



Digital Age Communications toward the connected hospital

Alcatel-Lucent Enterprise delivers flexible, secure and highly available [Digital Age Communications](#) for the [connected hospital](#).

Hospital CIO priorities have changed since the 2019 CHIME survey*, with the global events of the last couple of years. Today the main priorities are:

- Expanded telemedicine expectations
- Updated business continuity plans and business impact analysis
- Improved remote access capabilities, security and the addition of eWork devices for short- and long-term remote teams
- Enhanced remote patient monitoring
- Accelerated business process automation
- Implementation of new and future initiatives under already constrained budgets
- Real-time, predictive information and strong analytics for decision-making



Patients' expectations have also changed significantly. Many have embraced the convenience of consumer level services, teleconsultation and online communications with caregivers.

To meet evolving expectations, healthcare organisations need to strengthen their connectivity to ensure each patient interaction meets privacy, security and regulatory requirements, to boost engagement and resilience continuity for years to come.

* CHIME: College of Healthcare Information Management Executives
"Health System CIO Priorities—Changes Ahead Due To Covid-19" from "Health IT Outcomes"

Opportunities

- Innovative digital services
- Patient safety and security
- Global process efficiency
- Attractiveness

Challenges

- Simplicity
- Scalability
- Cybersecurity
- Cost-efficiency

A connected hospital relies on connectivity, digitalisation, and real-time communications and collaboration. Tackling these challenges requires three key areas of improvement:

- **Improving security, efficiency and openness**
- **Redefining the care delivery**
- **Enhancing the patient experience**

ALE is here to help

Alcatel-Lucent Enterprise provides the technology building blocks to connect the patient and the healthcare organisation, services and ecosystem. Those building blocks include the network and communications infrastructures, value-added applications and professional services.

Improving security, efficiency and openness

The communications system is vital for a smooth, secure hospital operation. To meet these requirements, Alcatel-Lucent Enterprise delivers a:

- Highly available, robust and resilient architecture ensuring one-stop operations and business continuity
- Future-proofed, evolving communications platform providing investment protection, cybersecurity (hardened OS, communication encryption and more) and smooth transition to new business models
- Notification server, certified Class IIB Medical Device Regulation to connect to medical equipment and systems
- Multi-channel emergency server to manage hospital emergency codes (Code blue, for instance)



ALE's **Connecting Everything** enhances hospital openness with:

- Voice and video communications integrated into business application/system such as EMR/EHR and PACS
- Alarm services triggered from Internet of Medical Things (IoMT), medical systems and even building management systems
- Artificial Intelligence (AI) connectivity to help with decision-making through contextual information data analysis

Flexible cloud models help IT teams by offering a wide-range of private, public and hybrid communications solutions providing innovative and new services with lower upfront costs. [Rainbow™ by Alcatel-Lucent Enterprise](#) cloud-based solutions also leverage interactions with AI and chat bots, as well as data from IoMT and business systems for more informed, accurate and faster decision-making.

Solution sheet

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Redefining care delivery to simplify caregivers' lives

Caregivers work in an environment that is inherently very stressful. Certain problems related to the organisation and work tools can have a direct impact on their health and the quality of care:

- **Walking time:** 1 to 1.5 hours per day on average
- **Searching time:** 1 hour per day, on average, looking for equipment, not to mention the time spent looking for people (patients or colleagues)
- **Alarm fatigue:** Related to the increased number of notifications when 70-90% of alarms are wrong or irrelevant
- **Insecurity:** 20%, on average, of caregivers surveyed reported having been physically assaulted

In order to relieve caregivers from work overload and mitigate the risk of burn-out (in some cases up to 30% of staff) or resignation, it is essential for care institutions to create efficiencies. Digital technology can help caregivers spend more time with patients to provide quality care and take care of themselves as well.

Easy team collaboration

Rainbow collaboration services offer rich communications features (contact management, presence, chat, audio/video and screen and file sharing) to stay connected and collaborate instantly with teams on-site and remotely.

At the nurses' station, during the morning shift, Rainbow enables the head nurse, to listen to the recording of the night shift report.



Secure alarm processes

Our [notification server](#) allows you to connect and monitor alarms from a large range of medical systems (such as patient monitors and nurse calls) and IoMT sensors to streamline the flow of caregiver alarm notifications.

When two alarms sound, the nurse can acknowledge the more urgent alarm on their DECT handset or smartphone and intervene in a timely fashion.



Efficient mobile communications

ALE offers a wide range of mobile solutions to provide an essential foundation for healthcare worker mobility and security, including:

- A high-performance Wi-Fi/DECT infrastructure for indoor and outdoor coverage
- A ruggedised DECT/WLAN handset or softphone on third-party smartphone, all connected to a resilient and redundant communication server

With real-time communications, a nurse can call an available specialist for immediate diagnosis and rapid action.



Real-time geo-location of people and assets

[Alcatel-Lucent OmniAccess® Stellar Asset Tracking](#) helps staff save time when searching for medical equipment or people, such as at-risk patients or other staff members.

An attendant can easily locate a wheelchair on the mobile app and take the patient to their scheduled appointment.



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Enhancing the patient experience

The patient's journey is not always easy, there are often pitfalls along the way. We have all experienced the over-crowded waiting rooms, postponed appointments, missing administrative documents, among others.

Alcatel-Lucent Enterprise offers advanced digital solutions that include:

- Multi-channel welcome solutions
- Basic to VIP standard patient room handsets and associated HVAC (Heating, Ventilation, and Air Conditioning) services
- Patient digital engagement solutions before, during and after a stay



Optimise the hospital welcome and offload the healthcare units

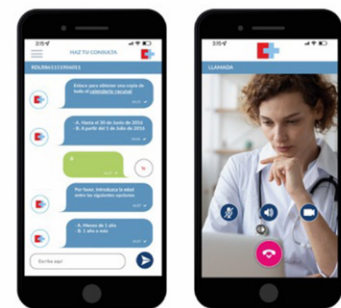
- Manage a high volume of calls efficiently with one-touch call/transfer operations based on attendant console or prioritised "skill mapping" to route multi-channel calls according to the best available resources
- Automate the most repetitive and resource-intensive tasks with an intuitive and economical interactive voice server, integrating voice synthesis and automatic speech recognition services
- Optimise the facility's reception from an internet site with intelligent routing to an agent, based on competence criteria (such as choice of pathology, or language) with multimedia management (chat/video)

Make it easier for patients to communicate while hospitalised

- VIP patients and their relatives require high-end hotel style rooms and services, such as monitoring of their in-room comfort features (temperature, lights, ventilation and shutters) and access to hospital services (such as a hairdresser or laundry). ALE provides VIP tactile handsets running on Android, allowing partner apps to integrate their solutions into a high-end bedside handset
- Analogue or SIP handsets with antibacterial plastic adapted to the healthcare environment

Foster patient digital engagement

- Complete remote consultations, perioperative, or chronic illness monitoring with audio, video, chat and file sharing
- Optimise resources by connecting the patient to a chatbot
- Monitor patients' health conditions using IoMT
- Connect patients to an enriched virtual assistant with Machine Learning (chatbot/AI) enabling patient data analysis



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