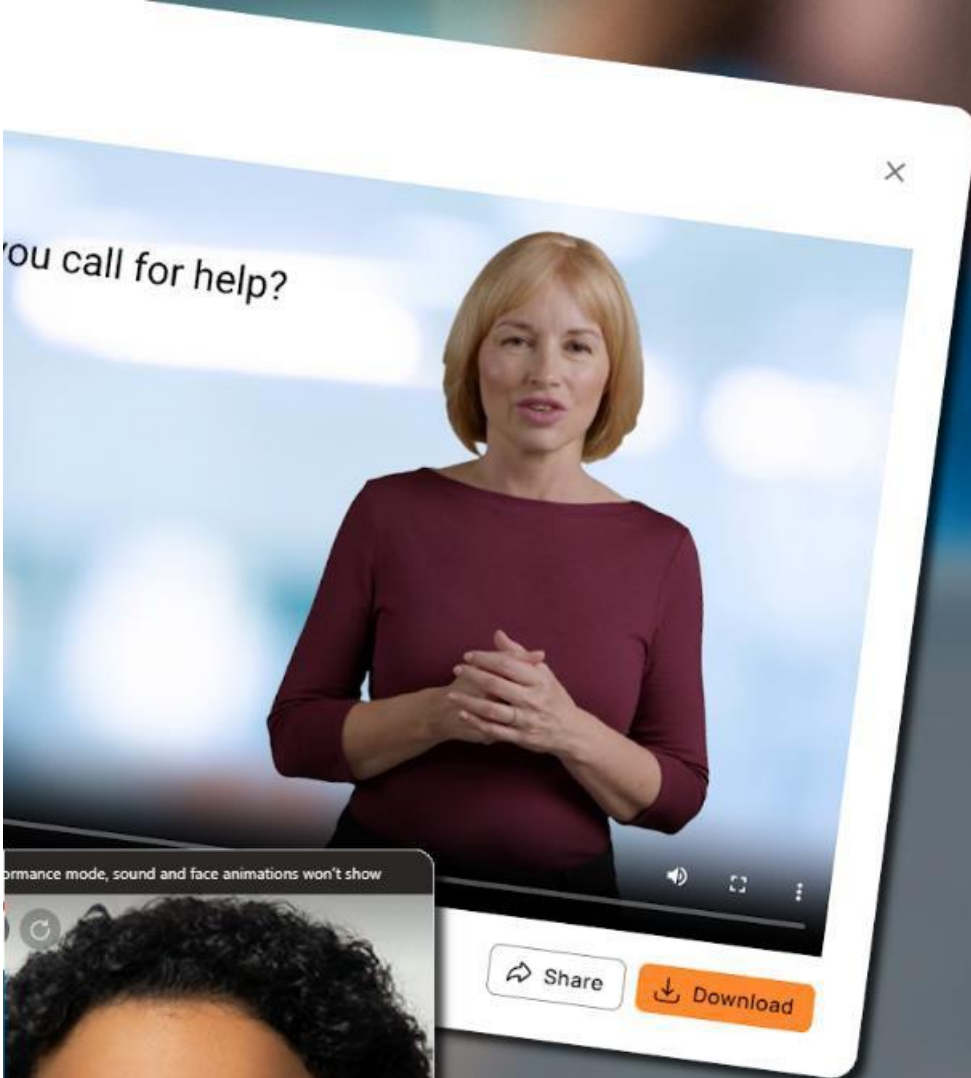
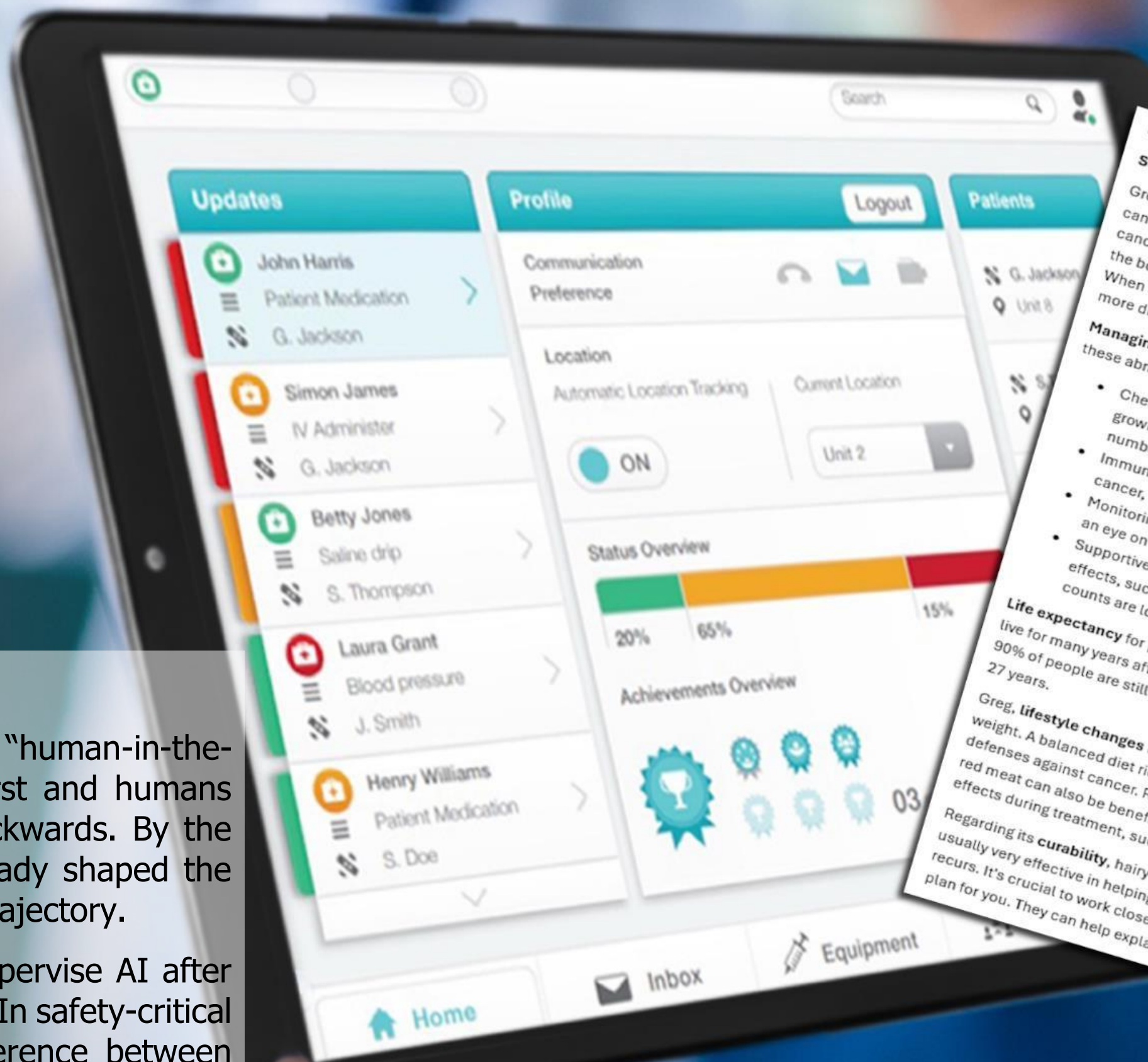




Co-Intelligence vs. Human-in-the-Loop

Many healthcare AI systems describe themselves as “human-in-the-loop,” but this model often assumes that AI acts first and humans correct later. In nursing care, that sequencing is backwards. By the time a human is asked to intervene, the AI has already shaped the interaction, the patient’s expectations, or the clinical trajectory.

Co-intelligence reverses this logic. Humans do not supervise AI after the fact; they govern how, when, and whether AI acts. In safety-critical care, that distinction is not academic—it is the difference between oversight and control.



For: Greg XXXX
Support for: Hairy Cell Leukemia
Greg, I wanted to share some information about hairy cell leukemia, a cancer that affects the blood and bone marrow. It's called hairy cell leukemia because the cancer cells appear somewhat hairy under a microscope. When these hairy cells accumulate, they can crowd out normal cells in the bone marrow, making it more difficult for your body to fight infections, carry oxygen, and produce new blood cells. Here are some common approaches:
Managing hairy cell leukemia often involves treatments that target these abnormal cells. Here are some common approaches:

- **Chemotherapy:** This type of medicine kills cancer cells or slows their growth. It's frequently used to treat hairy cell leukemia and a number of abnormal cells in the bone marrow.
- **Immunotherapy:** This treatment boosts your body's natural defenses against cancer, involving medicines that specifically target the cancer cells.
- **Monitoring:** If leukemia isn't causing any symptoms, doctors may keep an eye on it with regular check-ups and blood tests.
- **Supportive care:** This includes treatments to manage symptoms and side effects, such as antibiotics for infections or blood transfusions if blood counts are low.

Life expectancy for people with hairy cell leukemia is generally good. Many live for many years after diagnosis. The 5-year survival rate is around 90%, and 27 years.
Greg, **lifestyle changes** may include adopting a healthy diet and maintaining a healthy weight. A balanced diet rich in vitamins and minerals can support the body's natural defenses against cancer. Regular physical activity and avoiding processed foods and red meat can also be beneficial. It's important to follow a healthy diet and manage side effects during treatment, such as nausea and loss of appetite.
Regarding its **curability**, hairy cell leukemia is treatable but not curable. Treatments are usually very effective in helping patients lead a normal life, but the condition often recurs. It's crucial to work closely with your healthcare team to find the best treatment plan for you. They can help explain the options and what to expect from each one.

Healthcare Doesn't Need Smarter AI.

It needs Nursing First Co-Intelligence:

Designing Human-Governed AI for Real Care Teams

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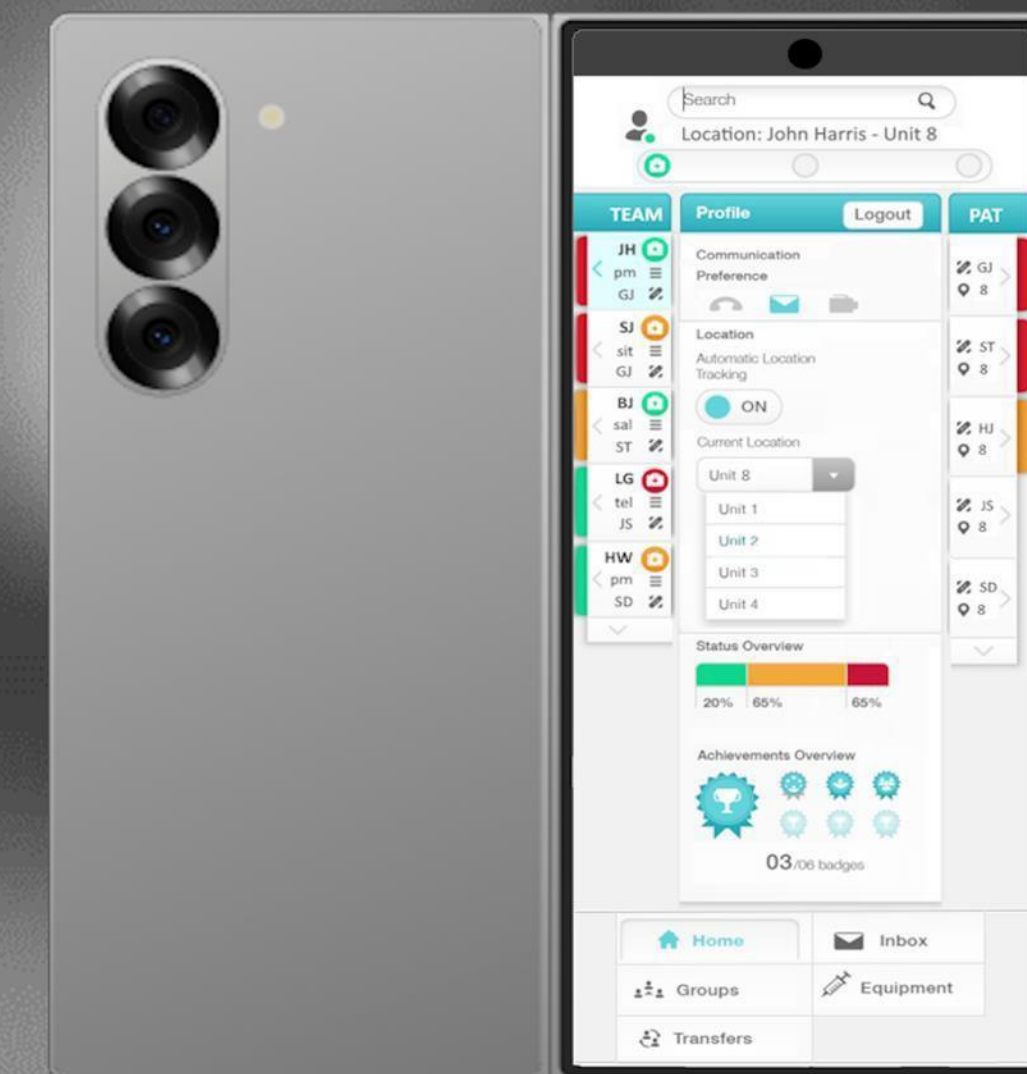
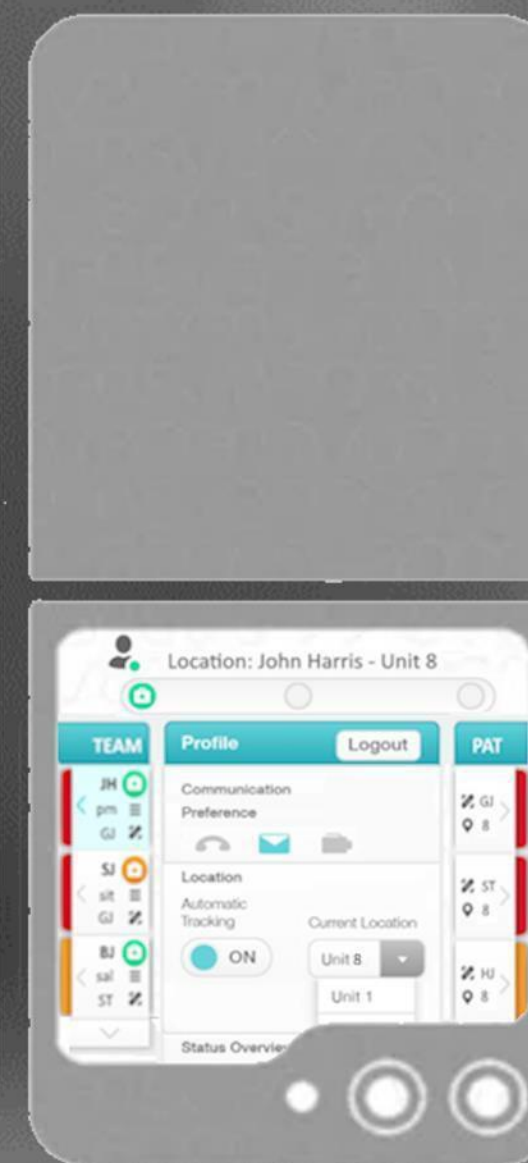
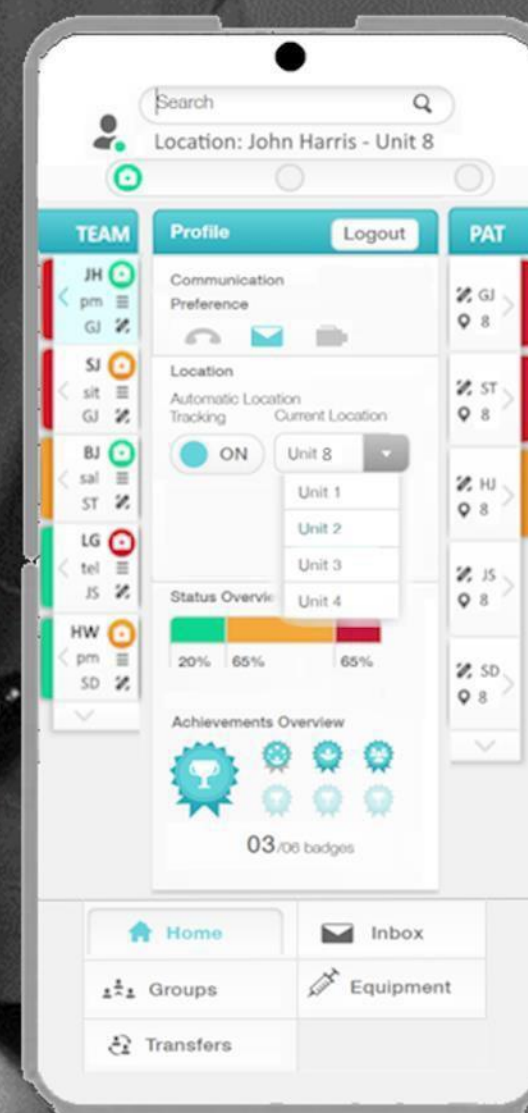
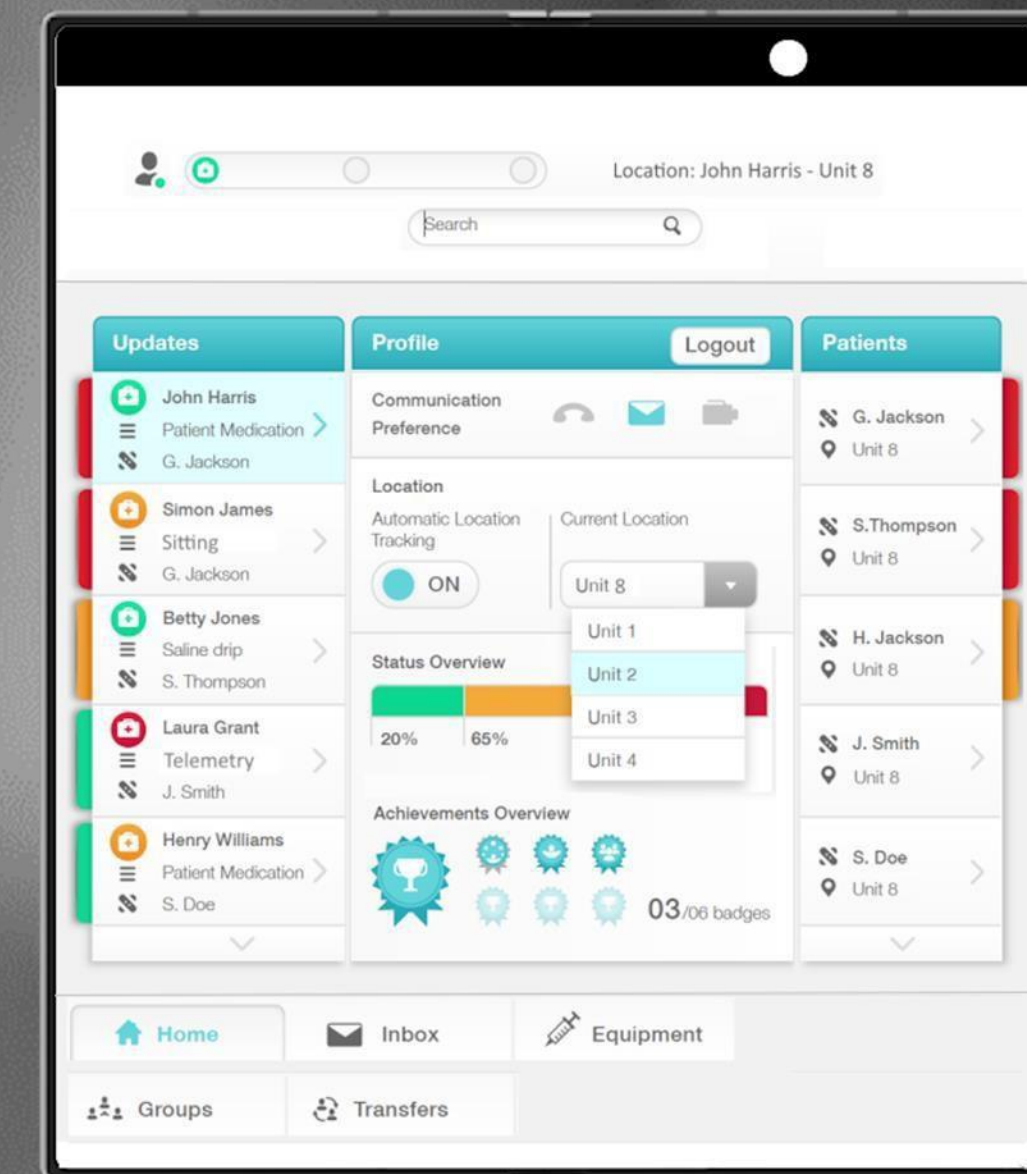
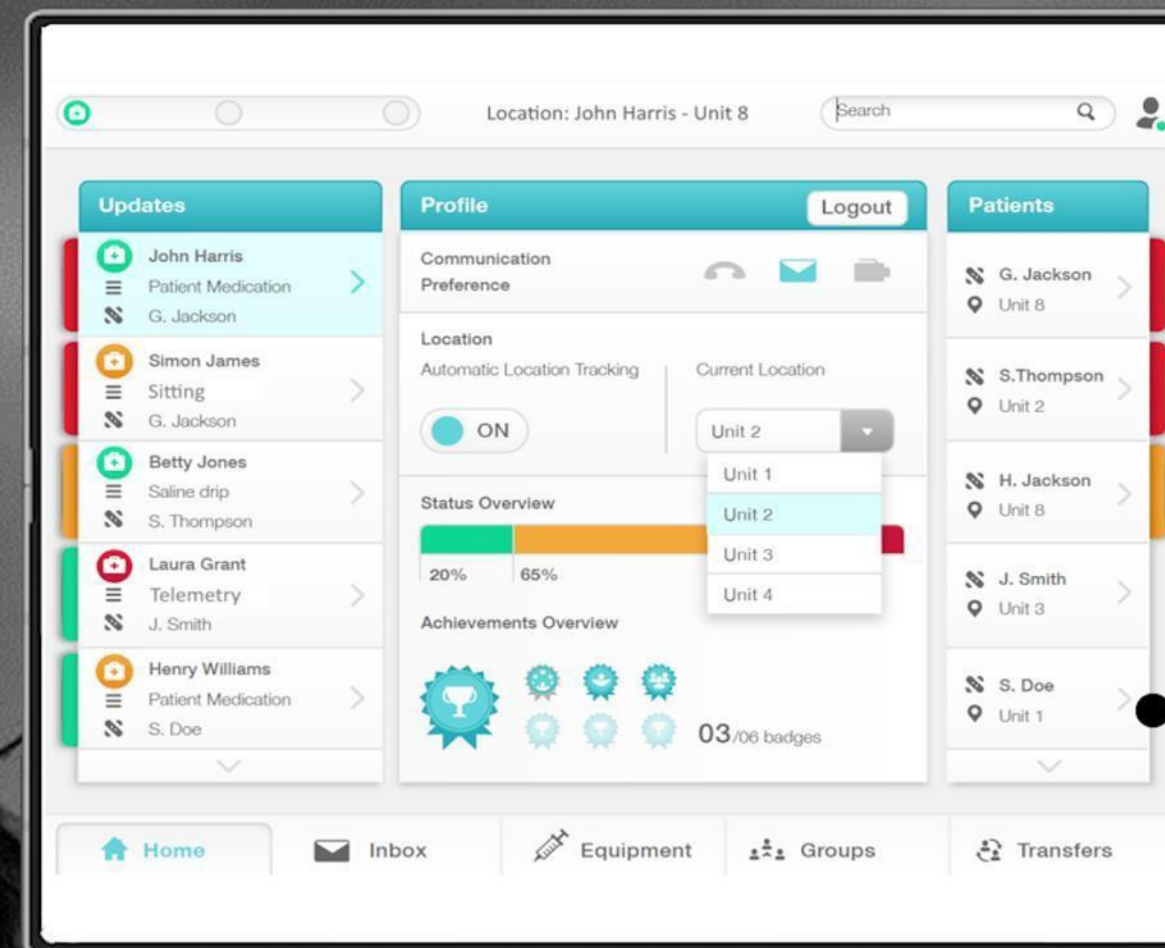
- [Nursing First GenAI, Agentic AI, & AI: Meet Eddie, Emma, Otto, & Seer](#)
- [Nursing First GenAI, Agentic AI, & AI: Assessments and Reassessments](#)
- [Nursing First GenAI & AI: Foundation, Safety & Effectiveness](#)
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Why Co-Intelligence Is No Longer Optional

As healthcare systems introduce more agentic and generative AI into care delivery, coordination—not intelligence—becomes the limiting factor. Without explicit governance, role clarity, and shared situational awareness, each additional agent increases risk rather than capacity.

Co-intelligence is no longer a design preference. It is the minimum structure required for AI to operate safely within real care teams.

Nursing First: Empowering & Protecting Nurses



Nursing First is the journey to new care models, achieving consistent excellence in care delivery while supporting and building trust and resilience among the nation’s most prominent and most trusted professionals in healthcare -- Nurses. Earlier Nursing First articles describe the foundation on which AI and GenAI are helpful to achieving the Nursing First Mindset. First, Nursing First reinvents the care model to empower nurses to achieve better outcomes by leveraging virtual nursing, automation, and technology augmentation, as well as team-based staffing and provider consultations. Second, MyAction Hub is a capability that enables safety, coordination, and communication. Third, automation/augmentation continues to explore the use of AI and GenAI, particularly AI agents or digital humans responsible for aspects of nursing activities.

Nursing First’s foundational capabilities:

1

Nursing First Mindset:

Nursing First aims to support nurses in practicing at the top of their license through a nurse-led care delivery model redesign, which fundamentally and sustainably addresses the challenges faced across the nursing profession^{1,2,3,4} while embracing applicable technologies. This approach directly involves nurses in creating new ways of working, thereby empowering them to operate in a professionally safe and supportive environment, elevating the patient care experience, and driving the policy and behavioral changes needed for continuous improvement.

2

MyAction Hub: Safety, Effectiveness & Co-Intelligence:

Nursing First's MyAction Hub enables safety, coordination, and communication among the care team. Team care is at the heart of most care models. AI agents should utilize the information known across the care team's use of MyAction Hub to ensure safety and adequate care. Specifically, an AI agent should be able to escalate care to a care team member who is available and within the patient's proximity. At times, an AI agent may redirect responsibilities for a patient to a nurse in the care setting who is closer and more readily available. Moving forward, it will be essential to support co-intelligence and collaboration with the new care team members.

3

Understanding & Deconstructing:

At the core of Nursing First is empowering nurses through the recognition of the broad number of tasks that make up a routine day. Accenture has identified forty (40) activities that are common to nursing, with a particular focus on inpatient, acute nursing.

The goal of Nursing First is to break down each of the 40 identified nursing activities into tasks and subtasks. Then, reinvent workflows by using the four levers of virtual nursing — automation/AI/GenAI, team support, and remote consultations—to perform the task or subtask.

False Safety & Latent Risk

The most dangerous failure mode in healthcare AI is not incorrect answers—it is false safety. When AI appears responsive, empathetic, or confident without being connected to real staffing capacity or escalation pathways, patients believe they are being cared for when they are not. Nurses, in turn, inherit the downstream risk when those assumptions break.

Co-intelligence exists to prevent this failure mode. It ensures that AI never gives patients or care teams a sense of safety that the system cannot deliver.

Nursing First Co-Intelligence: *Designing Human-Governed AI for Real Care Teams*



Nursing First Co-Intelligence

The current race toward “agentic” and autonomous AI in healthcare assumes that greater intelligence, automation, and independence will naturally lead to better care. For nursing teams, the opposite is often true. Care delivery is not a linear workflow—it is a continuous process of assessment, interruption, escalation, coordination, and human judgment. When AI is introduced without respecting those realities, it fragments care, increases cognitive burden, and introduces new safety risks.

Co-intelligence offers a different path. Rather than asking what AI can do on its own, a Nursing-First approach asks how humans and AI can think, act, and recover together—while preserving human authority, physical presence, and accountability. In nursing care, trust is not built by autonomy. It is built through coordination.

1. The Problem with How AI is Framed in Healthcare Today

Much of today’s AI discourse assumes that intelligence equals independence. Many systems are designed to operate autonomously, generating recommendations or actions with limited regard for workflow, accountability, or recovery when things go wrong.

In healthcare, this assumption quickly breaks down. Care delivery is a sociotechnical system involving patients, clinicians, physical environments, policies, and real-time capacity constraints. Research and industry experience show that AI introduced without strong governance and coordination often increases cognitive load and introduces new failure modes rather than reducing them [4,5, 13, 14].

For nursing teams, the risk is especially acute. Assessments, escalations, and interventions must align with physical presence, shared responsibility, and clear handoffs. This requires a fundamentally different design approach.



2. What Co-Intelligence Means in a Nursing First Care Model

Co-intelligence is not autonomy. It is not delegation without oversight. And it is not AI acting independently of human judgment.

In a Nursing First care model, co-intelligence refers to a **shared cognitive system** in which:

- Humans retain authority and accountability
- AI agents perform bounded, well-defined functions
- Context is continuously shared across the care team
- Escalation pathways are explicit and enforced
- Intelligence supports coordination, not replacement

This distinction matters. Co-intelligence shifts the question from “*What can AI do on its own?*” to “*How do humans and AI think and act together safely?*”

Measures

- **Nurse Engagement Score:** % of nurses reporting increased empowerment or satisfaction (survey-based, pre/post implementation)
- **Practice at Top of License:** % of nursing time spent on clinical vs. administrative tasks (EHR time-motion analysis)
- **Retention Rate:** Annual nurse turnover rate compared to baseline
- **Incident Reports:** Number of safety or escalation incidents per 1,000 patient days
- **Team-Based Staffing Utilization:** % of shifts covered by team-based models vs. traditional staffing

Governance and Managing Change

To ensure that the Nursing First model delivers sustainable impact, robust governance and proactive change management must be embedded from the outset. Engaging nursing leadership and frontline staff in the redesign process not only builds trust but also establishes clear accountability for new workflows and technology adoption. Structured governance frameworks help maintain alignment with clinical standards, while changing management strategies—such as ongoing training, transparent communication, and feedback loops—support nurses as they transition to empowered, technology-augmented roles.

3. Why Healthcare—and Nursing in Particular—Requires a Different AI Model

Healthcare operates under constraints that most AI systems are not designed to handle:

- Emergencies are unpredictable
- Physical presence is sometimes mandatory
- Responsibility is distributed across roles
- Interruptions and handoffs are routine
- Partial information is common

Industry data shows that while most health systems are piloting generative AI, far fewer have addressed the operational and governance requirements needed to support safe deployment [5]. In nursing workflows, intelligence must be **situational**, **interruptible**, and **recoverable**.

Any AI interacting with patients must know not just *what* to do, but *when it cannot act alone*.

Measures

- **Escalation Response Time:** Median time from AI agent escalation to human intervention
- **Task Completion Visibility:** % of care plan tasks with explicit ownership and status updates
- **Missed Handoffs:** Number of missed or delayed handoffs per month
- **Coordination Events:** # of team coordination events (meetings, huddles) facilitated by MyAction Hub
- **Safety Event Rate:** Rate of adverse events or near misses flagged by the system

Governance and Managing Change

Effective governance is essential for MyAction Hub to function as a reliable backbone for team coordination and patient safety. By defining escalation protocols, ownership rules, and data stewardship policies, organizations can use MyAction Hub to ensure that AI supports safe, compliant, and transparent care delivery. Change management initiatives, including stakeholder engagement and iterative rollout, help teams adapt to new digital workflows and reinforce a culture of shared responsibility and continuous improvement.



4. Five Forms of Co-Intelligence in a Real Care Team

In practice, co-intelligence does not appear as a single feature or agent. It emerges through multiple, reinforcing forms of coordination between humans, AI agents, and systems.

Co-Intelligence Through Capacity Awareness. AI acts only when a human response is available, ensuring patient safety and preventing virtual tools from operating beyond real-world staffing and escalation capacity.

Co-Intelligence Through Shared Responsibility Surfaces. AI insights are paired with visible ownership so nurses can see what needs action, who is responsible, and what has already been addressed.

Co-Intelligence Through Human-Initiated Delegation. Nurses decide when and how to engage AI agents, preserving professional judgment and reducing the risk of automation bias.

Co-Intelligence Through Structured Team Interaction. AI supports interruption, oversight, and recovery by maintaining shared context and allowing teams to pause, resume, or stop work without losing continuity.

Co-Intelligence Through an Agentic Ecology. Intelligence emerges from a coordinated system of nurses and specialized agents, rather than relying on a single AI to carry cognitive or clinical risk.

Governance and Managing Change

Implementing co-intelligence across care teams requires deliberate governance structures that clarify roles, escalation pathways, and boundaries for AI agent actions. Change management is equally vital—leaders must guide teams through the transition, address concerns about automation, and foster collaboration between human and digital team members. Regular review cycles and feedback mechanisms ensure that co-intelligent systems remain aligned with clinical goals and adapt to evolving needs.

4.1 Co-Intelligence Through Capacity Awareness

AI should not act unless the system can respond.

In the Nursing First model, a patient-facing agent such as **Emma** will not conduct an assessment unless the system confirms that a physical nurse or staff member is available to respond if escalation is required. A phrase like “*Stop, I need help*” only has meaning if help can arrive.

This design anchors AI behavior in real-world capacity rather than abstract availability, aligning with high-reliability system principles that emphasize recovery paths and human presence [4].

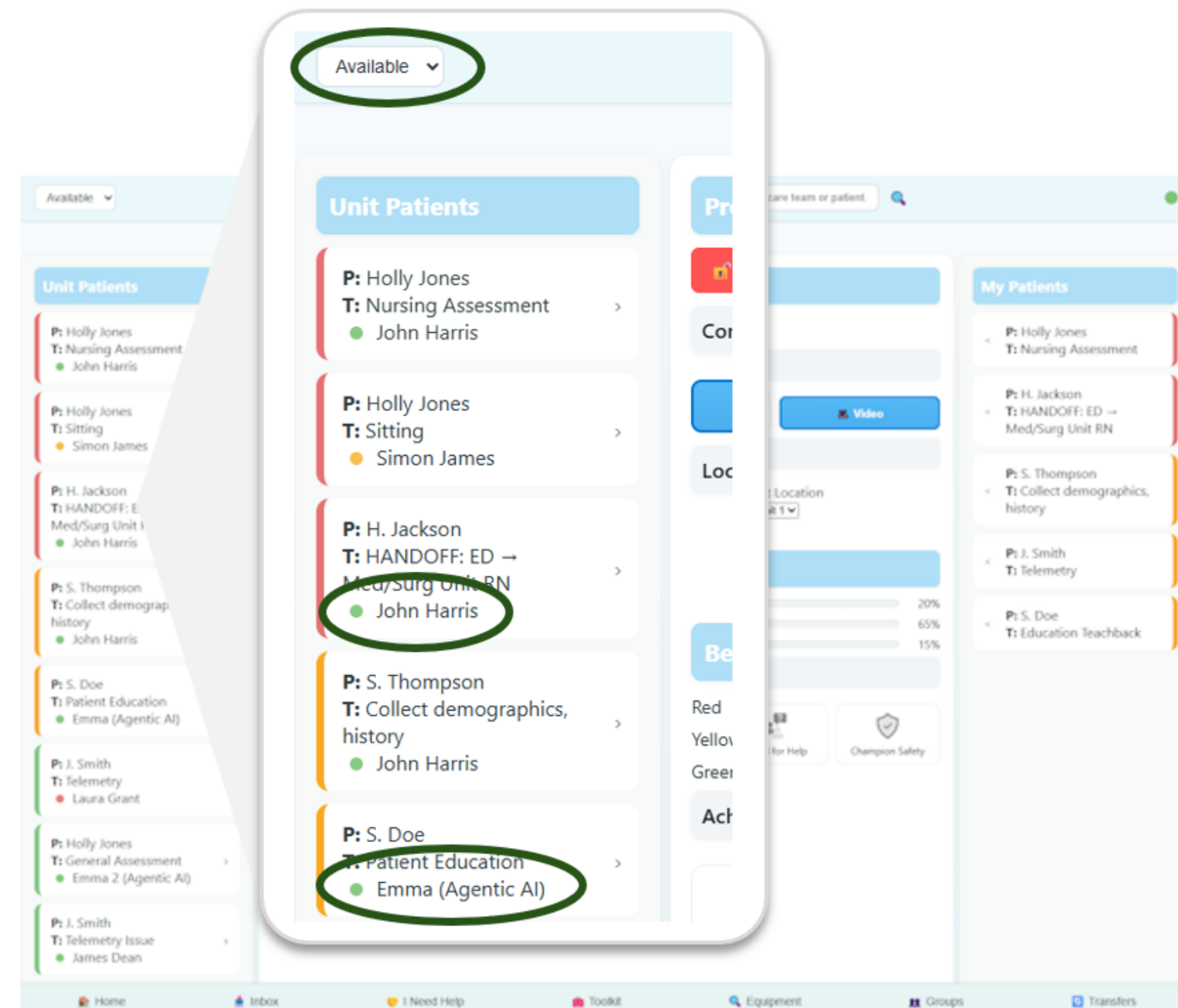
Vignette: Knowing Help Is Actually Available

When a patient starts an assessment with Emma, I know it’s safe because it won’t begin unless someone like me is physically available to respond. If a patient says, “Stop, I need help,” Emma stops immediately and escalates—and I’m already assigned and able to step in. That matters. Emma never gives patients a false sense of safety, and I don’t have to worry that a virtual tool is operating beyond what our staffing can support.

Measures

- **Assessment Start Compliance:** % of assessments initiated only when a physical nurse is available
- **Escalation Success Rate:** % of escalations successfully routed to available staff

“If I’m not physically available to respond, the assessment doesn’t start. That protects my patient—and it protects me.”



Co-Intelligence 4.1: MyAction Hub was driven by research emphasizing the need to be aware of the care team's status and availability. Agentic AI doubles down on this awareness to ensure agents are used safely, and the care team is ready to respond.

4.2 Co-Intelligence Through Shared Responsibility Surfaces

Insight without ownership does not improve outcomes.

The **Nursing First MyActionHub** provides a shared operational surface where:

- Care plan responsibilities are visible
- Ownership is explicit
- Status is continuously updated
- AI-generated insights are routed to accountable clinicians

Rather than delivering information in isolation, agents contribute to a system where responsibility is clear and coordinated across the care team [1].

Vignette: No More “Who’s Handling This?”

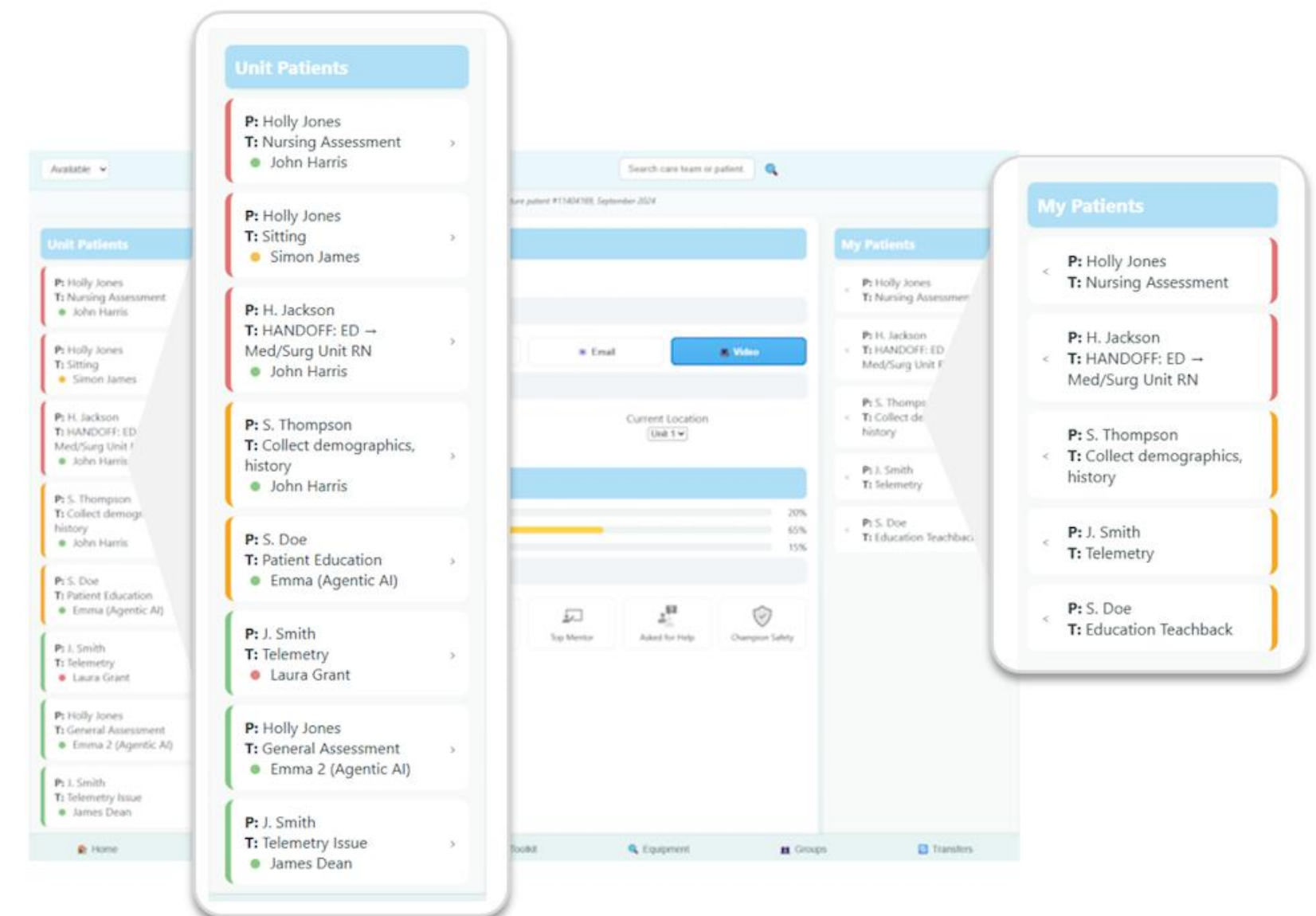
After Emma completes an assessment, I don’t have to dig through a report or wonder if anyone else saw the same flags I did. The results show up directly in MyAction Hub, with clear ownership. One follow-up is assigned to me, another to a virtual nurse.

That visibility matters. I can see what’s been addressed, what’s pending, and who is responsible. Nothing disappears into a note or an inbox. If something isn’t done, it’s obvious—and if it is done, I don’t duplicate work.

Measures

- **Ownership Clarity Index:** % of flagged items with clear, visible ownership
- **Duplicate Work Rate:** Incidence of duplicate interventions per patient episode

“I don’t have to wonder who’s handling what. If it’s flagged, it’s owned—and everyone can see it.”



Co-Intelligence 4.2: MyAction Hub shows the full range of activities underway in the care setting. This information sits in the hands of each member of the care team. On the left it shows all the activities underway by the care team. On the right are the specific responsibilities of a care team member.

4.3 Co-Intelligence Through Human-Initiated Delegation

In a co-intelligent system, agents are **invoked intentionally** rather than unleashed automatically.

Through MyActionHub, nurses choose when to engage:

- Emma for patient assessment and education
- Eddie for task support and personalization
- Otto for communication and coordination
- Seer for pattern recognition and next-step guidance

No agent auto-chains into another. Sequencing remains a human decision, preserving professional judgment and reducing automation bias [2].

Co-intelligence does not mean AI decides what happens next. It means humans decide *which intelligence to bring in*.

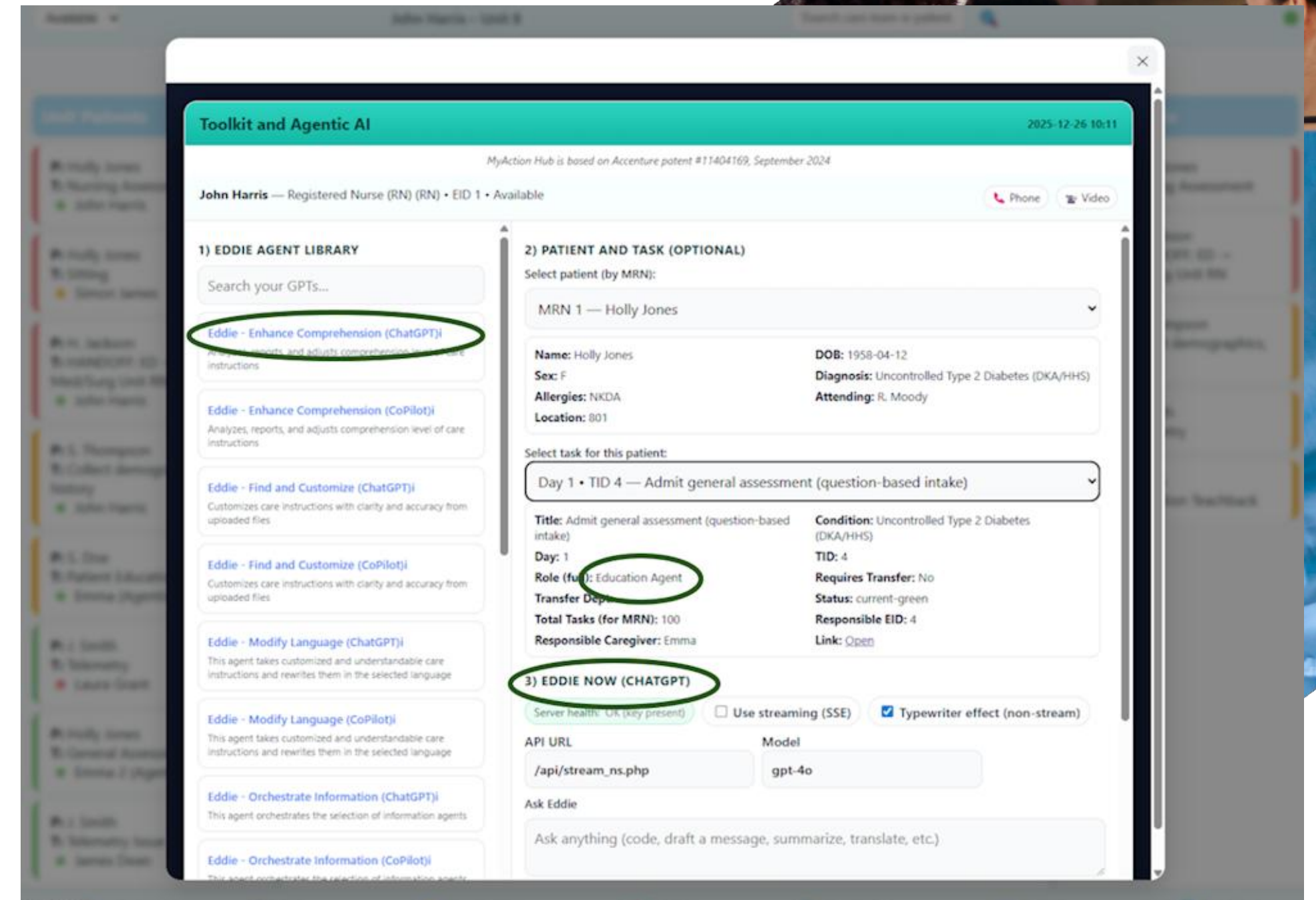
Vignette: Decide Which Agent to Use—and When

When I see that a patient is confused about their medications, the system doesn't make assumptions or act on its own. I decide what happens next—whether that's using Eddie for tailored education, Otto to notify the RN, or Seer to anticipate follow-up needs. The agents support me, but they don't override my judgment or sequence care for me, which keeps me in control and reduces automation bias.

Measures

- **Agent Invocation Rate:** % of agentic AI actions initiated by nurses vs. auto-triggered
- **Automation Bias Incidents:** # of incidents where automation bias is detected or reported

“The system doesn't decide what happens next. I do—and I choose which agent helps me.”



Co-Intelligence 4.3: Co-Intelligence still goes beyond the human-in-loop by ensuring that nurses with direct, physical responsibility for a patient's care can use and control how agentic AI capabilities enable care delivery. Care team members in a care setting have access to agentic AI and GenAI capabilities in their toolbox and ensure that a patient is the center of how these tools are used.

4.4 Co-Intelligence Through Structured Team Interaction

Insight without ownership does not improve outcomes.

The **Nursing First MyActionHub** provides a shared operational surface where:

- Care plan responsibilities are visible
- Ownership is explicit
- Status is continuously updated
- AI-generated insights are routed to accountable clinicians

Rather than delivering information in isolation, agents contribute to a system where responsibility is clear and coordinated across the care team [1].

Vignette: Interrupting Without Losing Context

When I see that a patient is confused about their medications, the system doesn't make assumptions or act on its own. I decide what happens next—whether that's using Eddie for tailored education, Otto to notify the RN, or Seer to anticipate follow-up needs. The agents support me, but they don't override my judgment or sequence care for me, which keeps me in control and reduces automation bias.

Measures

- **Interruption Recovery Rate:** % of interrupted assessments resumed without loss of context
- **Team Interaction Frequency:** # of structured team interactions per shift

“Stopping an assessment isn’t failure. It’s reality—and the system doesn’t punish me for it.”

The screenshot displays the MyAction Hub interface. On the left, a 'Participant Controls' panel lists John Harris (RN) and Emma (Agentic AI), both with 'Start Camera' and 'Stop' buttons. The main area shows patient information for Holly Jones (MRN 1, Location 801) and task details for 'Admit general assessment (question-based intake)'. A chat window on the right, titled 'Emma - Co-Intelligence for Initial Assessments', shows a message from Gregory L. Smith about using GPT-5 Thinking. Below this, a 'MODE: NURSE OVERSIGHT' section indicates a mode change to 'NURSE MODE: EMMA-CARE-TEAM'. At the bottom of the chat, there are buttons for 'RESUME ASSESSMENT', 'RESTART ASSESSMENT', and 'STOP ASSESSMENT'.

Co-Intelligence 4.4: MyAction Hub lets the care team, including agentic AI, “meet” to discuss and change the course of care delivery to a patient. For example, the nurse responsible for Holly’s care can meet Emma during an assessment and adjust the assessment based on Holly’s needs.

4.5 Co-Intelligence Through an Agent Ecology

There is no single “AI” in a Nursing First system.
Instead, intelligence emerges from an **ecology of roles**:

- Registered Nurses
- Virtual nurses
- Emma (assessment)
- Eddie (support)
- Otto (coordination)
- Seer (anticipation and subsequent actions)

Each performs a distinct cognitive function. Together, the ecology of roles forms a distributed cognitive system that is more resilient and trustworthy than any standalone agent [2,6,7,8,9,10,11,15,16,17].

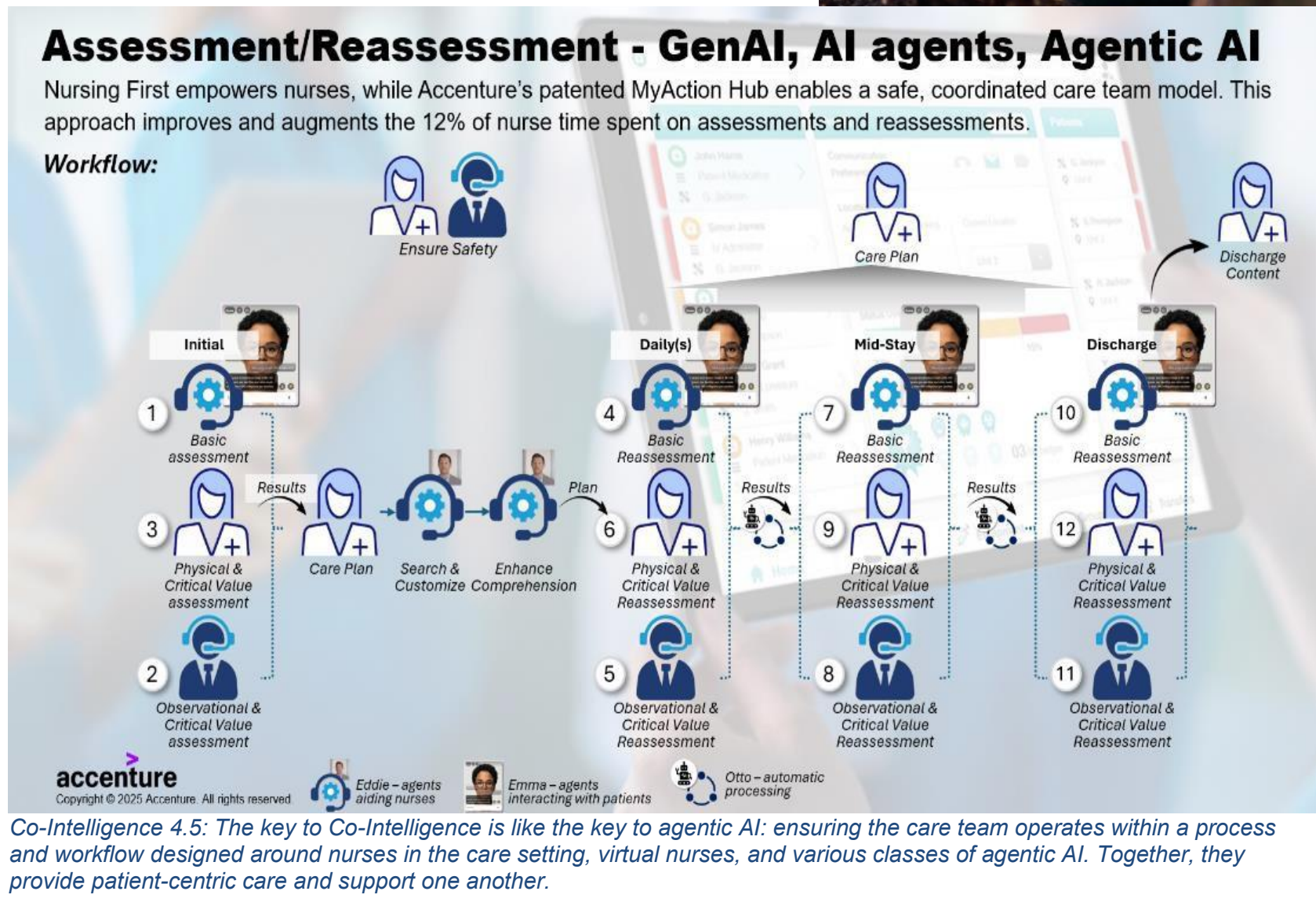
Vignette: No One Agent Carries the Risk Alone

In my day-to-day work, care comes from a team, not from a single system. Each agent supports a different part of the work, while I stay accountable for what happens next. If one agent isn’t available or something doesn’t fit, the system degrades gracefully—and patient care keeps moving.

Measures

- **Role Distribution:** % of cognitive tasks performed by nurses, virtual nurses, and each agent class (Emma, Eddie, Otto, Seer)
- **System Degradation Events:** # of times the system gracefully degrades without impacting patient care

“No single agent carries the risk. The team does—and I stay accountable without being overloaded.”



Co-Intelligence 4.5: The key to Co-Intelligence is like the key to agentic AI: ensuring the care team operates within a process and workflow designed around nurses in the care setting, virtual nurses, and various classes of agentic AI. Together, they provide patient-centric care and support one another.

5. What This Changes About How We Design AI in Healthcare

Designing for co-intelligence changes priorities:

- Coordination over autonomy
- Recoverability over forced completion
- Role clarity over clever prompts
- Human-governed escalation over AI confidence
- Partial results over artificial completeness

These principles align with emerging evidence that AI's most significant value in healthcare lies in augmenting workforce capacity and coordination—not replacing clinical judgment [4,5].

Measures

- **Coordination Over Autonomy:** Ratio of coordinated actions vs. autonomous AI actions
- **Recoverability:** % of incomplete or interrupted tasks successfully recovered
- **Role Clarity:** % of users reporting a clear understanding of their role in AI-enabled workflows
- **Escalation Path Compliance:** % of escalations following defined human-governed paths
- **Partial Result Utilization:** % of cases where partial results are used for decision-making

Governance and Managing Change

Governance and change management are foundational to designing AI systems that truly augment nursing practice. By establishing clear policies for coordination, recoverability, and escalation, organizations safeguard against unintended consequences and maintain human authority. Change management efforts—such as pilot programs, education, and transparent evaluation—enable teams to embrace new technologies confidently, ensuring that AI adoption enhances rather than disrupts care delivery.

Closing: Co-Intelligence is a Design Choice

Co-intelligence is not something added after deployment. It is a design choice made at the beginning—when defining roles, escalation paths, and how humans and AI share context.

In nursing care, this choice is the difference between tools that assist and systems that can be trusted.

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