

**PHILIPS**

capsule 

Product brief

# Capsule Surveillance

detecting potentially emergent clinically actionable events from live-streaming medical device data



# From data to decisions

The need for solutions that alert clinicians to emergent, clinically actionable events is increasing due to the rising acuity level of patients throughout the hospital, and the continuing shortage of nurses, respiratory therapists and other care providers.

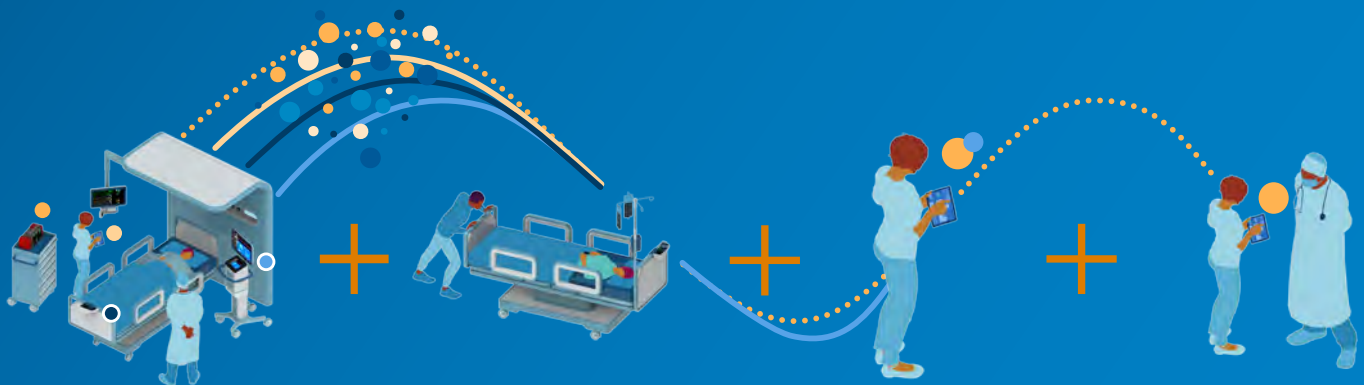
## Surveillance — a distinct processes in patient care

**Clinical surveillance** involves the analysis of live-streaming clinical data from all patient devices using condition-specific algorithms.

- Potentially detects early signs of change on a condition-specific event for rapid, appropriate intervention
- Integrates into existing workflow and virtual care tools, such as Philips eCareManager and Epic Monitor

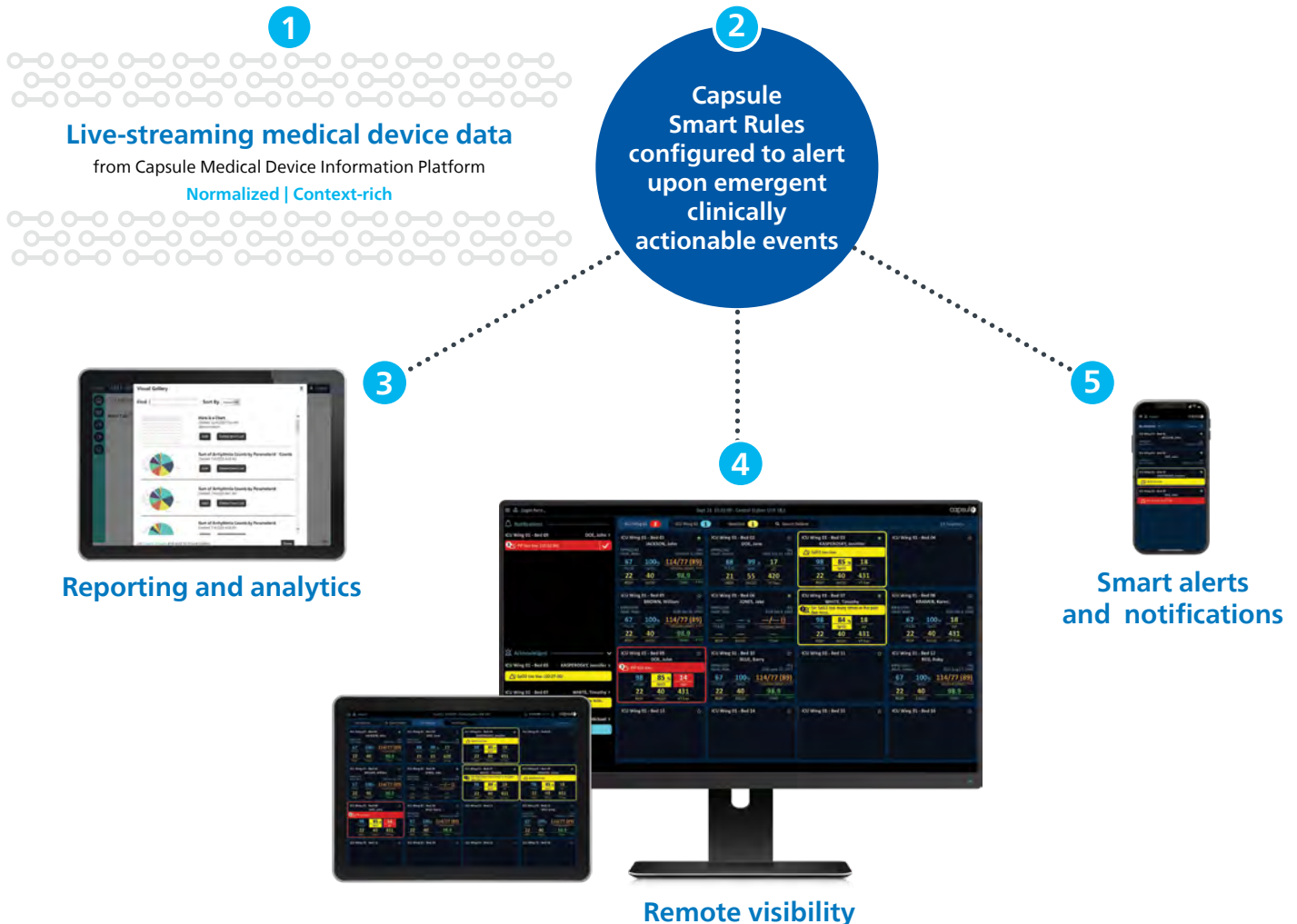
## Capsule Surveillance is designed to:

- Support the entire care team with actionable insights
- Enable improved staff efficiency and satisfaction
- Align alert notifications to clinical practice and patient care guidelines
- Support improvements in caregiver safety and conservation of personal protective equipment in infectious disease care
- Enable technology convergence and reduce hospital IT infrastructure complexity



# One platform supporting multiple clinical use cases

Live, streaming medical device data in the Capsule Medical Device Information Platform (MDIP) is continuously analyzed by Capsule Surveillance Smart Rules, which are specifically configured to alert upon detecting emergent, clinically actionable patient events based on the hospital's clinical practice and policy. Smart alert notifications are then routed to care team members, and streaming data can also be viewed remotely. Reporting and analytics are available to review results and support on-going optimization and quality improvement.



## What is included in the Capsule Surveillance subscription license:

1. Live-streaming data from medical devices connected to Capsule MDIP.
2. Capsule Smart Rules used to create alerts notifying of clinically actionable patient events.
3. Reporting and analytics to review results and support system optimization.
4. Configurable views of live medical device data (via secure web-browser) to support unique workflows.
5. Routing of condition-specific smart alerts to assigned clinicians, escalating as needed.

# Capsule Surveillance helps detect the onset of emergent, potentially actionable conditions early and inform the care team

## Anywhere access



Live, streaming patient data is available via virtually any browser-based device, to see multiple patients – with deep dive capability to see waveforms, trends, events, history, device settings, and more. The Capsule Surveillance workstation view provides an alert list across multiple patients ordered by priority.

## Mobile notifications



Integrating with smart phones, pagers, and VoIP phones, Capsule Surveillance supports the escalation of Capsule smart alerts and source medical device alarms using IHE ACM/WCTP Interface (XML or Text).

## Virtual ICU/telehealth



Capsule Surveillance helps to provide remote clinical oversight, based on live-streaming data with condition-specific, potentially clinically actionable alerts and vendor-neutral aggregated viewing of clinical data directly from devices, including waveforms and settings.

## Condition-specific alerts from patented Smart Rules\*

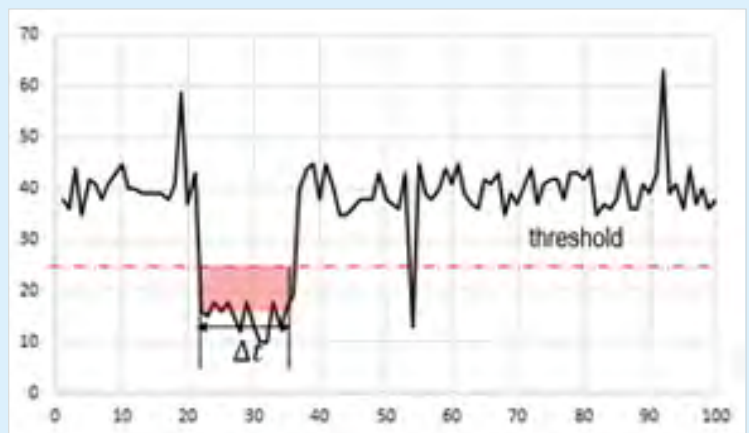
Capsule Surveillance allows for user configuration of specific Smart Rules. As part of implementation, Capsule will provide a Smart Rules configuration best-practice guideline based on current literature and validated experience. Hospital clinical staff work with Capsule clinical specialists during the clinical design sessions to determine the rule configuration per facility and care area.

### Example: sustained Smart Rule

Alert is triggered when a value (patient measurement) violates a specified threshold for a minimum time period over a pre-defined time window.

#### Other Smart Rules for:

- Consecutive alerts
- Combination alerts
- Trend Limit alerts
- Settings alerts
- Leads alerts
- Expression alerts
- Instability alerts\*\*



\* Patents US 9,626,479 B2, US 11,031,129 B2, US 11,246,542 apply to all Capsule Surveillance Smart Rules.

\*\* Patents US 10,685,549 B2 and US 11,497,456 B2 apply only to Capsule Surveillance Instability Smart Rule.

## Clinical guidelines supported by Philips Capsule Surveillance

- Surveillance can manage conformance of parameter settings with guidelines, such as adherence to lung protective tidal volume and prolonged mechanical ventilation guidance in mechanically ventilated patients as recommended by National Association for the Medical Direction of Respiratory Care (NAMDRC)
- Surveillance provides clinically actionable alerts to aid in adherence to best practices recommended by BTS/ERS and clinical management in non-invasively ventilated patients
- Surveillance aids in the identification of patients with potential opioid-induced respiratory depression (OIRD) as defined by ASA/BJA and supported by large-scale clinical trials, such as the PRODIGY-II
- Surveillance can be configured to detect significant behaviors in oxygen saturation, which may signal decline or desaturation, or in combination with other indicators of significant physiological findings consistent with respiratory distress, hypoperfusion, or specific disease or illness process as recommended by the American Association of Respiratory Care (AARC)

## Reporting

Capsule Surveillance reports help hospitals to set a baseline for understanding their specific volume of medical device generated alarms for the facility, department, and individual patients. These reports can be part of an ongoing performance improvement strategy and inform efforts to address the Joint Commission's National Patient Safety Goal on alarm fatigue and management.



## Analytics

High-resolution patient data is available for query by Philips Capsule experts or your own informaticists using standard SQL query tools.

Compare device-generated alarms with Smart Rules alerts and perform 'what-if' assessments.

## Access a holistic view of the patient anywhere

Capsule Surveillance supports remote viewing of live, streaming patient measurements, waves, and alerts based on Smart Rules. This may be one screen in a virtual ICU, a handheld tablet used during rounds, or a mobile phone from a clinician on the go. When interfaced with Philips eCareManager or Epic Monitor, Capsule Surveillance can automatically open a specific patient's detail window on the eCareManager or Epic Monitor screen. This provides the caregiver a view of in-the-moment, live-streaming measurements, waveforms and device settings from a variety of bedside device types and brands. When configured with a dedicated workstation, Capsule Surveillance also annunciates and shows prioritized device alarms.



## Matrix view with smart alerts

- View **patient tiles** of measured medical device parameters for every patient in a care unit.
- Configure customized watchlists to view a subset of patients.
- Click on a patient tile to view details, such as waveforms, trends, events, device settings and smart alerts.

**Smart alert dashboard** displays a prioritized list of patients' triggered smart alerts and device alarm notifications.

## Live-streaming device data and waveforms



Visualizing live-streaming device parameters (includes access to any data variable coming from devices).

## Trended device data



Review recent trends across multiple measurements to assist in assessing changes in patient condition.

## Receive data and smart notifications on-the-go

Integrated with a popular 3rd party staff assignment client or Clinical Communication and Collaboration application, Capsule Surveillance can be configured to route notifications to clinicians on the go which may include call back numbers for easy communication to the patient room or other communication center. Capsule Surveillance's clinical interface will display on a remote device that accesses the surveillance server after user authentication.

### My Watchlist

View live-streaming device data for any patient in a unit. Select assigned patients for quick identification.

### Patient detail view

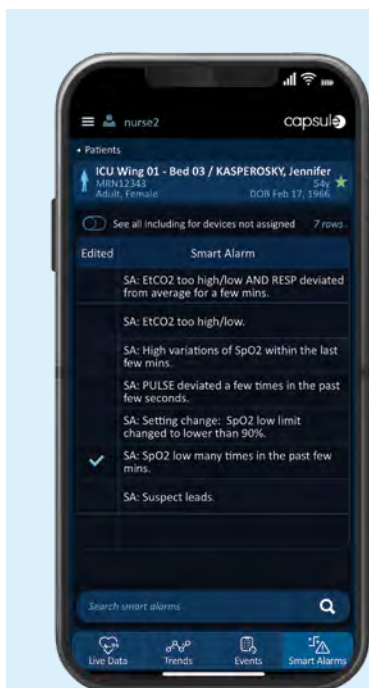
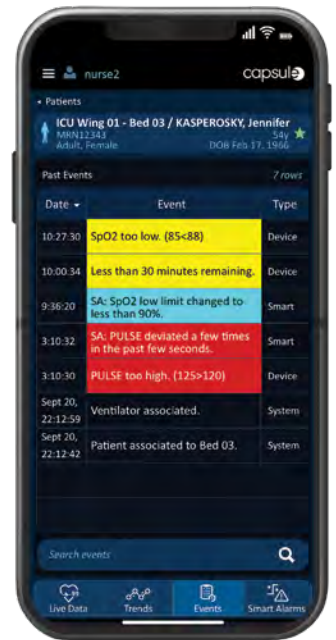
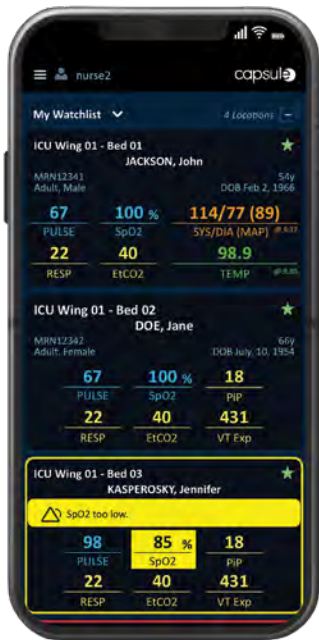
See all detailed patient physiological measurements, waveforms and alerts.

### Trended data

Review a patient's past measurements, events and configured settings.

### Events

Scan a chronologic and detailed view of a patient's clinical events.

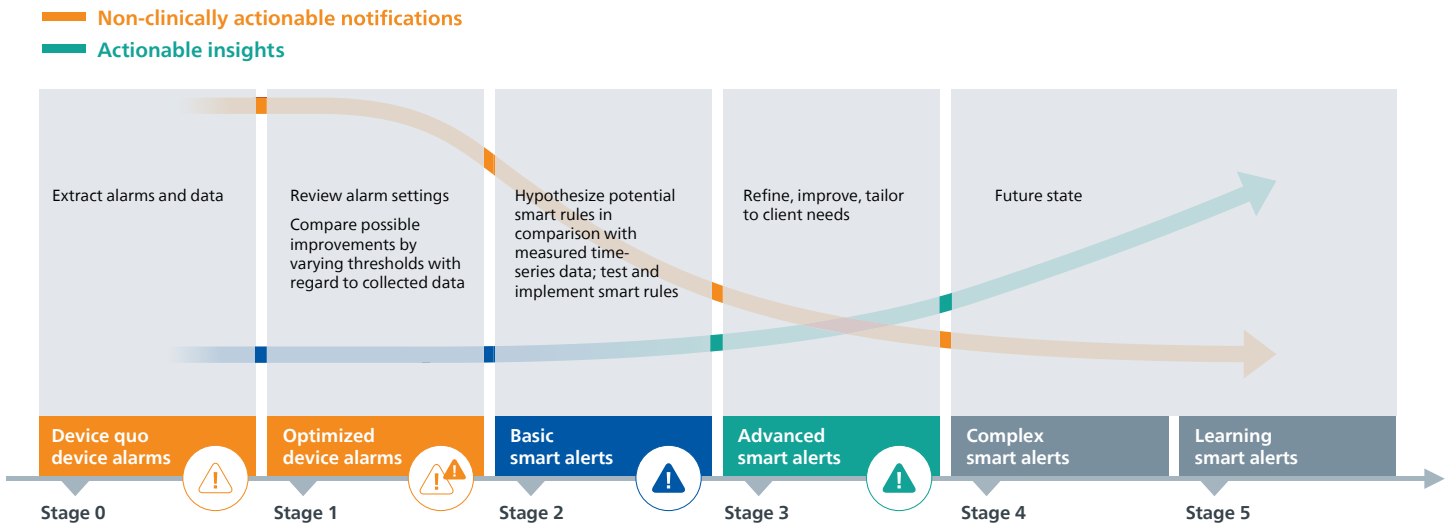


### Smart alerts

Review a patient's smart alerts. Authorized users can adjust Smart Rules thresholds with personalized limits.

# Capsule Surveillance continuous optimization process

Philips Capsule smart alerts derived from applying Smart Rules can be customized, refined, and evolved per the client needs. The process of implementing and deploying smart alerts follows an iterative and continuous approach captured by the Clinical Surveillance Maturity Model, or CSMM. The process is defined according to the diagram below. It starts at Stage 0 with an alarm assessment to highlight the chief challenges and the prospects of improving these by making initial alarm adjustments. This then evolves towards Stage 1, where an evaluation of the alarms and vital signs measurements is made to determine whether Smart Rules can be applied to achieve clinically specific alerts. An example of this could be combining, say, heart rate with pulse oximetry to achieve a notification that, when annunciated, carries more significant clinical action (i.e., fewer false indications of action). Smart Rules are then deployed and evaluated. Once iteration yields a level of performance acceptable to the client clinical staff, the Smart Rule and the associated smart alert is put into action. Over time, the client clinical staff report their opinions and data continue to be obtained on the performance of the smart alert through an approach of continuous process improvement (CPI). Further refinements, or additional complexities may form the basis for advanced smart alerts. The overall objective is the increase in sensitivity and specificity to improve the overall alarm and notification of clinically actionable events, including adverse events.



## Technical and clinical professional services

As part of implementation, Professional Services provides Smart Rules configuration best-practice guidance based on current literature, experience and your patient population's needs. Capsule clinical specialists consult with hospital clinical staff in design sessions to help optimize the rule configuration at the unit level.

Ask your Philips Capsule representative for more details.

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