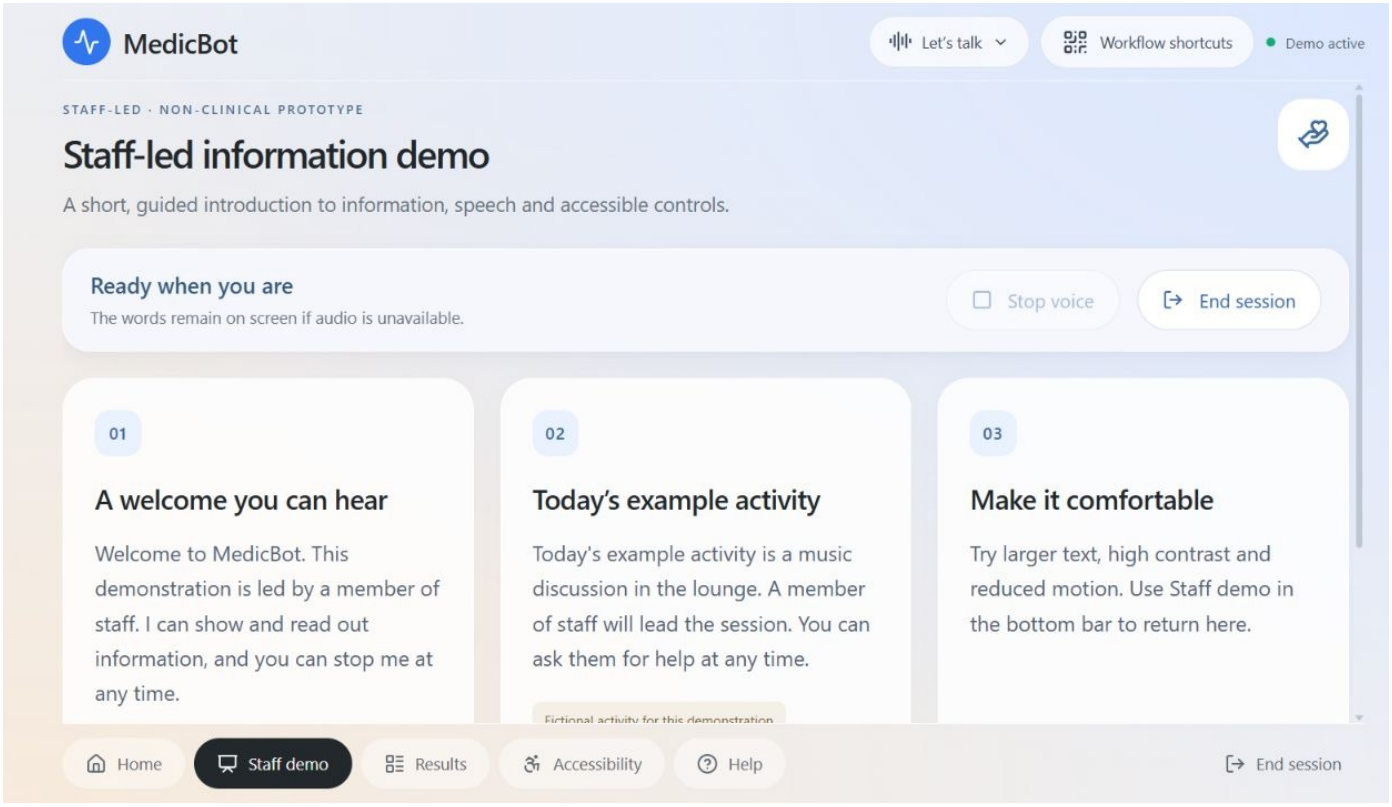
Repeated explanations, information that is hard to follow, awkward screen reach and equipment that is difficult to repair. These are hypotheses to explore with care teams.

What would count as progress?

People can follow the introduction and staff can run it reliably. Any advantage over a tablet or the usual staff process still needs to be measured.

What Proto can do today

The maintained software provides a staff-led, non-clinical demonstration.



Show + speak

Prepared or typed text, visible messages and speech playback.

Adjust + stop

Larger text, contrast, reduced motion, stop voice and end session.

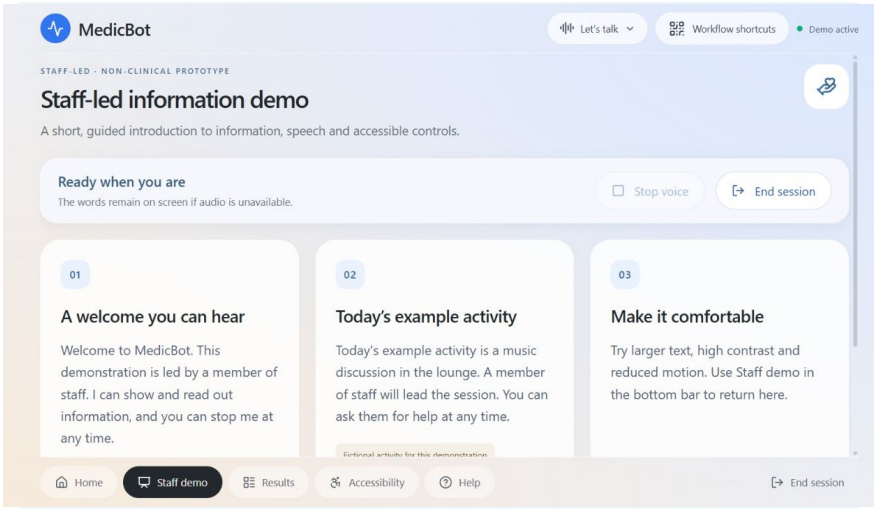
The face and console share application state. Registered code shortcuts can navigate the interface; they are not patient authentication.

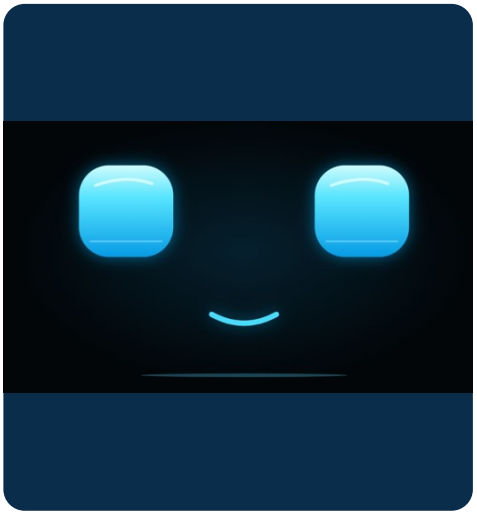
Current boundary

Health values are simulated or illustrative. Proto has no established installed health sensors, autonomous navigation, diagnosis, triage or dispensing.

One guided interaction

Staff choose the moment. The application coordinates the message and face.





01 / Choose

Staff select a welcome or activity introduction.

02 / Coordinate

A local Python / FastAPI controller manages session state.

03 / Show + speak

React console and face update; local speech plays.

04 / Finish

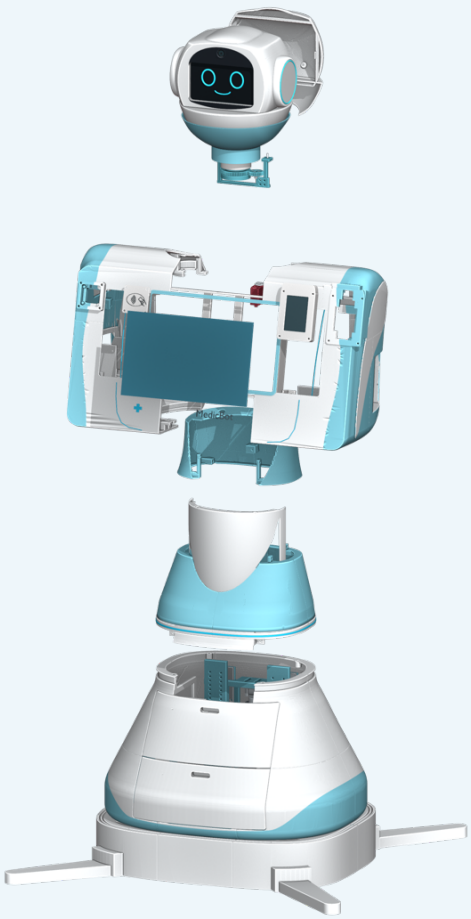
Staff stop, adjust or reset the session.

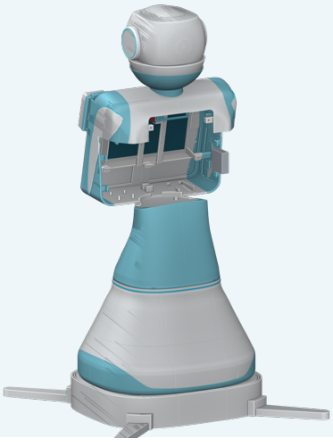
Software and mechanisms have separate control paths.

The intended main computer is a Raspberry Pi 4. Separate Pico neck and LED firmware is not yet connected to the main application.

A body made from modules

The exterior brings displays, access panels and storage into one platform.





Two displays

A 14-inch body touchscreen and a separate 7-inch face display are specified in the CAD.

Access to components

Separate printed shells, removable panels and fasteners are intended to support repair and revision.

CAD views describe the design; fit, materials, cleaning and service time still need physical testing.

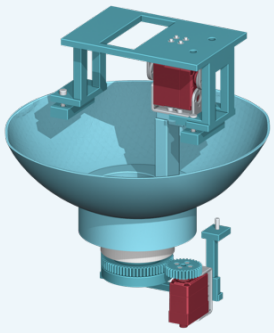
The look and the engineering are different evidence.

Approved smooth exterior artwork is a design visual. Development CAD includes structural and stability details that are not visible in the artwork.

A visible expression.
A separate motion system.

The face animation works in software; physical movement needs commissioning.





Yaw + tilt

The servo pair turns the head and nods. Tilt is direct drive.

Gearing + cable route

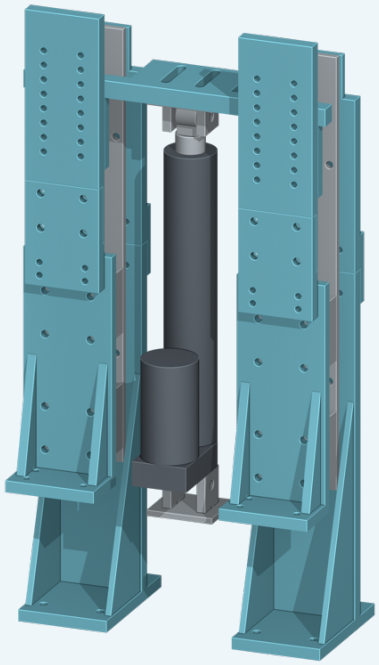
A 32-tooth pinion drives a 64-tooth yaw gear. A central passage routes cables.

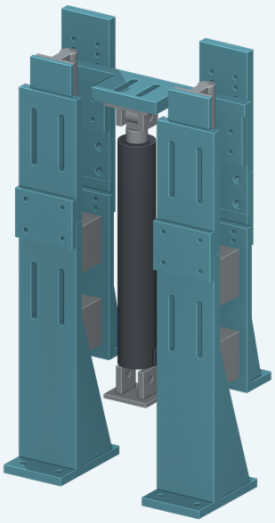
Connect only after the mechanism is reliable.

Set physical limits, check cable travel and load, and resolve the recorded LED fault. Main-app head control remains a future integration task.

Bring the interface into reach

A guided lift is designed to change the height of the upper structure.





150 mm travel

Nominal CAD height: about 1,350 to 1,500 mm.

Guided movement

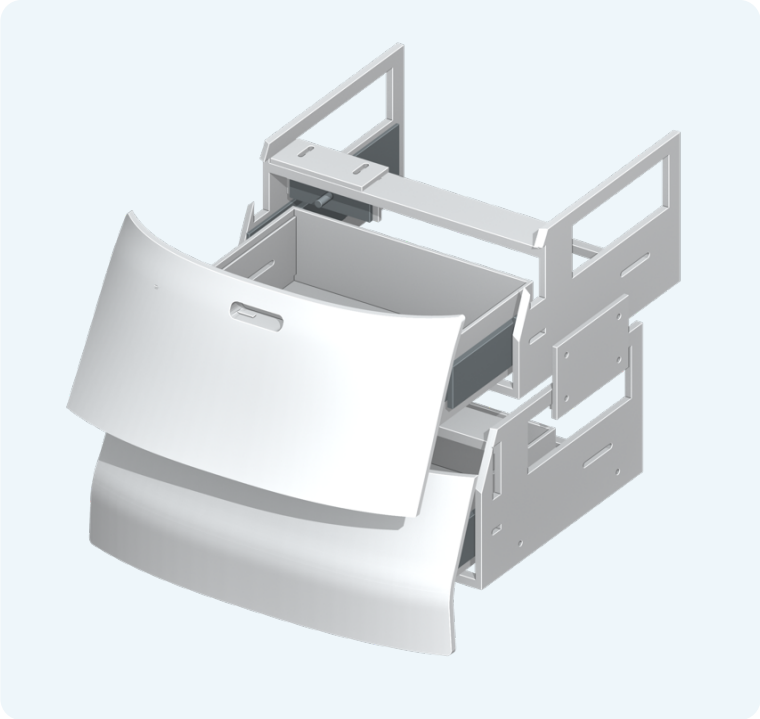
Two 300 mm SBR16 guides and four blocks constrain the moving carriage.

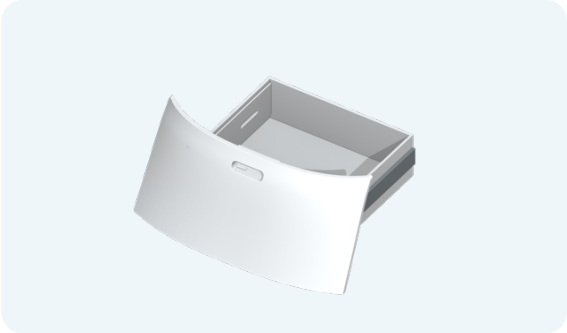
The head, body, electronics and drawers rise together; the floor base stays fixed. Nested guards cover the changing gap.

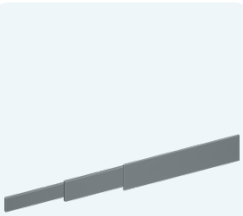
> **Design dimensions are not a tested load rating.**
>
> Validate exact actuator fit, loads, stopping, guarding and stability. Development CAD includes stabilising feet; raised use without them is not approved.

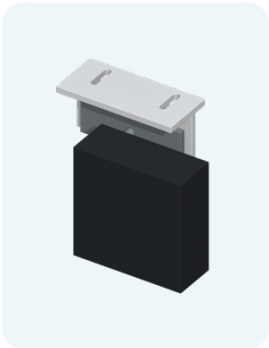
Two drawers.
Simple manual access.

Present the drawer card, then pull the drawer by hand.









Printed trays + runners

Two separate trays use 200 mm telescopic runners. Usable capacity and safe load need testing.

Independent card locks

Each QWORK lock uses four AAA batteries. It is separate from the chest reader, Pi and robot power.

Storage, with a defined purpose.

Start with agreed non-clinical items such as leaflets or activity materials. No automatic dispensing, stock tracking or medicine-control function is established.

Start with everyday moments

Use the robot where a team can identify a clear task and useful feedback.





Care-home introduction

An activities lead chooses a welcome, keeps the words visible and leads the activity.

Clinic information

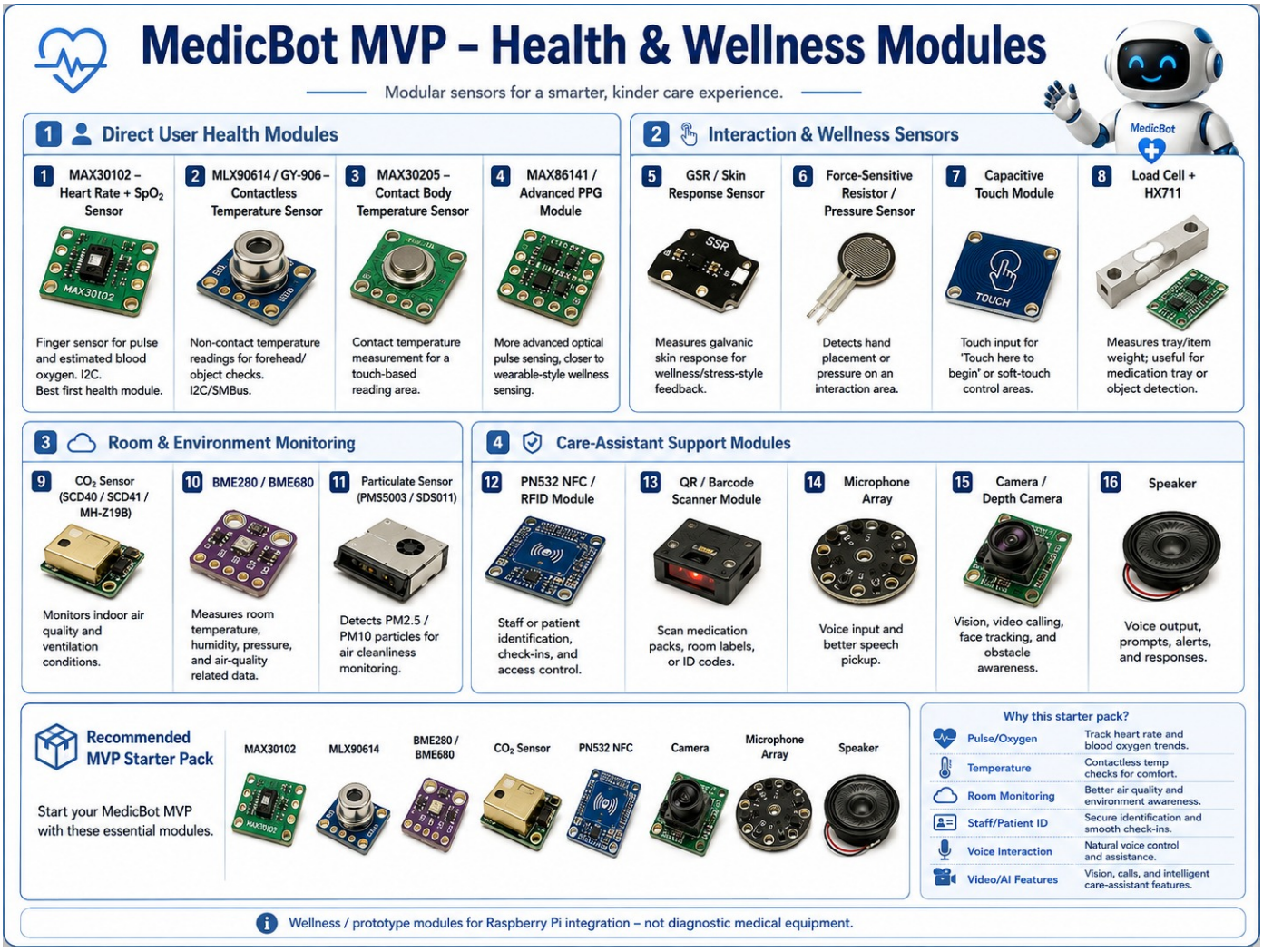
Explore generic directions and what happens next, with staff available to help.

Staff training is another early use: practise startup, display choices, stopping and recovery before wider demonstrations.

> **Evaluate the task, not the novelty.**
>
> Compare understanding, prompts needed, stops, preparation time and faults. These scenes are illustrations, not photographs of customer trials.

A wider set of possibilities

The full design is a later stage, awaiting vetting and component selection.



Four directions to explore

Physiological sensing. Touch and load. Room conditions. Communication and identification. The next three pages explain what those components could contribute.

> **The supplied sheet is a concept reference.**
>
> Its “MVP” label, board pictures and benefit wording do not describe installed Proto functions. These are candidates and alternatives, not a final parts list.

From a signal to useful information

Health-related sensing needs its own integration and evidence programme.

Pulse + optical sensing

MAX30102; MAX86141 as a more advanced optical acquisition candidate. Signal quality and algorithms still matter.

Infrared temperature

MLX90614 / GY-906 reference: object-temperature sensing. Exact variant, distance and ambient effects need review.

Contact temperature

MAX30205: temperature sensing with carefully designed thermal contact and enclosure.

Skin electrical response

GSR: changes in resistance or conductance. A signal alone does not identify stress, calm or emotion.



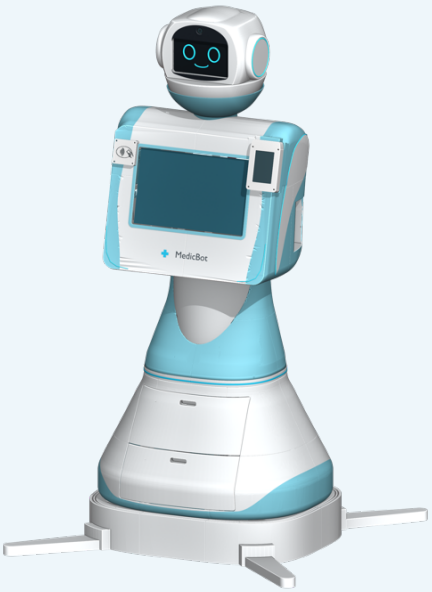
Choose the intended measurement, engineer contact and mounting, then compare the complete system with suitable references.

Proto has no established installed health-sensor capability. These candidates are not validated MedicBot measurements.

Sources: MAX30102 | MAX86141 | MLX90614 | MAX30205

Sense the room. Explore new inputs.

Different signals answer different questions; select them around a task.



Room conditions

SCD40 / SCD41 for CO2. BME280 for temperature, humidity and pressure; BME680 adds gas response, not direct CO2.

Airborne particles

PMS5003 / SDS011 candidates. SDS011 adapter code exists; real installation still needs commissioning.

Touch + applied force

Capacitive touch and an FSR could detect interaction. They are not interchangeable or blood-pressure sensors.

Load / weight

A selected load cell plus HX711 interface could explore item presence or tray load after calibration.

MH-Z19B is an earlier, discontinued CO2 candidate requiring reselection. Every reading should identify source, units, time and quality.

Sources: SCD41 | BME680 | MH-Z19B | HX711 interface

Hear, see and identify. With a clear purpose.

Hardware is one part of a useful, understandable interaction.



NFC + QR / barcode

Explore tags and workflow codes. PN532 needs lifecycle review; reading a code is not identity assurance.

Microphone array

Explore sound input and constrained voice tasks. Current software does not recognise spoken questions.

Camera / depth camera

Possible remote assistance or distance information. Capture alone does not provide navigation or recognition.

Speaker + conversation

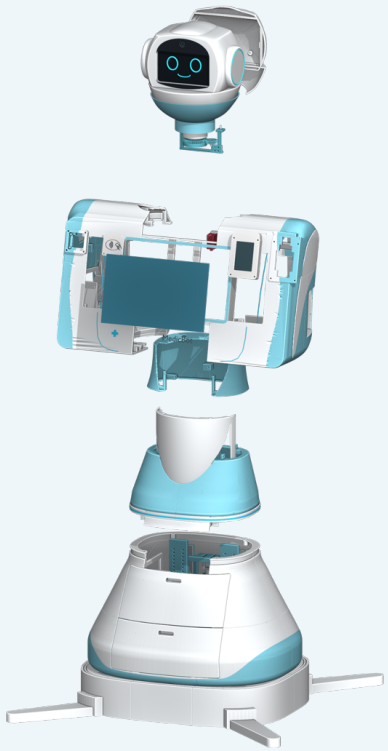
Speech output exists. Review final speaker clarity; any future conversation needs boundaries and staff handover.

Choose the data needed, who can access it and when it is removed. Give people visible controls and an ordinary staff-led alternative.

Sources: PN532 lifecycle | Microphone categories | Depth sensing

Built to care. Designed to last.

A longer useful life starts with practical, measurable design choices.



Repair the component

Keep panels, screens and controllers accessible. Measure replacement time and reassembly quality.

Retain useful parts

Develop upgrades around documented interfaces and existing modules.

Use materials well

Record print waste, durability and energy use. Explore suitable materials and specialist recovery.

Filamentive / specialist PLA recovery

Explore the Filamentive scheme for eligible, accepted printing waste. Participation and measured environmental savings are not yet established.

Development ambitions. No quantified carbon, waste or energy reduction is claimed.

Sources: Filamentive scheme and conditions

Compare the job to be done

Different products solve different problems. Start with the same task.



MedicBot's proposed combination

A friendly physical form, visible information, a separate face, staff-controlled speech, serviceable modules, adjustable height and storage.

The whole-system experience, customer value and lifecycle cost still need to be demonstrated.

Tablet + staff	A strong baseline for the same information and spoken message.
Engage Arrive	A dedicated check-in product; MedicBot is not yet an integrated patient-arrival system.
Moxi	A hospital delivery platform with locking compartments; Proto has no autonomous delivery.
temi / PARO	Telepresence/service and companion categories respectively; different priorities from Proto's initial information task.

Supplier descriptions, not head-to-head tests. MedicBot pricing and UK like-for-like total cost are unconfirmed.

Sources: Engage Arrive | Moxi | temi | PARO

Prove one useful task. Then grow carefully.

A staged route from the prototype to a dependable product.

01 / Assemble + commission

Check power, startup, displays, audio, motion, guarding and drawer stability.

02 / Evaluate a real task

Compare staff-only, tablet and robot versions; record understanding, effort and faults.



03 / Choose additions

Select one module with a defined user benefit, data flow and test plan.

04 / Build the evidence

Resolve support, maintenance and any clinical or privacy requirements before wider use.

Help shape the next step.

enquiriesmedicbot@gmail.com | Explore MedicBot online

Evidence: condensed from the 9 November 2026 project guide and its software, CAD and primary-source review. CAD renders and supplied illustrations are development references; care scenes are not deployment photographs.