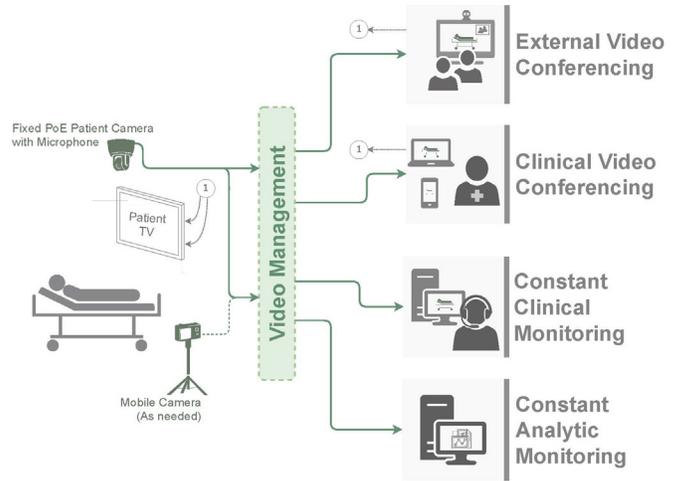# Patient Room Cameras

A multi-function camera in every patient room provides integrated telehealth between staff and patients and video visiting with family members while improving patient safety and staff workflows using artificial intelligence (AI) and machine learning systems.

As cameras become integrated with AI systems, support for clinical/patient safety monitoring increases in promising ways and results in tangible safety benefits for both patients and staff.

—ALEXIS FULLER, SENIOR STRATEGIC CONSULTANT

NEED

Health care delivery is increasingly incorporating communication beyond in-person interaction. Many acute care facilities have escalated their deployment of telemedicine/telehealth and patient video monitoring in an effort to provide more effective, efficient, and informative patient care, better utilize hospital staff while reducing burnout, enhance patient and family engagement, and increase both patient and staff safety. Use of AI technology optimizes staff workload while reducing potential errors due to overloaded staff.

BENEFIT

A camera in the patient room optimizes staff member workflow by reducing travel time for quick check-ins, enabling more rapid access to patients for both clinical specialists and non-clinical staff, providing telehealth and video translation capabilities, and eliminating the need for some patients to have dedicated in-room staff care. In-room patient cameras increase the patient's family connection by providing video visiting capabilities, while providing automated monitoring for falls, stroke, sleep, confusion, and other relevant conditions.

RISK

Provision of a camera in the patient room creates potential privacy and loss of dignity concerns for patients related to surveillance and loss of privacy. This can be somewhat mitigated by having obvious on/off capabilities on the camera. If used to record video, there are significant privacy and HIPAA compliance concerns associated with the storage and potential access of this recording and the need for obtaining patient and family members' consent prior to recording.

Value

MAX

Staff Satisfaction

HIGH

Patient Engagement

HIGH

Clinical Outcomes

HIGH

Risk

MEDIUM

VANTAGE Technology Consulting Group

Patient Room Control

Patient control of the patient room environment including temperature, lighting, window shade position, and ambient audio improves patient satisfaction, reduces staff workload for mundane activities, and increases patient safety by providing both comfort and control.

Comfort and control of their environment is a significant patient satisfier. Being able to adjust the systems in their room reduces the feeling of helplessness that many patients feel when in a hospital.

—PHIL CROMPTON, PARTNER

NEED

Traditionally, the patient room environment is controlled via light switches and thermostats with rudimentary controls for lights (on/off) offered by the pillow speaker. Modern building automation systems allow the patient to adjust (within code limits) the temperature, lighting, shade position, ambient audio, and other systems within the patient room using the patient television and/or the patient's smart device.

BENEFIT

Giving a patient and their family the ability to control the lighting, shade, temperature, and ambient audio in their room increases patient satisfaction and provides comfort and control of their environment. Patient room control also reduces the number of mundane calls made to nursing staff, in turn saving staff time and increasing staff satisfaction. Automated configuration of the room's settings in response to an alarm/code in the room improves patient safety and supports clinical staff.

RISK

Room environment control is limited by code requirements and other factors –the temperature can only be adjusted by a few degrees, lighting can only be so bright, etc. – and these limitations may be a source of dissatisfaction to patients. In addition, increasing the sophistication of the room may confuse or irritate certain patients. Simple default controls must be in place for those patients who cannot or do not wish to control their room environment through a sophisticated interface.

Value

HIGH

Staff Satisfaction

HIGH

Patient Engagement

HIGH

Clinical Outcomes

LOW

Risk

LOW

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Technology Consulting Group

Patient Room Signage

A interactive digital room sign outside of each patient room displays patient information, noted alerts, infection control information, and (for credentialed staff) patient vitals and other electronic medical record data.

Live updating of the patient room sign increases staff and patient safety by ensuring the information is always current. During the pandemic, clinical staff reviewed this information before deciding if they needed to don PPE to enter the room.

—ALEXIS FULLER, SENIOR STRATEGIC CONSULTANT

NEED

In clinical environments without digital patient room signage, clinical staff frequently utilize paper or other physical materials to indicate patient-specific information outside of patient rooms. These methods rely heavily on clinical staff to manually update and are prone to error.

BENEFIT

Interactive digital signage outside of patient rooms increases staff satisfaction by providing access to real-time data and increases safety by providing live updates on a patient's condition including real-time patient information, alerts, and warnings for staff. It increases patient satisfaction by allowing staff to view real-time patient vitals without having to enter the room and disturb the patient, and it supports room utilization alerts and integrations, such as maintenance or room turnover requests.

RISK

Displaying patient clinical information could inadvertently share patient data with nearby individuals, so patient clinical information should only be displayed for an authorized member of staff. Because staff will refer to the patient room displays for real-time information, any interruption in connection to real-time data will require that the display indicate prominently that it is "offline" so that staff are made aware that the information shown could be out of date.

Value
HIGH

Staff Satisfaction
MAX

Patient Engagement
LOW

Clinical Outcomes
HIGH

Risk
LOW

VANTAGE
Technology Consulting Group

Patient Room Voice Charting

Speech recognition systems augmented with AI/machine learning technology support doctor and nurse interaction with the electronic medical record and other clinical software systems via the spoken word. Doctors and nurses use their voice to navigate through display screens and transcribe text directly into the electronic medical record.

Speech recognition technology has significantly advanced in the last few years, with context-aware AI systems providing an additional layer of error checking and correction.

—PHIL CROMPTON, PARTNER

NEED

In most clinical environments, medical staff interaction with the electronic medical record (EMR) and other clinical software applications is through a computer, keyboard, and mouse in or near the patient room. These traditional mouse and keyboard data entry methods are slow, subject to error, and offer poor user-interface design. The use of speech-recognition technologies allow clinical staff to interact with the EMR and transcribe notes directly into the record in a more natural way by using their voice.

BENEFIT

Voice charting systems, whether independent or as a supplement to traditional interfaces, increase staff satisfaction by improving workflow, speed, and convenience. Patient safety increases as the use of real-time transcription reduces the likelihood of a medical error due to a delay in data entry. Artificial Intelligence (AI)/machine-learning systems will continue to improve voice recognition technologies, providing context-sensitive assistance to improve accuracy and reduce potential errors.

RISK

The voice charting system must be able to confirm that the individual speaking to it is authorized to do so. Patient privacy and HIPAA compliance must also be considered, because using the spoken word to enter data means that those nearby may be able to overhear. The voice charting system must be able to accurately understand spoken commands and data entry.

Value

HIGH

Staff Satisfaction

MAX

Patient Engagement

LOW

Clinical Outcomes

HIGH

Risk

HIGH

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