From Reaction to Prevention: Redefining Falls in Care

How Technology and Thought Leadership Are Transforming Fall Prevention in Care Homes

arquella

Capturing moments of care

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The Hidden Crisis — Falls in Adult Social Care

In the busy corridors of care homes across the UK, one of the most persistent and underestimated threats to resident wellbeing continues to play out every single day: falls. Though often accepted as an unfortunate consequence of aging, the reality is far more urgent—and preventable.

Falls are not just a clinical statistic or a tick box in regulatory compliance; they are moments of real human impact. Behind every fall is a resident who may suffer bruising, a fracture, or worse. And alongside them, a care team navigating emotional stress, documentation demands, and the complex reality of balancing reactive care with the aspiration for something better.

The Scale of the Problem

Let's begin with the numbers. According to data from the NHS and the Care Quality Commission (CQC):

- Between 50% to 75% of care home residents experience at least one fall each year.
- Older adults in care homes are three times more likely to fall than those living independently.
- Falls are responsible for 40% of all injury-related deaths among people aged 65 and over in the UK.
- The NHS spends approximately £2.3 billion annually on falls and fall-related injuries.
- Each care home resident falls on average three times per year, creating recurring cycles of anxiety and risk.

Now imagine a typical 60-bed care home. That's potentially 180 fall incidents every year—each one requiring assessment, intervention, possible hospitalisation, and a conversation with family.

This isn't a minor operational issue. This is a full-scale clinical and human crisis.

The Human Cost

Falls affect far more than bones and balance. Many residents develop a lasting fear of falling—a condition that leads to reduced mobility, withdrawal from social interaction, and a dangerous decline in physical and emotional health. Confidence is eroded. Autonomy fades. What begins as a single fall can evolve into a cascade of complications that undermine a resident's dignity and quality of life.

And the toll on staff is just as real. Care workers must respond quickly and compassionately, often under conditions of limited time and high emotional load. A single fall may occupy 1 to 2 hours of staff time between response, documentation, monitoring, and family communication. Multiply that by dozens of incidents annually, and it becomes clear how deeply falls divert energy away from proactive, relationship-based care.

Regulatory Pressure

The CQC has made it clear: falls are a critical indicator of safety in care. During inspections, providers are evaluated on their ability to prevent, record, and learn from fall incidents. Failure to address fall risk can impact ratings, regulatory outcomes, and the public reputation of a care provider.

But it's not just about passing inspections. Preventing falls is an ethical imperative. When we fail to prevent preventable harm, we fall short of the care mission itself.

A Culture of Resignation

Despite all this, many care environments still operate under a veil of resignation. Falls are seen as inevitable—a symptom of frailty, a fact of institutional life. Devices like pendants and alarms are installed, and staff are trained to respond quickly. But the assumption remains: the fall will happen. We'll just try to be there when it does.

This mindset, though deeply embedded, is no longer tenable. Not with the knowledge we now have. Not with the technology now available. And not with the expectations of families, regulators, and, most importantly, the residents themselves.

The time has come to challenge the norm.

Reframing the Conversation

At Arquella, we believe that fall prevention is not a dream—it's a deliverable. What we are talking about is not just a sound bite, but fall prevention in it's truest form. We can, and must, rethink how we address fall risk. We must shift from a reactive culture to a proactive strategy. This starts with recognising that:

- **Falls are not just unfortunate—they are largely predictable.**
- **Injuries are not just treatable—they are often preventable.**
- **Technology is not just for alerting—it can foresee, warn and prevent.**

When we begin to see falls not as a normal consequence of aging but as a clinical and operational failure that we can address, everything changes.

What This e-Book Will Explore

In the chapters that follow, we will unpack how care providers can:

- **Transition from reactive to predictive care.**
- **Leverage cutting-edge AI technology without compromising dignity.**
- **Empower care staff through real-time data and intelligent alerting.**
- **Redefine falls as a preventable phenomenon, not a statistical inevitability.**

Because when fall prevention is done right, detection becomes the backup—not the plan.

02

Why the Old Model Isn't Working

For decades, the care sector has tackled falls with a patchwork of well-intentioned interventions: wearable alarms, pressure mats, bedrails, post-incident documentation. Each has played its part. But together, these methods form a framework built on reaction, not prevention. The uncomfortable truth? The traditional approach is not keeping residents safe enough—and it is leaving care teams overburdened and unsupported.

A Legacy of Reaction

In most care homes today, the fall response begins after the fall has already occurred. This is the essence of a reactive model. Whether it's a resident pulling a call cord or a pressure mat triggering an alert, staff are trained to respond rapidly, assess injuries, notify families, and file incident reports. The tools may vary, but the pattern is always the same: the harm has happened—now what?

This is not to say these systems are unhelpful. Far from it. In many cases, a timely response can make the difference between a bruise and a hospital admission. But response is not prevention. And relying solely on reaction means accepting that falls will continue to happen.

Detection Is Not Enough

Let's be clear: detection systems are not prevention systems.
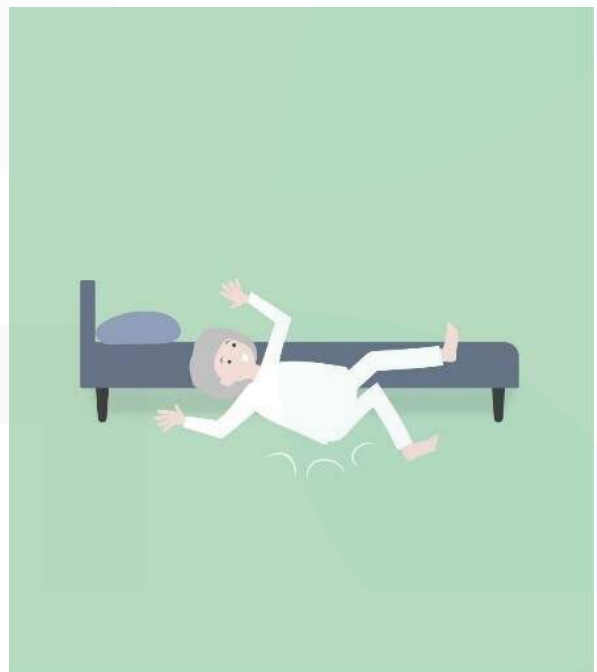
Fall detection tools are designed to notice when a resident is already on the floor. Often, this relies on wearable pendants, floor sensors, or even surveillance cameras. But all these systems have critical limitations:

- Residents don't always wear pendants or may forget them.
- Fall mats only activate after impact has occurred.
- Cameras introduce privacy and consent concerns, and constant monitoring is impractical.
- Most systems rely on the resident taking action—such as pressing a button—which many cannot do post-fall due to disorientation or injury.

Meanwhile, staff must constantly monitor systems, triage alerts, and cross-reference multiple sources of information. In short, these tools tell us something bad has happened—but not before it's too late.

The Hidden Cost to Care Staff

Responding to falls places a significant burden on carers and nurses. Each incident triggers a chain of actions:

- Checking and comforting the resident.
- Assessing injuries and escalating medical support if required.
- Completing incident forms and updating care plans.
- Communicating with families, management, and possibly regulators.

This is not just time-consuming—it is emotionally draining. Staff are often left feeling that they are reacting to crises rather than providing the kind of preventative, person-centred care they trained for.

And this problem compounds. Each fall reduces staff confidence. Each emergency further stretches thinly resourced teams. Every hour spent responding is an hour not spent preventing. It becomes a vicious cycle.

Regulatory Pressure Without the Right Tools

In recent years, the Care Quality Commission (CQC) has rightly tightened its focus on fall management. Inspectors now scrutinise:

- **Fall incident logs.**
- **The frequency and severity of events.**
- **Evidence that learning has been embedded into care planning.**
- **Proactive strategies used to reduce recurrence.**

But while expectations have risen, many care homes are still reliant on outdated tools. This creates a frustrating mismatch: high regulatory demands, but low confidence in the systems designed to meet them.

To meet modern expectations—clinical, ethical, and operational—a new model is needed.

False Sense of Security

Traditional systems can also give rise to a false sense of control. Devices are installed, policies written, and boxes ticked. But if the core assumption is still, "falls will happen—we just need to act fast," then the opportunity for meaningful change has been missed.

For example:

- Bedrails may appear to offer safety, but in reality, they can increase injury severity if a resident tries to climb over them.
- Alarms may ring, but without context, staff may misprioritise or respond too late.
- Care plans may list fall risk, but without real-time data, staff are left guessing.

This reactive posture not only fails to prevent harm but may also undermine residents' autonomy and dignity, core values at the heart of adult social care.

The Limitations of Static Risk Assessments

Another major flaw in the current model is the over-reliance on static fall risk assessments. These evaluations are typically completed at scheduled intervals—weekly, monthly, or after an incident.

But residents are not static. Their health status, medication effects, mood, hydration, and cognitive clarity all fluctuate, sometimes within hours. Traditional assessments cannot capture these real-time changes. As a result, they are often outdated the moment they are completed.

In practice, this means a resident may be marked "low risk" on paper but may be at high risk due to fatigue, urinary urgency, or confusion in the moment. The tools simply aren't responsive enough.

The Emotional and Cultural Cost

Perhaps the most profound cost of the old model is cultural. It fosters a sense of resignation—a belief that falls are a fact of life in care homes. "We're doing our best," becomes the refrain. And indeed, most teams are doing their best with the tools they've been given.

But what if we gave them better tools? What if we gave them data-driven insights, predictive alerts, and the power to intervene before a resident is at risk?

The care sector does not lack compassion. It does not lack commitment. What it has lacked—until recently—is the technology to match its values.

Setting the Stage for Prevention

This book is not about assigning blame to past methods. It is about charting a new course. One where detection is still present—but as a safety net, not the frontline strategy. One where technology works alongside carers, not above them. One where every resident has the chance to live with confidence, not in quiet fear.

03

Shifting the Mindset — From Response to Prevention

Every innovation begins with a mindset shift. Before we change systems or invest in new tools, we must first change how we think about the problem. And when it comes to falls in care, this shift is long overdue.

For years, the default stance has been: "Falls are inevitable—we just need to be ready when they happen." But what if we replaced that fatalism with a new belief? One grounded in evidence and ethics: "Most falls are preventable—and it's our duty to stop them before they occur."

That is the heart of the paradigm shift from response to prevention.

Rethinking the Analogy: Smoke Alarms vs Fire Safety

To understand the power of prevention, consider a familiar example: fire safety.

We install smoke alarms in our homes. These alarms are essential. But they don't stop fires, they signal that one has already started. Real safety comes from prevention: removing hazards, installing sprinklers to prevent the spread, checking wiring, keeping exits clear.

It's the same with falls. Pendants and pressure mats are the smoke alarms; they tell us a fall has occurred. But prevention asks, why did the fall happen in the first place, and how can we stop the next one?

The Cost of Inaction

Let's speak plainly about the cost of maintaining the status quo.

Each serious fall may carry a financial burden upwards of £60,000 when you factor in medical treatment, hospitalisation, rehabilitation, increased care needs, and longer-term loss of independence. Multiply that by dozens of incidents a year, and the impact on care home budgets, insurance premiums, the NHS budgets and regulatory scrutiny becomes stark.

But beyond finances, the human cost is incalculable. Consider:

- A resident who falls, breaks a hip, and loses their mobility permanently.
- A resident who, after one incident, becomes too frightened to leave their bed.
- A resident whose final months are defined not by dignity, but by decline triggered by a preventable fall.

The ripple effect touches families, staff morale, inspection outcomes, and long-term operational resilience

Reframing Falls as Predictable

Here is the fundamental insight that drives this shift: falls are not random.

In most cases, they follow identifiable patterns:

- **A resident attempts to stand unaided.**
- **They become disoriented at night and head to the bathroom.**
- **There's a change in medication that affects balance.**
- **Staff are delayed by another emergency and don't reach the room in time.**

What if we could detect those patterns in real time? What if we could predict which residents were most at risk today, not just based on a monthly checklist?

This is not science fiction. This is what today's intelligent systems, such as the Arquella integration with cogvisAI, can already deliver.

Prevention Preserves Dignity

There's another reason this shift matters deeply: resident dignity.

In the old model, many so-called "preventative" measures—such as physical bed rails or movement restrictions—can inadvertently harm dignity and autonomy. Residents are treated as liabilities, not individuals. And often, these physical restraints don't even prevent falls; they simply shift where or how they happen.

A prevention-first mindset seeks a more respectful solution. One that monitors discreetly, alerts proactively, and only intervenes when truly needed.

One that preserves:

- **Mobility—residents move about their environment safely.**
- **Independence—staff support, rather than restrain, decisions.**
- **Confidence—residents live without fear of falling.**

What Prevention Looks Like

Prevention is not the absence of falls. It is the presence of systems that make falls far less likely.

A prevention-led approach includes:

- Early detection of risk behaviours, such as frequent bed exits at night.
- Graduated alerts that signal not just when a resident is on the floor, but when they're beginning to move in ways that precede a fall.
- Integration with existing care plans, nurse call systems, and staff workflows.
- Learning loops where incident data improves the system's intelligence over time.

Importantly, it includes individualised care. A resident who is mobile and cognitively sound may not require the same monitoring intensity as someone with dementia or post-operative confusion. Prevention must be adaptive, not prescriptive.

Supporting the Workforce

This shift is not just for the benefit of residents—it's also for staff. A care team operating under constant crisis-response mode is stretched, stressed, and, ultimately, unsustainable. When prevention becomes the default:

- Staff can prioritise interventions, not just react to alarms.
- Time is reclaimed for meaningful engagement and relationship-centred care.
- Emotional wellbeing improves—staff feel they are truly making a difference, not constantly firefighting.

In a sector where recruitment and retention are critical challenges, a safer, calmer working environment is a powerful asset.

Aligning with Modern Care Expectations

Today's families expect more. Regulators expect more. Most importantly, residents deserve more. Preventative care aligns with the principles of modern adult social care:

- **Person-centred.**
- **Data-informed.**
- **Dignity-led.**
- **Technologically empowered.**

It's no longer enough to say, "we'll do our best when something happens." The new standard is: "we'll do everything possible to ensure it doesn't happen in the first place."

The Mindset Shift Begins with Leadership

To make this transition, leaders, care home owners, managers, and senior clinicians must champion prevention. That means:

- Investing in preventative technologies.
- Training staff in new ways of thinking.
- Measuring success by reductions in incidents, not just speed of response.
- Embedding prevention into culture, not just paperwork.

When leadership models this mindset, the whole organisation follows. And residents, at the centre of it all, experience safer, freer, more confident lives.

cogvisAI — Technology Designed for Prevention

Real change in the care sector doesn't come from ideology alone—it comes from innovation that works in the real world. And when it comes to fall prevention, cogvisAI represents a genuine leap forward.

Developed with years of research, practical implementation, and a deep understanding of care environments, cogvisAI is more than a tool—it's a new philosophy of safety made visible through technology.

Let's unpack what cogvisAI is, how it works, and why it's uniquely suited to meet the care sector's most urgent need: proactive, respectful, and effective fall prevention.

What Is cogvisAI?

At its core, cogvisAI is an intelligent, modular monitoring system that uses 3D infrared sensors and machine learning algorithms to detect falls, provide falls analysis and detect, assess, and alert staff to movement patterns that precede a fall.

But it does so without cameras, without intruding on dignity, and without requiring any action from the resident.

Think of it as a silent observer—always present, never invasive. It doesn't record video or audio. Instead, it creates an anonymous 3D "depth map" of a resident's environment using an invisible infrared dot matrix.

This allows it to detect spatial movement and behaviour without capturing a resident's identity or features.

That makes cogvisAI one of the most privacy-compliant technologies available, with real-time processing done on the device itself, ensuring data never leaves the room unless absolutely necessary.
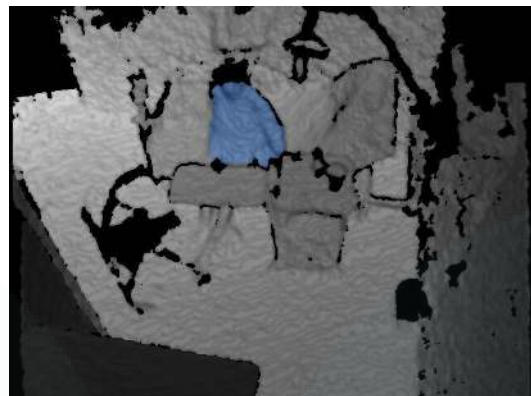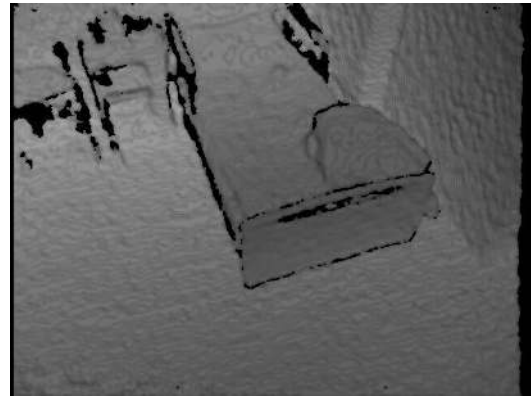
A System Built for Prevention, Not Surveillance

Unlike traditional monitoring systems, cogvisAI doesn't wait for a fall to occur before acting. Its strength lies in early detection—identifying movement patterns that suggest a resident is at risk before the incident happens.

This includes:

- When a resident raises their upper body from a lying position (raise-up).
- When they sit on the edge of the bed (sit-up).
- When they attempt to stand or begin to walk (get-up).

Each of these stages represents a progressively higher risk. The system issues graduated alerts based on the urgency of the movement, allowing staff to intervene before a fall can occur.

This tiered approach doesn't just improve outcomes—it reduces alarm fatigue, enabling carers to respond based on true priority.

Reliable Detection as a Safety Net

While cogvisAI leads with fall prevention, it also includes one of the most effective fall detection capabilities on the market.

In cases where a fall does occur, the system automatically recognises and classifies the event without requiring any action from the resident—no button press, no wearable device.

This real-time detection works day and night, with exceptional accuracy and minimal false alarms.

In addition, cogvisAI offers absence detection, identifying when a resident leaves their bed or room and does not return within an expected timeframe. This supports quick intervention, especially for residents prone to wandering or confusion.

Together, these detection modules form a critical backup layer—ensuring that even when prevention isn't possible, no fall goes unseen.

Designed for Privacy, Dignity, and Respect

In care environments, especially where residents live with dementia or cognitive impairment, maintaining dignity is paramount.
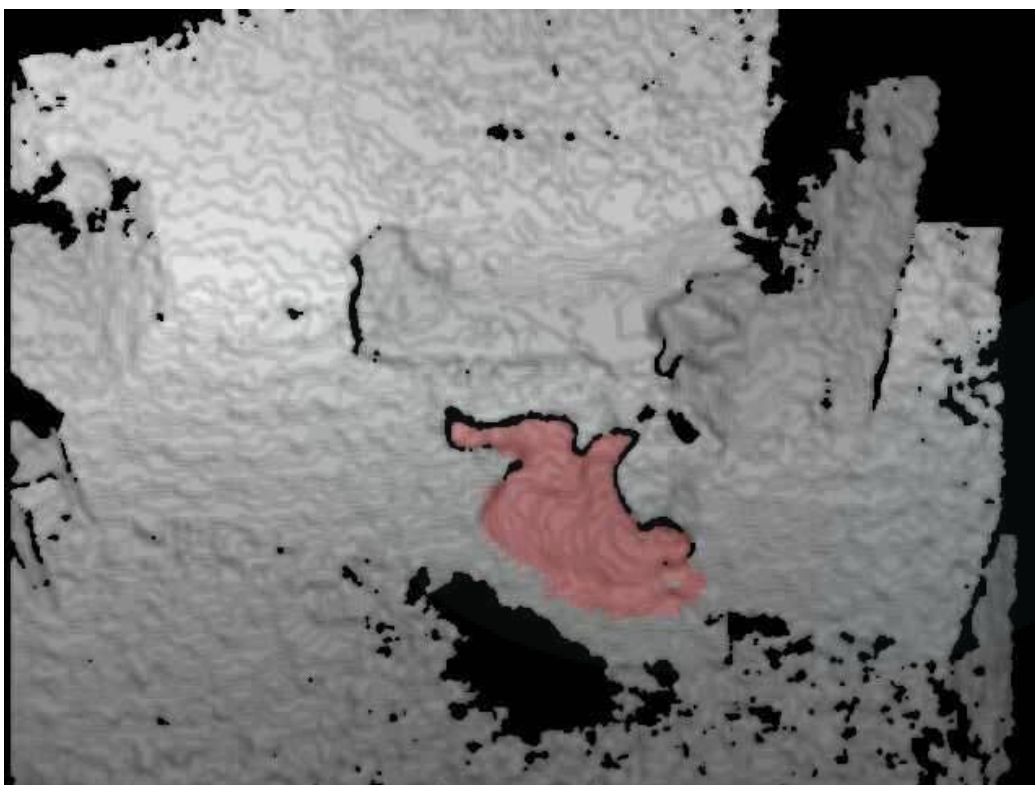
cogvisAI is built from the ground up to support this principle:

- No cameras mean residents are never exposed visually.
- No microphones ensure conversations and personal moments remain private.
- Edge processing keeps data securely within the resident's room.
- GDPR-compliant by design, meeting the highest standards of data protection.

Where other systems intrude, cogvisAI integrates quietly, safely, and respectfully.

The Virtual Bed Rail: Rethinking Safety Boundaries

One of cogvisAI's most powerful features is the virtual bed rail—a configurable, invisible boundary that surrounds a resident's bed.

Unlike physical bed rails, which can:

- **Restrict movement,**
- **Create distress,**
- **Increase injury severity if climbed over,**

… the virtual rail provides a silent zone of awareness. When crossed, the system immediately alerts staff—without touching the resident or limiting their freedom.

This innovation reflects a deep understanding of modern care:

- Safety must not come at the cost of autonomy.
- Monitoring must be intelligent, not rigid.
- Alerts must be contextual, not reactive.

The bed rail can be scheduled to activate only at night or tailored for residents with higher risk profiles. It can be turned off entirely for residents who no longer need monitoring—preserving independence where possible.

Powered by Real Intelligence

Unlike rule-based systems, cogvisAI uses true artificial intelligence—trained over ten years using real-world fall data across thousands of cases. This means it doesn't just recognise fixed events.

It understands:

- A resident's normal movement patterns.
- Unusual shifts in behaviour or mobility.
- Environmental changes that may increase risk.

It also provides powerful insights for care planning—identifying emerging risk even before it becomes critical.

Integration with Arquella Systems

A standout feature of cogvisAI is its seamless integration with the Arquella Call system. When an alert is triggered—be it from the virtual rail or mobilisation stages—it is sent directly to the nurse call interface and pushed to staff mobile devices.

This integration includes:

- Resident identity,
- Nature of the alert (e.g. "get-up detected"),
- Priority level,
- Room location.

The result? Instant context, smarter response, better outcomes.

No switching between systems. No delay in communication. Just a unified platform that brings detection, alerting, and care coordination together.

The Power of Docking Stations: Flexible, Scalable Safety

A unique strength of cogvisAI is its docking station system, which allows sensors to be easily moved between rooms without the need for tools, technicians, or complex setup.

Docking stations provide:

- Full mobility: Sensors can be relocated quickly as resident needs change.
- Simple setup: Installation is plug-and-play—no ladders, no rewiring.
- Automatic recalibration: Sensors adjust automatically after docking.
- Cost efficiency: Care homes can scale usage without over-investing in fixed units.

With the docking system cogvisAI provides, care providers gain maximum flexibility and responsiveness, making cogvisAI ideal for environments where care needs shift regularly—such as respite care, palliative services, or large sites with shared sensors.

As Claudia Götz, MSc, from SeneCura Pressbaum noted:

"We have 45 sensors in use and are free to move the smart care solution thanks to the docking stations in all 128 of our residents' rooms."

Measurable Impact

In real-life care settings, cogvisAI has delivered impressive results:

- 60% reduction of hospital admissions due to fall analysis
- 72% reduction in falls where properly implemented.
- 99.5% accuracy in identifying falls means cogvisAI almost never misses a fall.
- Thousands of fall prevention alerts triggered before harm occurred.

These aren't speculative claims—they are under real world conditions backed by audits and care home reports from across Europe and the UK.

And the benefits extend beyond safety:

- Fewer emergency hospital admissions.
- Lower care costs per resident.
- Higher staff satisfaction and retention.

A New Standard for Modern Care

cogvisAI isn't just a technology—it's a manifestation of the new standard in adult social care:

- **Compassionate.**
- **Intelligent.**
- **Human-centred.**

It empowers care teams to be proactive, not reactive. It allows residents to live with freedom and confidence, not fear and constraint. And it brings a level of precision, respect, and efficiency that aligns with the evolving expectations of regulators, families, and professionals.

As we'll explore next, this technology is only the beginning.

Understanding the Fall Prevention Modules

Predicting Before Protecting

In traditional care environments, most interventions begin only after a fall has occurred. But cogvisAI's Fall Prevention Module flips that approach on its head. It is designed to:

- Predict risk, not just detect incidents.
- Warn staff before a resident is fully mobilised.
- Adapt to each individual's movement patterns and habits.

At the heart of cogvisAI's power lies its modular architecture—designed not only to detect when something has gone wrong, but to give care teams the opportunity to act before it does.

Using a contactless 3D smart sensor, cogvisAI continuously monitors a resident's environment—not for the sake of surveillance, but for the sole purpose of early identification of risk movements.

This chapter focuses on the Fall Prevention Module: how it works, how it thinks, and why it represents one of the most significant advancements in care technology today.

What it's watching for is one of three specific urgency.

Stage 1:

Raise-Up Detection

This is the earliest and often most overlooked moment.

Raise-up detection identifies when a resident begins to lift their upper body—transitioning from lying flat to a partially upright posture. While this may seem minor, it's a critical early signal that a resident is becoming active, often before they are fully awake or orientated.
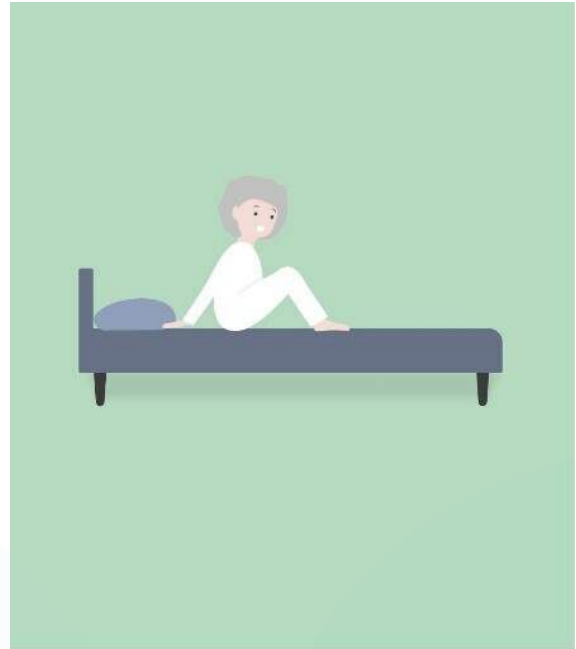
This is especially relevant for:

- Residents with dementia who may wander at night.
- Post-operative patients at risk of disorientation.
- Those with balance or vision impairments.

An alert at this stage gives staff time to prepare, possibly reaching the resident before they sit up or stand.
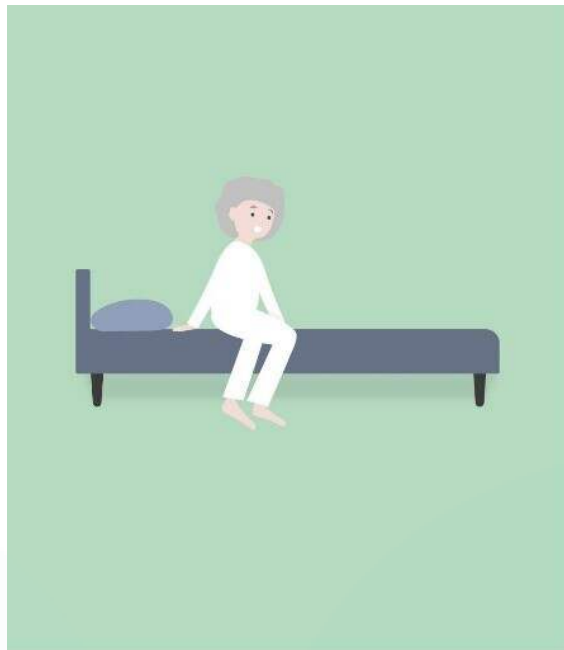
Stage 2:

Sit-Up Detection

The next phase occurs when a resident moves to a seated position on the edge of the bed.

At this point, the risk of falling increases significantly—especially for those with:

- Low blood pressure (risk of dizziness),
- Muscle weakness,
- Reduced coordination due to medication side effects.

The system escalates its alert accordingly, indicating a higher-risk situation. With this information, staff can prioritise which residents may need immediate support—rather than relying on guesswork or round-robin checks.

Stage 3:

Get-Up Detection

This is the critical moment—when the resident attempts to stand.

For residents with high fall risk, this is the most vulnerable phase. If unassisted, a misstep here could lead directly to a fall.

When get-up detection is triggered:

- The system sends an urgent alert to staff devices.
- The alert includes the resident's name, location, and risk level.
- Staff are empowered to intervene before the resident begins to walk unaided.

This not only prevents injury but also preserves the resident's confidence. A near miss is still a success—because the fall never happened.
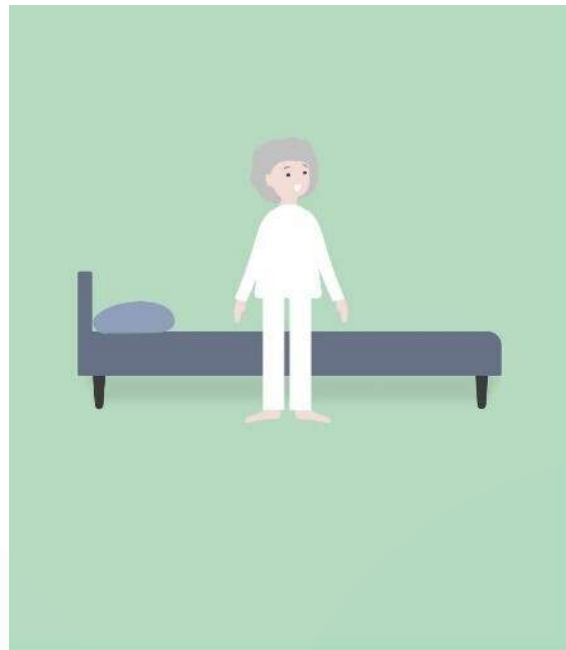
Customising the System for Individual Needs

One of cogvisAI's great strengths is personalisation. Not every resident needs the same level of monitoring. Not every bed needs a virtual rail. And not every alert needs to trigger at the same intensity.

Care teams can configure:

- **Which stages are active,**
- **What times they operate (e.g. only overnight),**
- **Alert sensitivity (based on resident condition),**
- **Alert routing (which staff member or device is notified).**

This avoids unnecessary monitoring and ensures that technology adapts to people—not the other way around.

It also supports a core goal of modern care: preserving independence where possible. For mobile residents, alerts can be silenced or staged. For high-risk residents, 24/7 prevention can be enabled without physical restraint.

The Virtual Bed Rail: Rethinking Boundaries

Traditional bed rails are contentious in the care sector. While they aim to prevent injury, they often:

- Restrict freedom of movement,
- Increase the risk of serious injury if climbed over,
- Cause emotional distress in residents who feel "trapped."

cogvisAI replaces this with a non-physical, virtual bed rail:

- A customisable invisible boundary surrounds the bed.
- When the boundary is crossed, an alert is triggered.
- No restraints, no discomfort, no risk of entrapment.
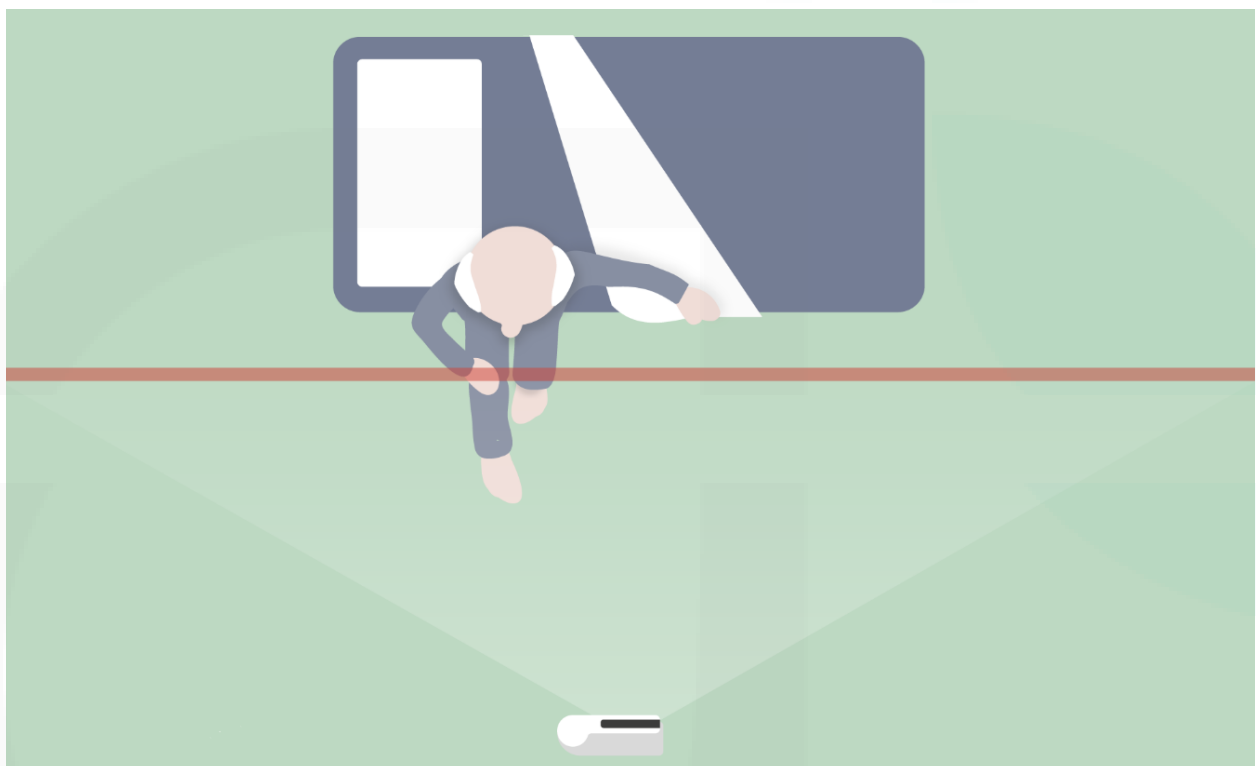
This is maximum security without physical restriction. And just like the mobilisation stages, it can be:

- Calibrated by time (e.g. active only between 10pm–6am),
- Adjusted to the individual's habits,
- Disabled entirely if not needed.

This subtle but powerful feature enhances safety while maintaining a resident's dignity and autonomy.

Preventing False Alarms and Alert Fatigue

In any system of continuous monitoring, the challenge of false alarms looms large. If staff are bombarded with constant, non-urgent alerts, they may begin to tune out real emergencies.

cogvisAI counters this with:

- **Graduated alert levels (informational, moderate, urgent),**
- **Pattern recognition that learns resident routines,**
- **Continuous optimisation, filtering out normal activity from genuine risk.**

Over time, the system becomes better at distinguishing between:

- **A restless sleeper versus someone trying to get up,**
- **Safe mobilisation versus risky unassisted standing,**
- **Repetitive movement versus potential confusion or distress.**

This precision reduces alarm fatigue—a critical factor in keeping staff engaged, responsive, and supported.

Empowering Proactive Care

In essence, the Fall Prevention Module does more than send alerts. It:

- **Buys time—so carers can act before injury occurs.**
- **Provides context—so decisions are informed.**
- **Reduces risk—so residents can live more confidently.**
- **Eases stress—so care teams can work more effectively.**

When implemented well, it changes the daily rhythm of a care home:

- **From rushing in response, to planning with foresight.**
- **From incidents and reports, to moments of timely intervention.**
- **From fear of what might happen, to confidence in what can be prevented.**

cogvisAI expands beyond falls—providing safety not just through motion tracking, but through a whole-system approach that also supports dementia care, wandering, absence detection, and more.

06

From Sensors to Safety — The Full Ecosystem

In fall prevention, context is everything. A system that detects a resident's movement is useful—but a system that understands, responds, and adapts to that movement within a wider care ecosystem is transformative.

cogvisAI is not just a sensor. It's part of a fully integrated safety framework that empowers care teams to deliver preventative, person-centred support with efficiency and insight. In this chapter, we explore how cogvisAI fits within a broader digital care environment, turning isolated data points into life-saving action.

Moving Beyond Single-Purpose Devices

Most traditional fall prevention tools—whether wearable alarms, floor sensors, or bed mats—function in isolation. They do one job, in one room, for one resident. They do not share data. They do not learn over time. And they often require staff to manage multiple unconnected systems.
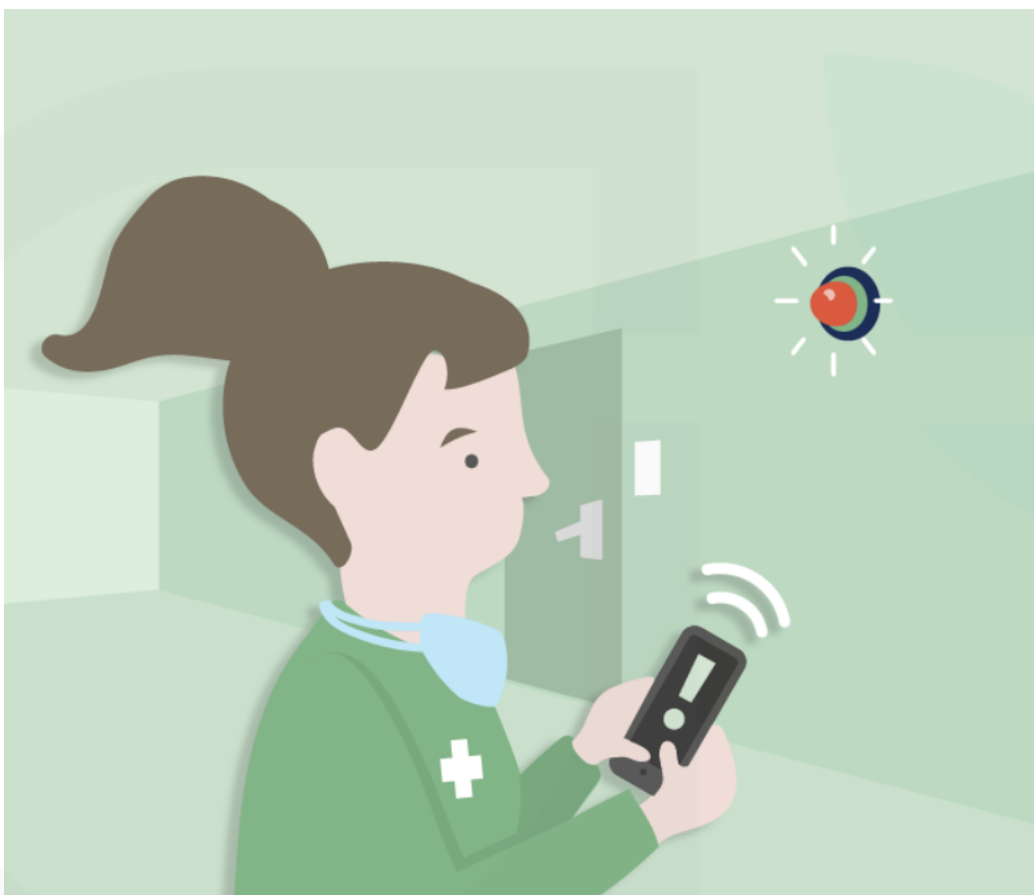
This creates three major problems:

1. Operational inefficiency – staff must check various alerts and interfaces.
2. Inconsistent information – no single view of a resident's risk status.
3. Delayed action – especially when alerts are missed, misunderstood, or misprioritised.

Arquella, integrated with cogvisAI resolves all three by offering a modular, connected, and fully integrated ecosystem.

Seamless Integration with Arquella Call

The power of cogvisAI multiplies when used in tandem with the Arquella Call system —our nurse call platform trusted by hundreds of care providers across the UK.

When cogvisAI detects a risk, the alert is:

- **Instantly routed through Arquella Call, appearing on the same devices staff already use.**
- **Pushed directly to staff smartphones, tablets, or on-call dashboards.**
- **Labelled by priority, so the most urgent situations are responded to first.**
- **Tagged with the resident's identity, room, and risk category.**

This eliminates the need to juggle multiple technologies. It means no switching screens, no delays in finding out what triggered an alert, and no confusion about where to respond. Just clear, actionable information—exactly when and where it's needed.

The result: faster response, fewer missed risks, and more time for meaningful care.

The Management Platform: A Command Centre for Care

Behind the scenes, the cogvisAI system is governed by a centralised Management Platform. This interface allows senior care teams, managers, and clinicians to:

- Customise alert settings per resident.
- Review alert histories and movement patterns.
- Monitor sensor status across the building.
- Analyse data trends over time.

This level of visibility is invaluable for:

- Auditing: Supporting CQC inspections with clear, exportable records.
- Clinical reviews: Understanding changes in resident mobility.
- Care planning: Adjusting risk profiles based on real-time behaviour.

The platform is cloud-enabled but uses edge computing on-site, so it continues functioning even during internet outages—ensuring continuous protection without service gaps.

Data That Makes a Difference

One of cogvisAI's most powerful contributions is the conversion of environmental data into clinical insight.

For example:

- **Frequent get-up events during the night might suggest urinary urgency or nocturnal confusion.**
- **Prolonged bed rest during the day could indicate depression or infection.**
- **A pattern of restlessness near sundown might support a dementia diagnosis.**

These signals can be shared with multidisciplinary teams—nurses, GPs, occupational therapists—enabling early intervention.

In this way, the ecosystem isn't just reactive or even predictive. It becomes strategic—informing holistic care, preventing deterioration, and supporting proactive health decisions.

Supporting Staff, Not Replacing Them

Importantly, cogvisAI is designed not to replace human intuition—but to amplify it. Carers remain the heart of care delivery. But with the right tools, they are:

- **More informed—knowing which residents are most at risk.**
- **More effective—responding with the right urgency, every time.**
- **Less stressed—confident that technology is supporting them, not second-guessing them.**

This is essential in a sector facing chronic workforce challenges. cogvisAI contributes to a more sustainable, satisfying care environment—one where technology handles the monitoring, so humans can handle the caring.

Designed to Scale

The ecosystem model means cogvisAI can be deployed:

- Across an entire wing, for residents with complex needs,
- Or organisation-wide, as part of a digital transformation strategy.

With modular pricing, mobile sensor units, and plug-and-play docking station installation, the system is both flexible and scalable. Care providers can start small and grow as needed—no costly overhauls, no rip-and-replace technology cycles.

It's future-proofed, designed to evolve with your home's needs.

A Safer, Smarter Environment

In the end, the cogvisAI ecosystem isn't about technology for its own sake. It's about creating a care environment where:

- Risks are anticipated, not just discovered.
- Staff are supported, not overwhelmed.
- Residents are protected, not restricted.

It's a shift from "checking on people" to understanding people—and using intelligent data to act accordingly.

In the next chapter, we'll explore how cogvisAI expands its reach even further—with specialised modules for dementia care, wandering detection, room activity, and more, ensuring safety across even the most complex care scenarios.

Beyond Falls — Supporting Dementia and Complex Needs

While fall prevention remains the core focus for many care providers, the challenges facing modern care homes often extend well beyond physical risk. Cognitive conditions such as dementia, Alzheimer's, and Parkinson's disease introduce a host of behavioural and safety complexities—from wandering and sundowning, to disorientation, and self-neglect.

Traditional risk management strategies frequently fall short, either by being too restrictive or too reactive. What's needed is a system that recognises patterns of behaviour as they happen, intervenes intelligently, and respects the personhood of the resident.

This is where cogvisAI's extended modules come into their own—offering a multi-dimensional safety net for those who need it most.

The Dementia Challenge in Care Settings

Dementia is a growing presence in care environments:

- Over 70% of care home residents in the UK live with some form of cognitive impairment.
- These residents are at significantly higher risk of falls, hospitalisations, and behavioural incidents.
- Traditional monitoring methods often rely on visual observation, which is labour-intensive, inconsistent, and frequently invasive.

Moreover, symptoms such as confusion, or night-time wakefulness are not always predictable. Behavioural patterns fluctuate daily, often influenced by environmental triggers or underlying medical issues.

The key to safe, dignified dementia care is anticipation, not just observation. And that's where AI-powered behaviour analysis begins to change the equation.

cogvisAI's Behavioural Monitoring Modules

Beyond its fall prevention engine, cogvisAI features a suite of specialised modules tailored to the realities of complex care environments.

These include:

Wandering Detection

- Identifies repeated, unstructured pacing or exit attempts.
- Uses absence detection to flag when a resident has left their room unexpectedly or been out for an unusually long period.
- Supports early intervention before a resident reaches an unsafe location (e.g. stairs, outside areas, other residents' rooms).

Sundowning Alert

- Detects agitation patterns commonly seen in residents with dementia during the late afternoon or evening.
- Analyses movement intensity, pacing, or restlessness.
- Enables staff to adjust routines, lighting, or medication proactively.

Bed Mobility and Activity Analysis

- Helps carers to prevent bed sores by tracking subtle shifts in movement while in bed or seated.
- Can indicate early signs of discomfort, confusion, or unmet needs (e.g. pain).
- Helps teams detect changes before they escalate into behavioural incidents or physical deterioration.

Each of these modules works silently in the background, requiring no consent from cognitively impaired residents who may be unable to participate in traditional risk assessments.

The system adapts to each individual's normal movement patterns, flagging deviations without relying on alarms that startle or confuse.

Personalised Monitoring Without Physical Restriction

The historical approach to behavioural risk management has often leaned on physical or chemical restraint—locked doors, bed rails, sedatives.

But such measures compromise autonomy and dignity. Worse, they may increase agitation, provoke unsafe behaviour, or carry significant health risks.

cogvisAI offers an alternative: non-intrusive, personalised digital monitoring that preserves safety without restraint.

Key features include:

- Configurable alerts for each individual's known behaviours or risk window.
- Selective monitoring hours (e.g. overnight or during peak sundowning periods).
- Room-by-room tailoring, allowing flexibility within shared environments.

This ensures care is always person-specific, not one-size-fits-all.

Early Intervention Prevents Escalation

Perhaps the most valuable outcome of these modules is the ability to act early, before incidents escalate:

- A resident prone to aggression can be approached calmly before triggering stimuli take hold.
- A resident at risk of wandering can be redirected before they become lost or distressed.
- Subtle signs of illness—reduced movement, restlessness, prolonged stillness—can be investigated promptly.

This not only reduces clinical risk but improves the lived experience of residents. The goal is not just to make incidents less harmful, but to prevent the distress altogether.

Reducing Staff Burnout and Anxiety

Caring for residents with complex needs requires immense emotional resilience. Staff must:

- Monitor multiple residents across multiple rooms.
- Recognise early signs of confusion or distress.
- Respond to behaviours that can be challenging or unpredictable.

cogvisAI doesn't replace these duties—but it makes them more manageable. It becomes a second set of eyes, supporting carers by:

- Highlighting changes they may not spot during busy shifts.
- Prioritising alerts so they focus on what matters most.
- Reducing guesswork, so actions are based on data, not instinct alone.

This helps avoid burnout, improves job satisfaction, and makes complex care more sustainable.

Enhancing Safeguarding and Documentation

The system's event logs and behavioural trend reports also enhance:

- Safeguarding documentation—critical for incident reviews and regulatory inspection.
- Clinical discussions—especially around mental health support, antipsychotic prescribing, or pain management.
- Family communication—providing assurance and clarity about how loved ones are being monitored and supported.

By maintaining detailed, unbiased behavioural data, care providers can:

- Validate interventions,
- Identify risk patterns,
- And prove compliance in the most sensitive scenarios.

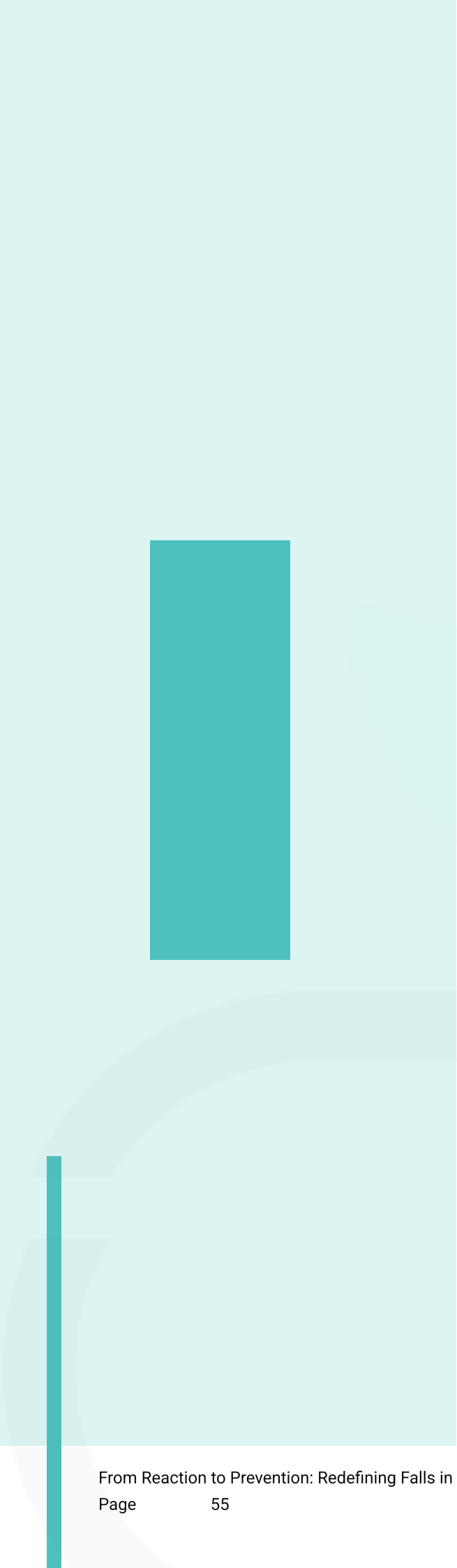# Building a Safer Future for Vulnerable Residents

Ultimately, these extended modules underscore the broader ethos behind cogvisAI: technology should adapt to care—not care to technology.

Residents living with dementia or complex behaviours deserve the same privacy, respect, and protection as anyone else. cogvisAI helps ensure that protection is intelligent, compassionate, and built around their unique rhythms—not imposed upon them.

Next, we'll focus on the staff impact—how technology like Arquella and cogvisAI don't just improve resident safety, but also fundamentally enhances the daily experience of the care workforce.

08

Staff Empowerment Through Technology

Care homes are only as strong as the people who run them.

At the centre of every successful fall prevention strategy—beyond the technology, the policy, the paperwork—stands a dedicated care team, working tirelessly to protect, support, and uplift residents every single day.

And yet, the demands placed on those care teams have never been greater. With staffing shortages, increased clinical complexity, growing regulatory pressure, and mounting emotional strain, even the most committed staff can feel overwhelmed.

This is where technology, when designed correctly, doesn't replace staff —it empowers them. It doesn't deskill the workforce—it amplifies their strengths. And it doesn't create more noise—it removes the noise that gets in the way of care.

Arquella, cogvisAI and the prevention-first model are transforming not only outcomes for residents, but the wellbeing, confidence, and effectiveness of care staff.

From Constant Response to Informed Prioritisation

In reactive care models, staff spend much of their day in a cycle of interruptions:

- Alarms sound—often without clarity or priority.
- They rush to check rooms that may not require attention.
- They complete lengthy post-fall documentation.
- They react to family concerns, regulator queries, and internal reviews.

Over time, this takes its toll—physically, emotionally, and professionally.

With Arquella and cogvisAI:

- Alerts are intelligent and contextual, not just loud (prevention alerts to carer's mobiles can even be silent).
- Staff receive graduated warnings based on actual movement risk.
- Non-urgent events can be filtered, reducing alarm fatigue.
- Residents with the highest need are surfaced first, allowing staff to triage quickly and effectively.

This shift means fewer false alarms, fewer rushed interventions, and more time focused on meaningful, proactive care.

A Calmer, More Confident Working Environment

Falls don't just hurt residents—they impact staff deeply.

There is a unique kind of distress that comes with discovering a resident on the floor, especially when the fall could have been prevented. It's not uncommon for carers to experience:

- Anxiety, wondering if they could have done more.
- Guilt, even when circumstances were out of their control.
- Job dissatisfaction, from constantly feeling behind.

cogvisAI helps to mitigate these emotional burdens:

- By alerting staff before a fall occurs, it gives them agency.
- By reducing fall numbers overall, it builds morale and pride.
- By removing uncertainty, it creates emotional breathing space.

This improves staff retention, resilience, and engagement—key factors in a sector where burnout and turnover are significant challenges.

Easing Documentation and Supporting Regulation

Another burden for care staff is the administrative workload following each incident:

- **Filling out detailed forms,**
- **Updating care plans,**
- **Reporting to senior staff, families, and regulatory bodies.**

Each fall can take 1–2 hours of staff time—not including emotional recovery, shift disruption, or follow-up meetings.

Arquella supports this process by:

- **Automatically logging events with timestamps and classifications,**
- **Providing real-time data to support CQC compliance,**
- **Allowing managers to extract fall histories and behavioural trends with ease.**

This not only reduces paperwork, but improves the accuracy and defensibility of reports, protecting both residents and staff.

Making Staff Feel Supported, Not Surveilled

Too often, new technologies in care are seen as surveillance tools used to monitor staff rather than help them. This perception can breed mistrust and resistance.

But cogvisAI is different:

- **It doesn't track staff.**
- **It doesn't record images or audio.**
- **It doesn't grade performance.**

Instead, it operates as an ally, focusing entirely on resident movement and safety. Staff quickly see that it's there to help them:

- **Respond more efficiently,**
- **Work more calmly,**
- **Deliver safer care without having to be everywhere at once.**

This repositioning—from watchdog to team member—is critical to successful adoption.

Improving Shift Dynamics and Teamwork

In many care homes, especially those with night shifts or skeleton staffing, responding to multiple alarms can cause:

- Team tension,
- Unclear accountability,
- Or even missed risks due to alert overload.

cogvisAI reduces this strain by:

- Routing alerts intelligently to assigned devices,
- Differentiating urgency so teams can coordinate responses,
- And reducing unnecessary checks that pull staff away from one another.

This streamlines workflow, sharpens team communication, and supports mutual trust across shifts.

Training and Adoption: Making It Easy to Use

Crucially, Arquella and cogvisAI is not difficult to use. From the start, it is designed with carers in mind:

- Simple interfaces,
- Mobile alerts that mirror familiar apps,
- Central dashboards for team leads or nurses.

It is not another system to log into—it becomes part of the fabric of daily care. Staff receive initial training, ongoing support, and positive reinforcement as they see real-world results:

- **Residents falling less often,**
- **Families expressing gratitude,**
- **Fewer red flags during inspections.**

This creates a virtuous cycle: staff use the system → outcomes improve → confidence grows → staff use the system more effectively.

Attracting and Retaining the Workforce of the Future

As the care sector competes for talent, particularly among younger professionals, modern working environments become a key differentiator.

A home that invests in tools like cogvisAI signals that it:

- **Values innovation,**
- **Protects its staff from preventable harm,**
- **Wants its carers to feel empowered and supported.**

This not only helps attract skilled workers, but keeps them longer—reducing recruitment costs and improving continuity of care.

Shifting the Culture of Care

Ultimately, empowering staff is about shifting the culture. With Arquella and cogvisAI, homes move from:

- Fear to confidence,
- Overwhelm to managed,
- Reaction to readiness.

It creates a setting where people feel safe—both those giving care and those receiving it. And when carers feel safe and supported, they give their best.

Now, let's look at the evidence—the real-world results from homes that have implemented cogvisAI, and how measurable impact translates into improved outcomes, cost savings, and reputation gains.

Measurable Impact — Data, Outcomes, and Case Studies

Transformative ideas require more than good intentions—they require evidence. In a sector driven by regulatory scrutiny, budget constraints, and clinical accountability, proof of effectiveness is essential.

Fortunately, cogvisAI doesn't just promise improvement—it delivers measurable results, backed by thousands of data points and real-world deployments across Europe and the UK.

Prevention is not just possible. It's already happening.

Falls Reduced — Dramatically

The headline figure is powerful:

Up to 72% of falls have been prevented in care homes that fully implement cogvisAI, and an even higher % of falls reduced when integrated with Arquella Call to Mobile.

This isn't a speculative projection—it's grounded in real data from facilities using the system consistently, with well-trained staff and tailored configurations.

What this means in practice:

- **Fewer hospitalisations.**
- **Fewer serious injuries.**
- **Fewer care hours lost to emergency response and paperwork.**

And, most importantly, fewer moments of fear and trauma for residents.

Detection That Outperforms Documentation

One of the most revealing insights came from a multi-site field study involving over 200 sensors and 120,000 alerts.

The results:

- cogvisAI detected 2.3 times more falls than had been formally recorded.
- In many cases, residents who fell were unable or unwilling to alert staff.
- With automated detection, these unreported incidents were captured and addressed.

This not only provides more accurate incident logs, but also highlights how many events go unnoticed in traditional care settings.

By surfacing the invisible, cogvisAI enables true safeguarding.

Absence Detection That Saves Lives

In bathrooms, corridors, or unmonitored spaces, falls can be especially dangerous. Traditional sensors are often limited to bedrooms or rely on the resident triggering a call for help.

cogvisAI's absence detection:

- Flags when a resident has left their room and not returned within a safe window.
- Allows staff to check on residents proactively—before confusion, distress, or harm escalate.

For residents prone to wandering, this feature is critical. In dementia care especially, absence detection has been shown to:

- Prevent injuries from outdoor wandering.
- Reduce missing person incidents.
- Provide peace of mind for staff and families alike.

Case Study 1: SeneCura Pressbaum

Implementation: 45 sensors installed, full integration with nurse call, call to mobile, workflows.

Result:

- Falls reduced by more than 50%, with an equipment rate of 35%. (a higher % of sensors would see an increase in fall reduction %)
- Staff praised the ability to move sensors between rooms using docking stations—providing flexibility for changing care needs.

Nurse Manager Claudia Götz remarked:

> **"Thanks to cogvisAI, we've been able to reduce falls in our facility by more than half. It gives us the freedom to provide care without compromise."**

Case Study 2: Casa Marienheim

Focus: Residents with high fall risk due to frailty and cognitive decline. The results:

- Fall prevention alerts significantly reduced emergency calls.
- Staff found daily routines easier and safer to manage.

Facility Manager Izolda Sabanovic reported:

> **"The cogvisAI fall prevention makes everyday care significantly easier, especially for those at highest risk."**

Case Study 3: Caritas Preding

After reviewing internal statistics, the care team found:

- cogvisAI directly contributed to a reduction in fall incidents.
- Staff spent less time on reactive intervention, and more time delivering planned care.

Their leadership team concluded:

> **"Through the cogvisAI fall prevention system, falls can be avoided. It has changed how we think about resident safety."**

Economic Impact — Beyond the Facility

Falls are not only a personal tragedy—they represent a major economic burden to the wider health and social care system.

- Estimated £2.3 billion annual cost to the NHS from fall-related injuries.
- Over 4 million hospital bed days per year in the UK linked to falls.
- A single serious fall may cost £60,000+ in treatment, rehabilitation, and care escalation.

By significantly reducing falls:

- Care homes lower insurance premiums and risk exposure.
- Emergency admissions decline, easing pressure on hospitals.
- Staffing costs fall, as fewer hours are lost to post-fall processes.

Prevention pays—not just ethically, but financially.

Better Care Ratings and Regulatory Outcomes

Care homes using cogvisAI have reported:

- **Improved inspection feedback, especially from regulators such as the CQC.**
- **Easier access to compliance evidence, through exportable reports and sensor logs.**
- **Enhanced family communication— families are reassured by visible, intelligent safeguarding.**

In a competitive marketplace, where care quality and transparency are paramount, this creates a strong differentiator.

Real Lives, Real Results

Behind every statistic is a person.

A resident who didn't fall because a carer arrived in time.

A family member who didn't get a call from A&E.

A carer who felt calm, capable, and confident in their shift.

These are the true metrics of success—lives improved, burdens lifted, care delivered with dignity.

In the final chapter, we bring everything together. We'll look at what care leaders can do right now to begin this transformation—and how prevention can become the cornerstone of care, not just a hopeful ideal.

10

Leading the Change — What Care Leaders Must Do Next

Changing the way we approach falls in care isn't about technology alone. It's about leadership.

It takes conviction to move from reactive systems to proactive models. It requires courage to challenge "how it's always been done." And it demands clarity to see that fall prevention is not just an aspiration—it is a professional, clinical, and ethical imperative.

In this final chapter, we speak directly to you, to care home owners, registered managers, and senior leaders across the sector. Because you are the ones who can lead this transformation.

Why Leadership Matters

Culture is set at the top. If falls are accepted as "part of ageing," that attitude permeates everything—from care plans to shift handovers to risk assessments.

But if leadership champions prevention, invests in proactive systems, and celebrates early intervention, that culture becomes one of:

- **Anticipation, not reaction.**
- **Confidence, not anxiety.**
- **Dignity, not restriction.**

Staff will model what leadership models. Families will notice what leadership values. And regulators will reward what leadership prioritises.

What Leadership Can Do — Today

Here are five concrete actions care leaders can take to embed prevention in their homes:

1. Redefine Success Metrics

Stop measuring fall response times alone. Start asking:

- How many falls were prevented this month?
- How many residents received early interventions based on behavioural changes?
- How have staff workloads shifted with proactive technology in place?

By changing what we track, we change what we value.

2. Audit Current Systems for Gaps

Walk through your current setup:

- Are alerts being missed or delayed?
- Do you have real-time visibility across residents at risk?
- Are staff relying on instinct or evidence to triage alerts?

If you find inconsistencies, duplication, or reactive workflows—it's time to modernise.

3. You Don't Need to Kit Out Your Entire Home

Start with five units. Five rooms. Three residents.

Let your team see the difference for themselves:

- Early alerts that make sense.
- Documentation that writes itself.
- A fall that didn't happen.

ROI is usually clear within weeks, and staff adoption grows rapidly once they see the value.

4. Invest in Staff Confidence

Change can create fear. Reassure your teams:

- This isn't about replacing jobs—it's about reducing stress.
- This isn't surveillance—it's support.
- This isn't cold tech—it's compassionate care delivered more intelligently.

Train. Support. Celebrate early successes.

5. Share the Vision with Families

Families want safety—but they also want autonomy for their loved ones.

Show them how prevention-first systems:

- Preserve independence,
- Maintain privacy,
- Reduce emergency calls.

When families feel included and informed, their trust increases—and their satisfaction follows.

Building the Business Case

For those needing board approval or budget allocation, prevention technology like cogvisAI is not a sunk cost—it's a strategic investment.

Key benefits to highlight:

- **Fall reduction leads to lower hospitalisation and insurance costs.**
- **Staff empowerment leads to better recruitment and retention.**
- **Regulatory alignment improves inspection outcomes and occupancy.**
- **Digital transformation strengthens your brand and competitive edge.**

It's not just about doing the right thing—it's about building a care model that is sustainable, scalable, and future-ready.

The New Standard of Care

We stand at a tipping point in adult social care.

The sector is under more pressure than ever. But we also have more powerful tools than ever. We can continue with legacy systems that react—or we can build a future that prevents harm, protects dignity, and empowers care.

The providers who lead this change won't just reduce falls. They will:

- **Set a new benchmark for excellence.**
- **Attract the best staff.**
- **Inspire trust from families and communities.**

They will deliver care that is not only compliant, but compassionate. Not just responsive—but reassuring. Not just reactive—but revolutionary.

In Closing

"When fall prevention is done right, detection becomes the backup—not the plan."

Let it guide your strategy. Let it shape your culture. Let it be the standard your care home aspires to every single day.

Because every fall that doesn't happen…
Every injury that's avoided…
Every resident who sleeps safely…

Is a quiet victory worth leading for.

For more information please get in touch

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Capturing moments of care