

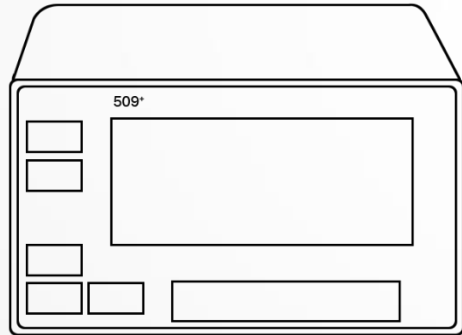


# ePM™ Series Launch

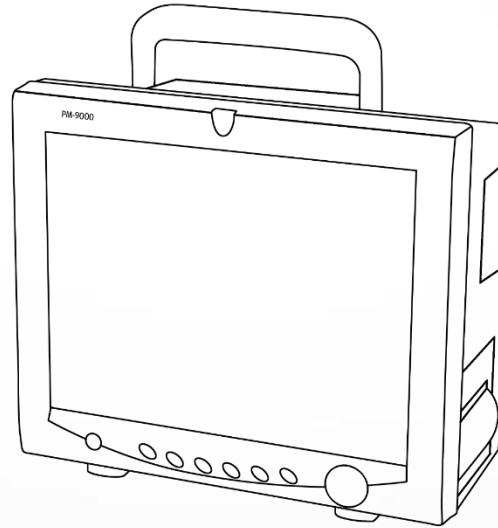
**mindray**

healthcare within reach

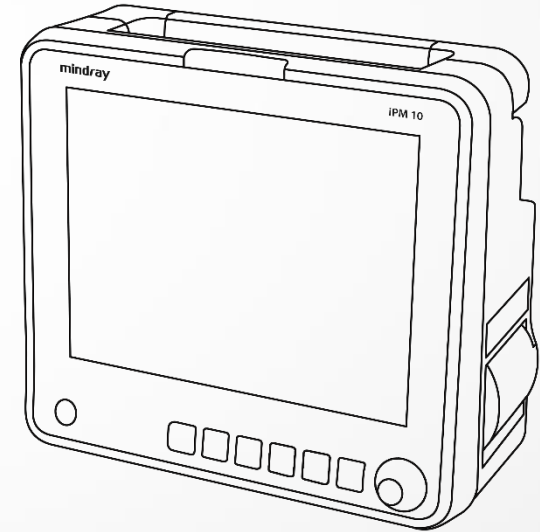
# The evolution of Mindray **PM** patient monitor



**1993**  
The first multi-  
parameter patient  
monitor of Mindray

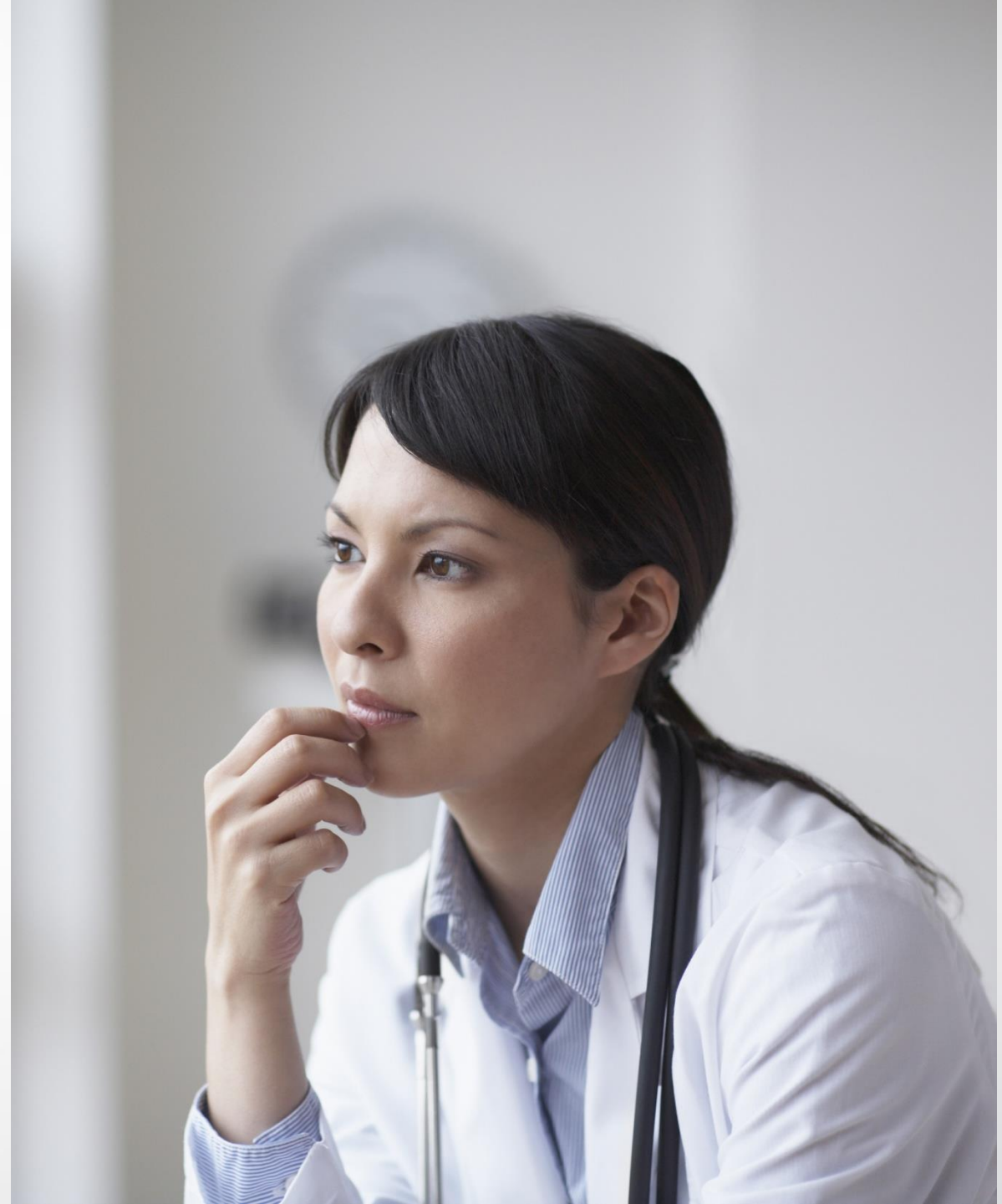


**1998**  
Compact & portable



**2011**  
Semi-modular

Mindray PM patient monitors,  
inspired by **the needs of**  
**customers**, adopt advanced  
technologies and transform  
them into **accessible innovation**.



For sub-acute unit and general ward,  
they are facing.....



✓Awake ✓Restless ✓Irritable

Measuring  
interference



One nurse for many patients

Busy &  
heavy workload



In sub-acute unit and general ward,  
a patient monitor should be

- Accurate
- Easy to use
- Easy to clean
- Portable
- Connected

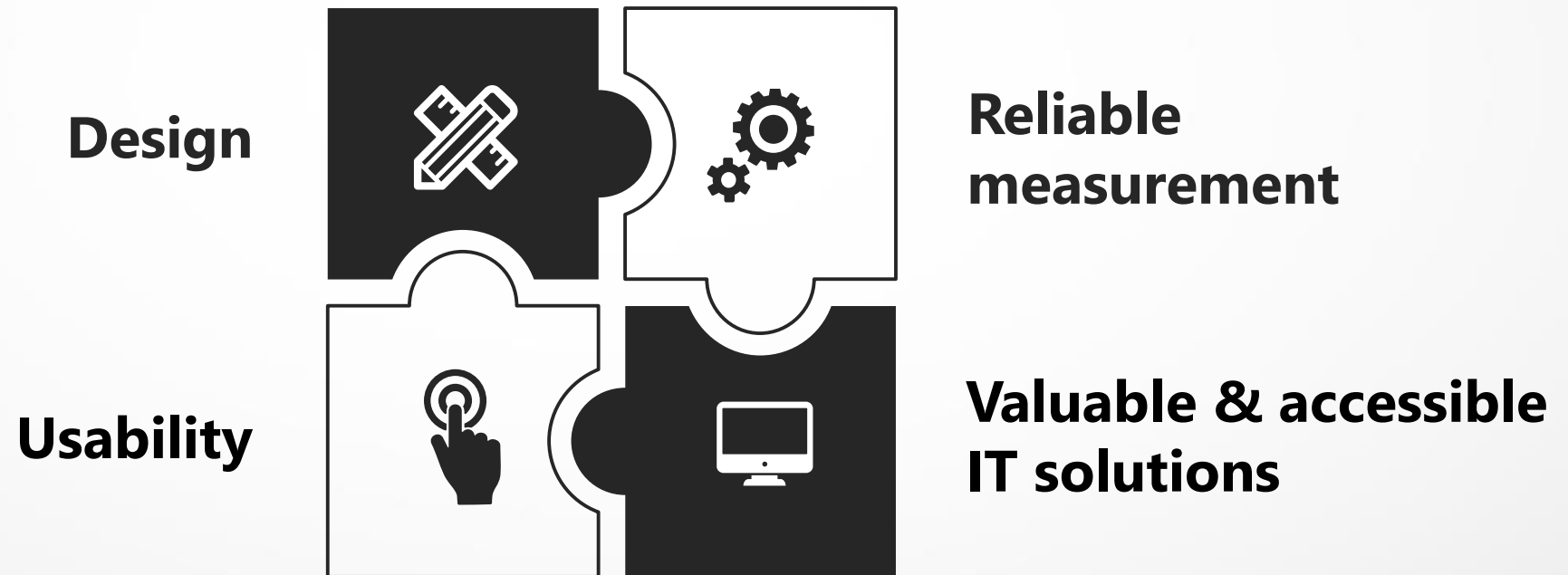
# The evolution of Mindray **PM** patient monitor



## ePM™ series

The **new** generation is launching

# The Evolution of Simplicity





# Unified Design Style with Mindray Portfolio



ePM 10M/12M

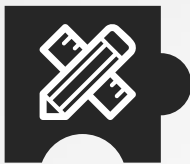
Modular



ePM 10/12/15

Compact





## Excellent Visual Experience



Clear

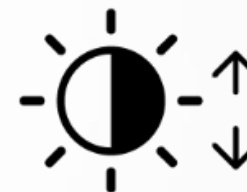
1280x800 pixel (10.1" /12.1")

1366x768 pixel (15.6")



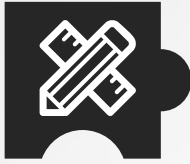
Visible

Wide viewing angle  $\geq 170^\circ$



Comfortable

Auto-brightness adjustment



## Minimalist Design

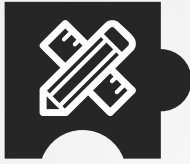


Raising extension rack

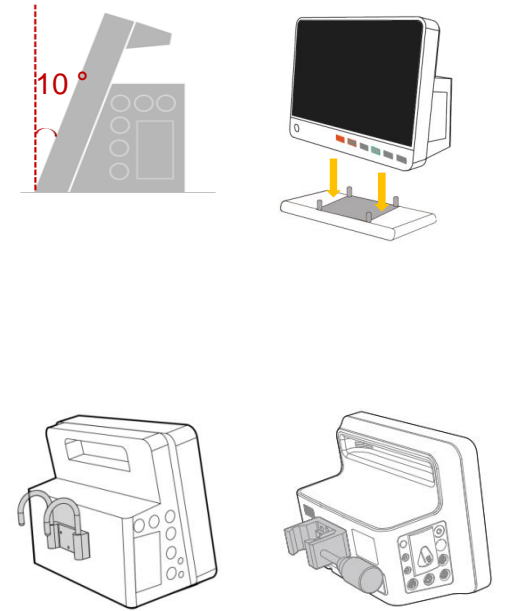
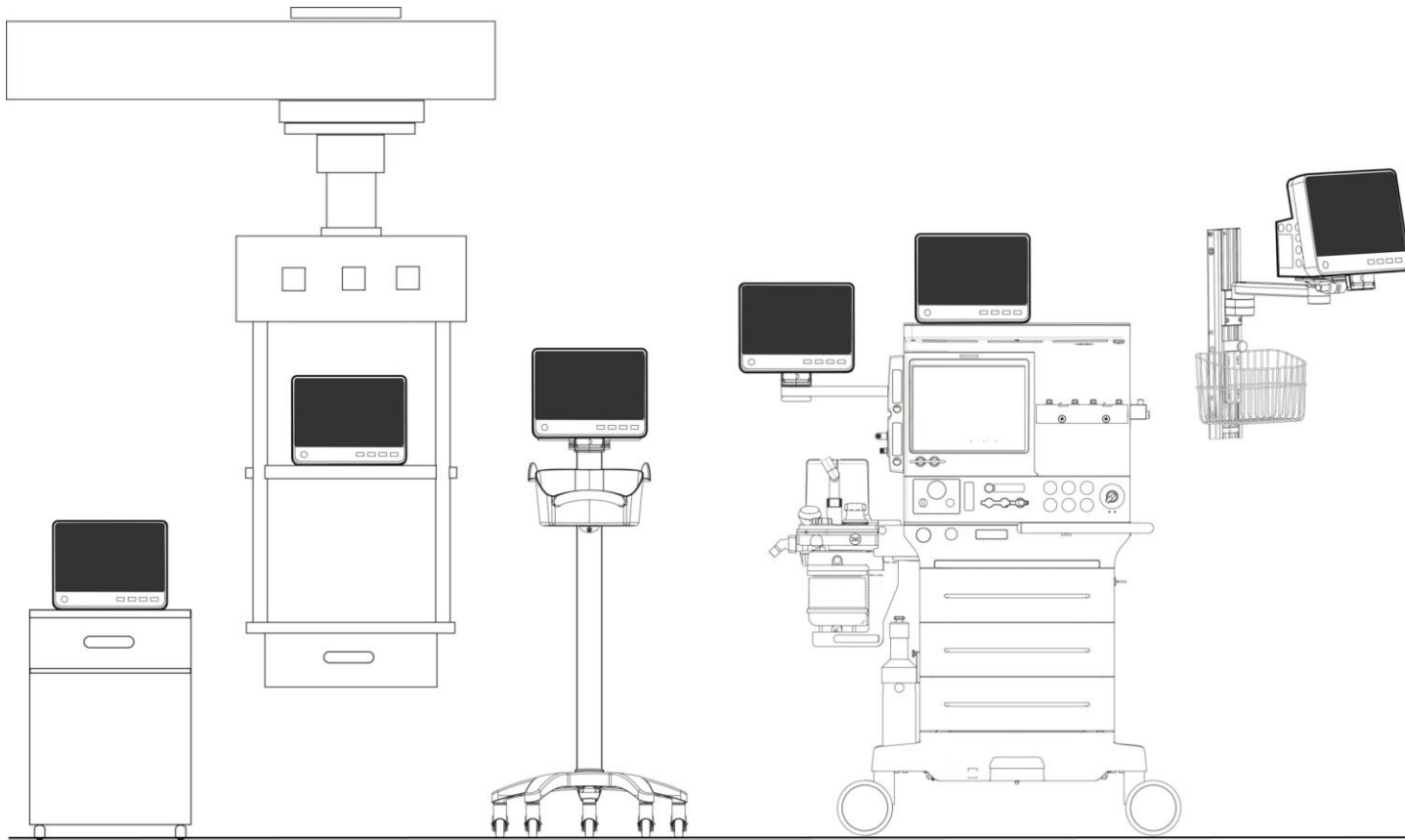
Compatible with BeneVision modules



Streamlined design



# Flexible Mounting Solutions



Make monitoring easy and distinct in various clinical scenarios

Feel the simplicity

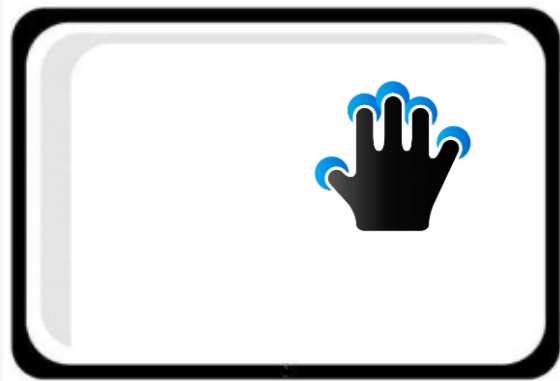
with ePM™ series





# Intuitive Operation Experience

Capacitive screen & gesture control



Screen switch



Swipe up and down  
(eg. review)



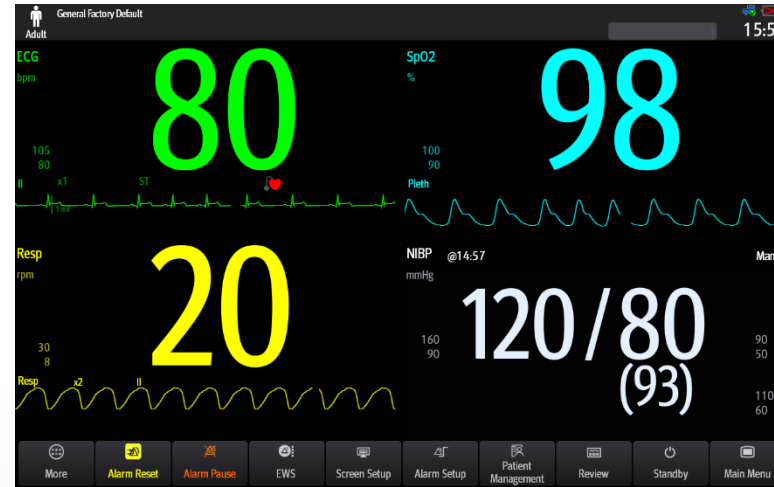
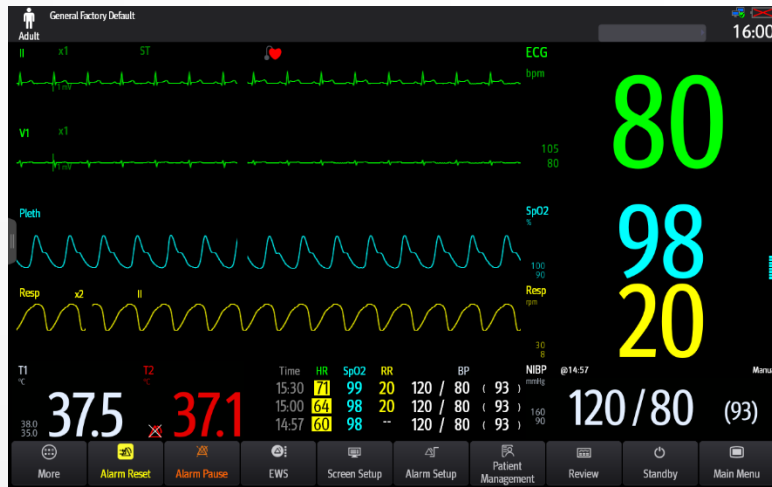
Swipe left and right  
(eg. change function panes)

- Conform to the usual operation habit
- Orientate at your fingertip



# Intuitive Operation Experience

## Flat UI Design

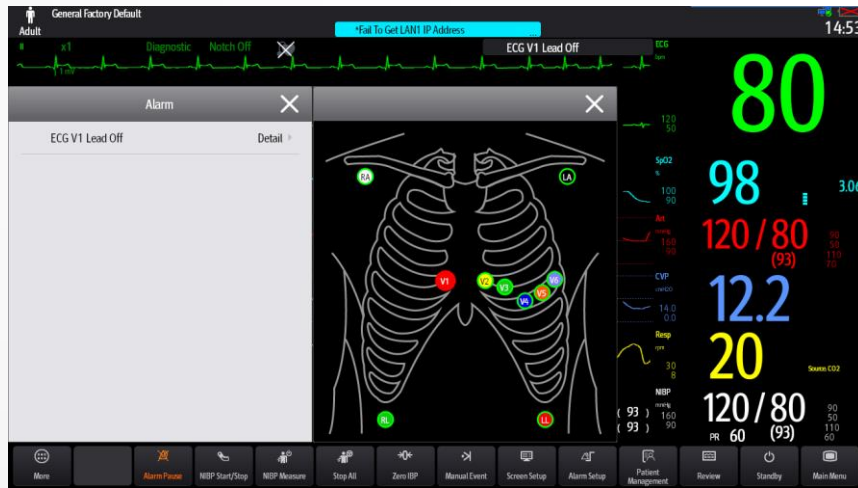


- Unified with N series, operating without learning
- Showing what you want, less need for operation
- Access to the most common functions in **2** steps or fewer

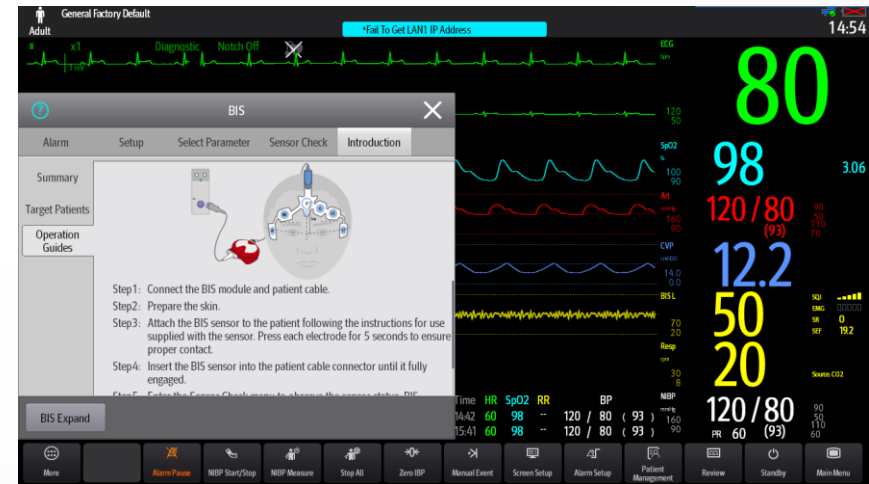


# Intuitive Operation Experience

## Visual Tools



AlarmSight



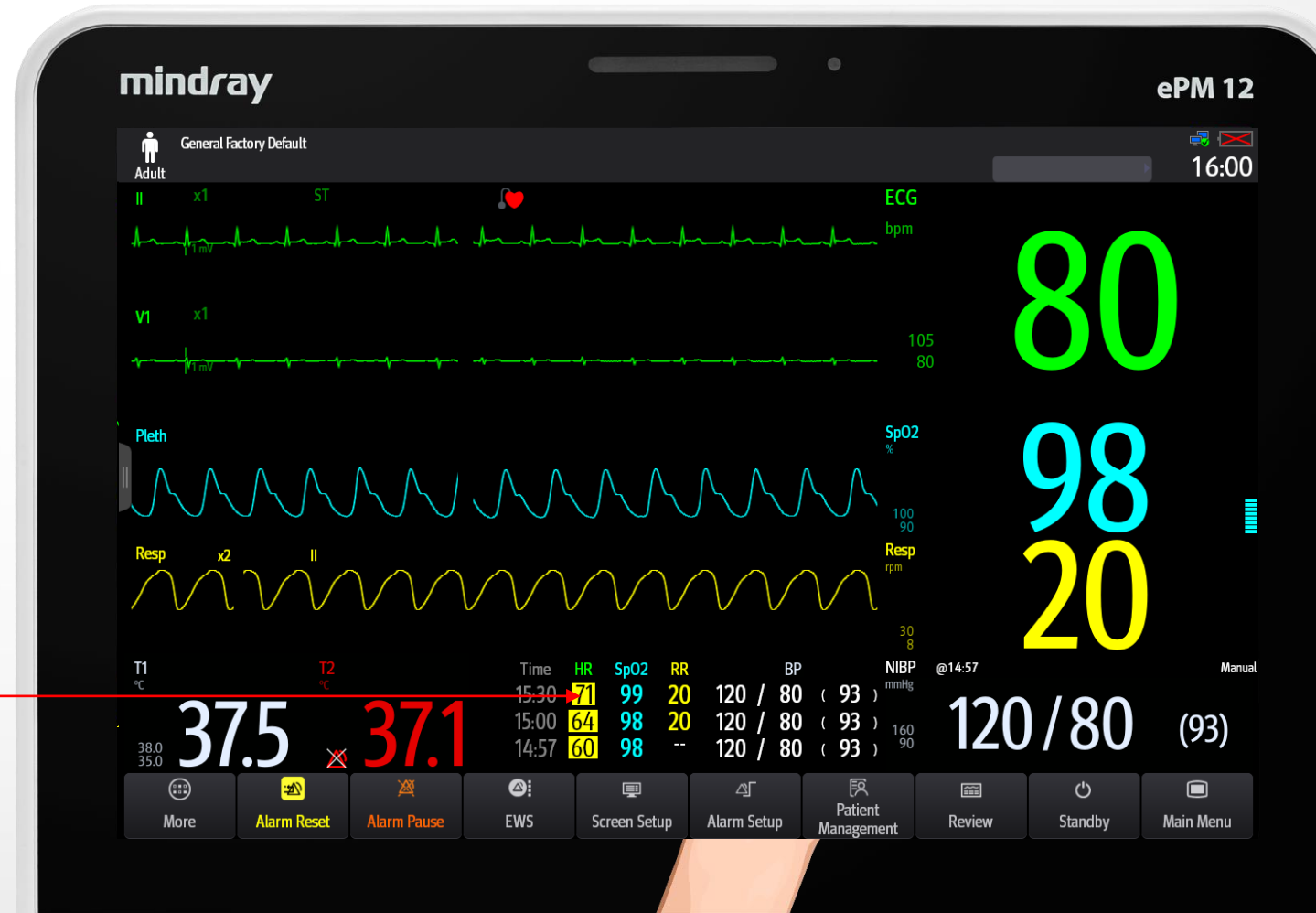
Online Guide



# Smooth Workflow

## Normal screen

- Show what you want, less need for operation
- Highlight abnormal reading in parameter list



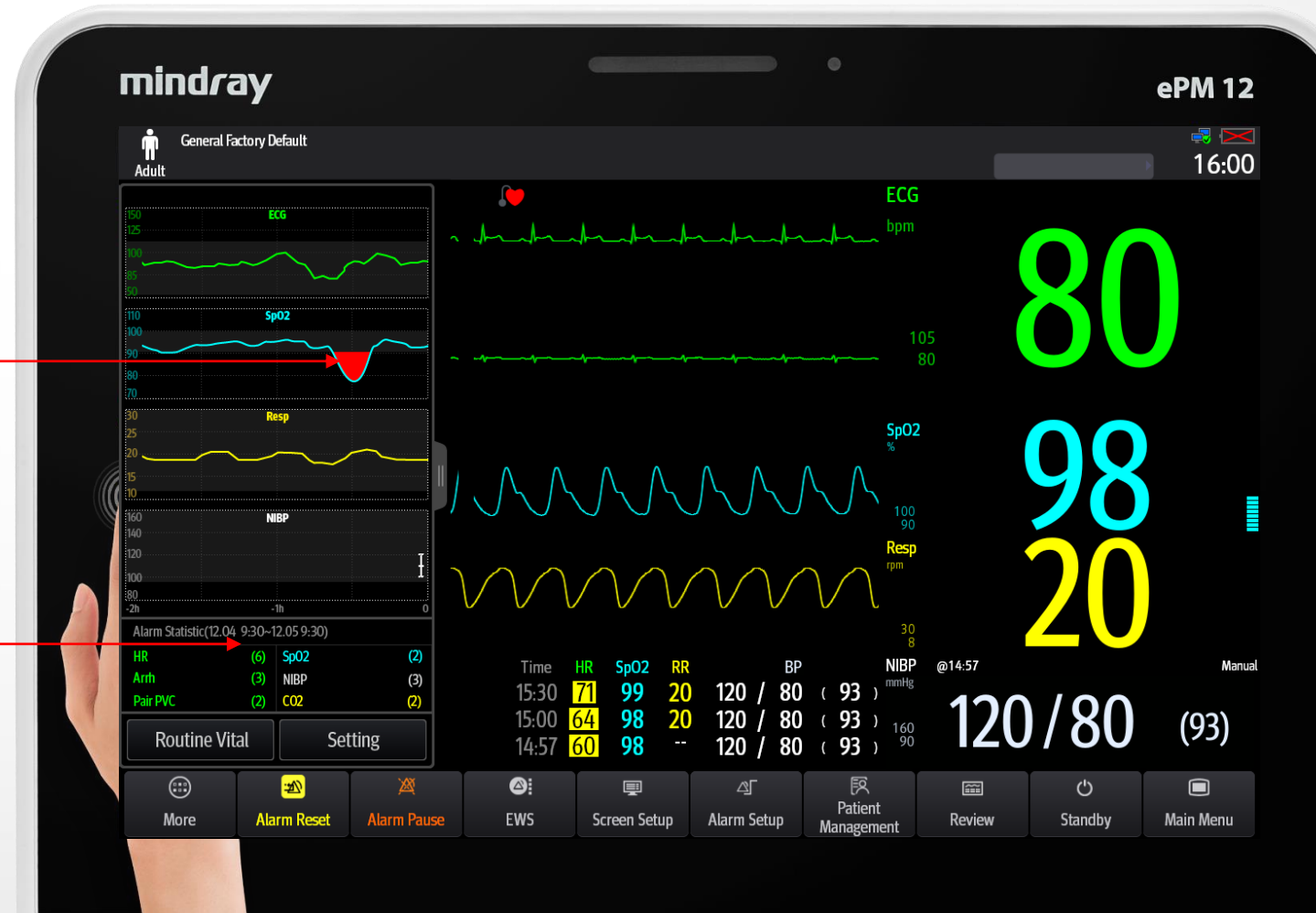




# Smooth Workflow

## Mini trend pane

- Help quickly review patient trends during ward rounds or hand-over
- Highlight abnormal reading on trend waveform
- Arr.alarm and parameter alarms summary

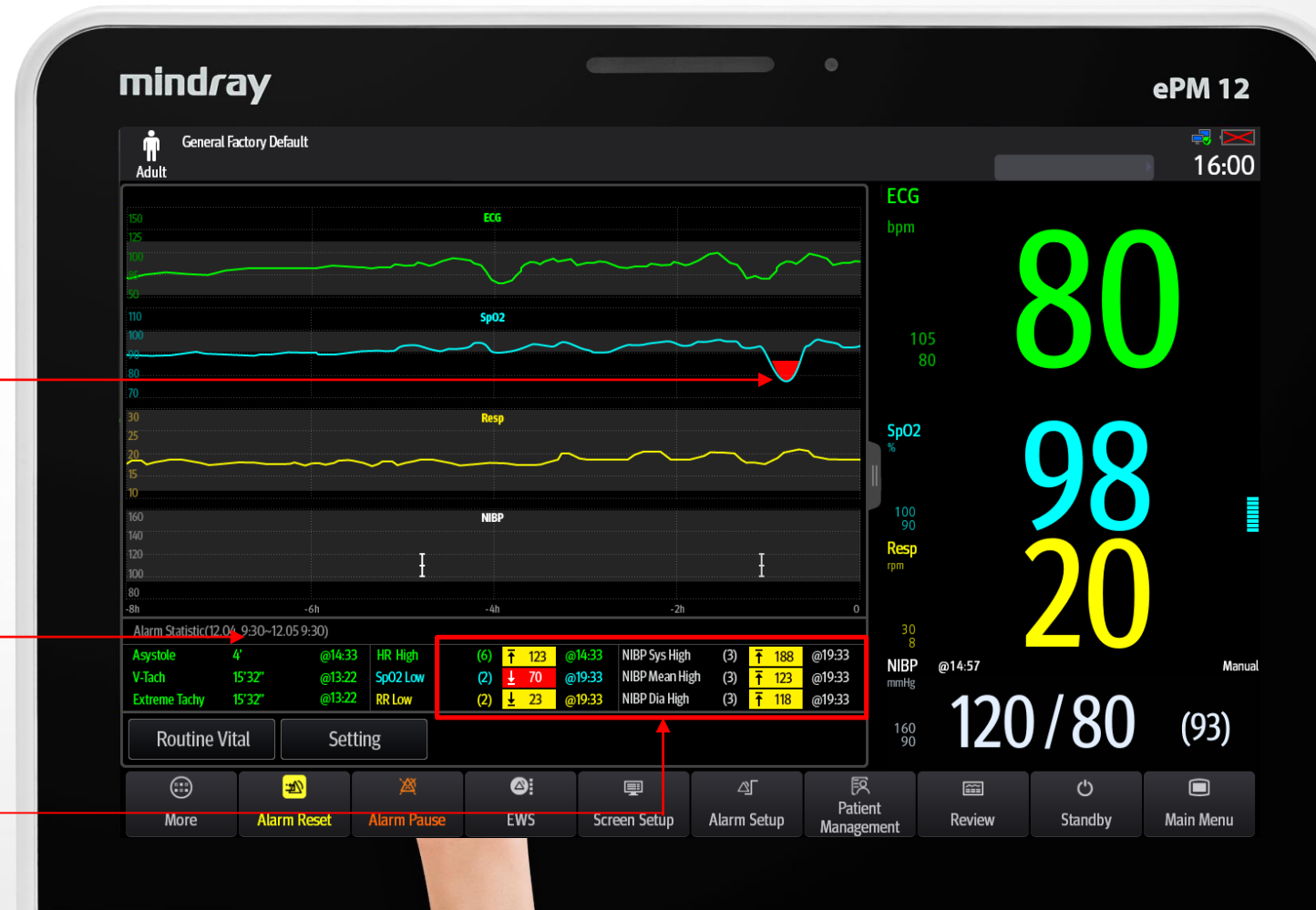




# Smooth Workflow

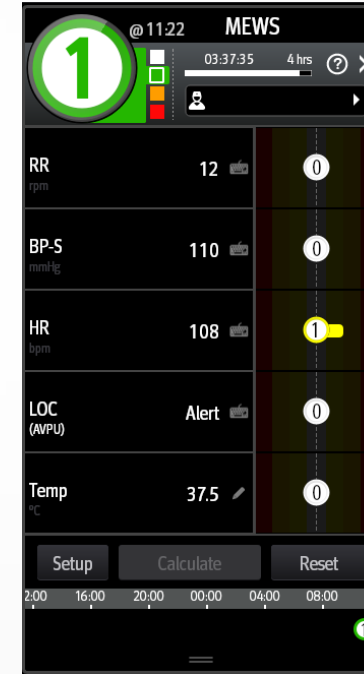
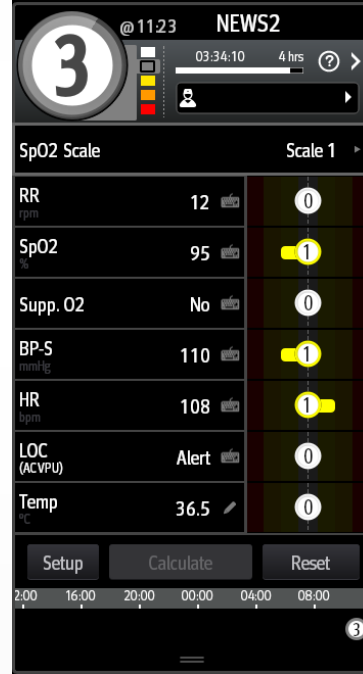
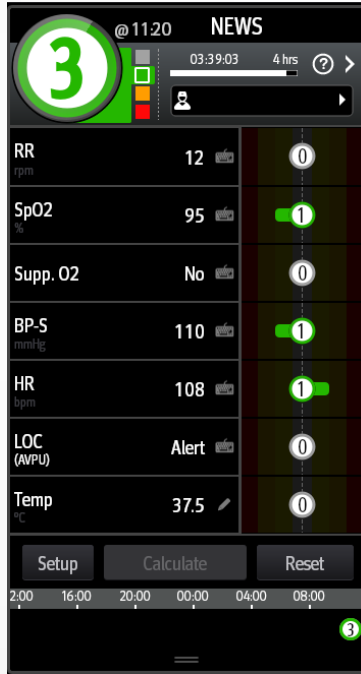
## Long trend pane

- Provide comprehensive trends to see any changes
- Highlight abnormal reading on trend waveform
- Arr.alarm and parameter alarms summary
- Maximum or minimum reading of alarms, alarm trigger time summary





# Early Warning Scores



Pre-configured EWS protocols

Customizable protocols



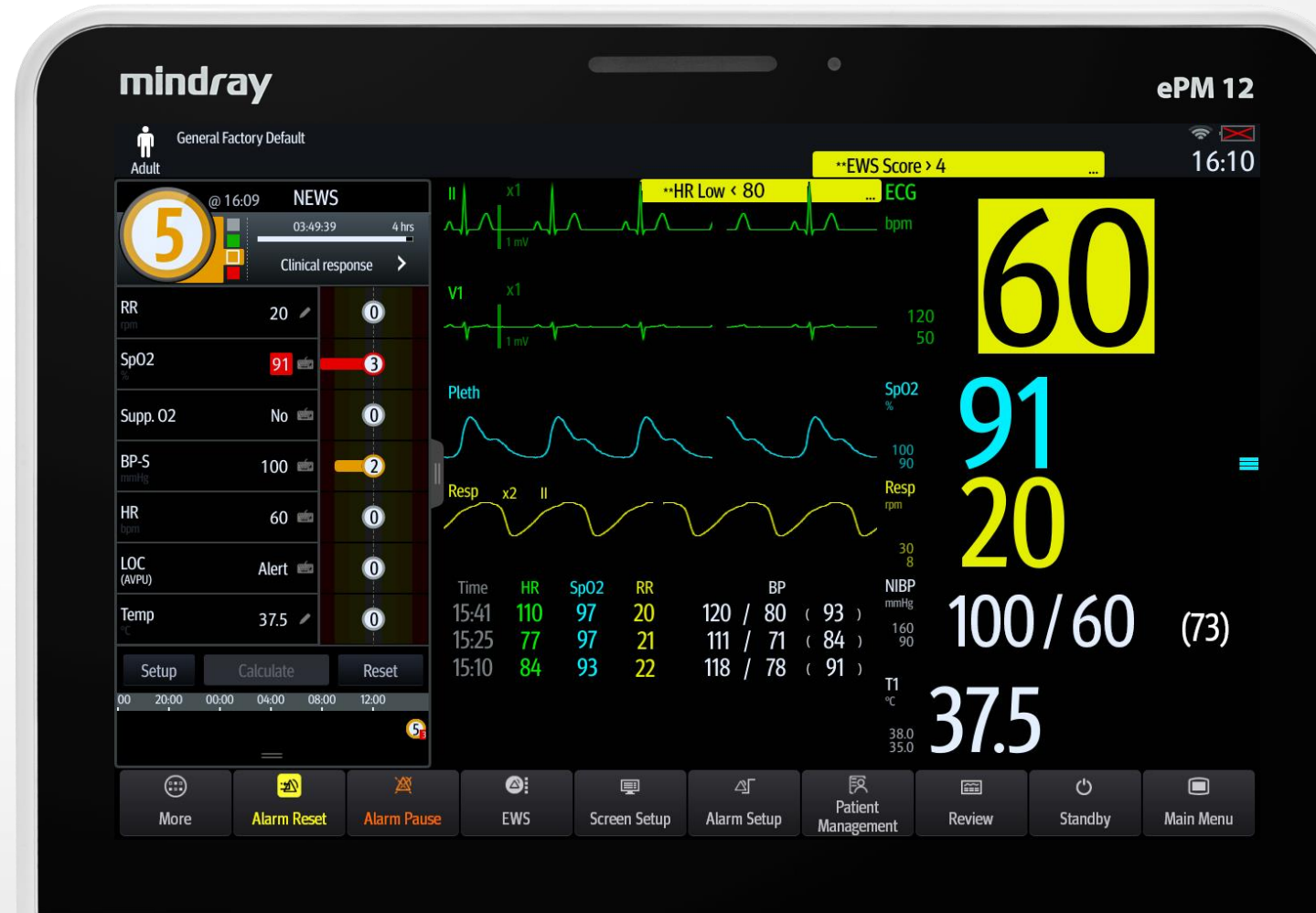
# Early Warning Scores

Dynamically EWS scoring

- Detect changes in patient status during the interval of two scores

EWS update messages

- Remind caregivers when the score is refreshed automatically





# Early Warning Scores

- Customized score protocol by a score configuration tool in PC
- Optional parameters: Blood Sugar, Urine Output, Catheter, Pain Score, Pain, EtCO2, FiO2, Air Way and Custom.
- For one score protocol, up to 12 kinds of parameters can be selected.
- Support create 10 custom parameter options.
- Export score protocol to USB drive and import to patient monitors

Parameters	Unit	3	2	1	0	1	2	3
RR	rpm	≤8		9-11	12-20		21-24	≥25
SpO2	%	≤91	92-93	94-95	96-100			
Supp. O2					• No		• Yes	
Temp	°C	≤35.0		35.1-36.0	36.1-38.0	38.1-39.0	39.1-100.0	
BP S	mmHg	≤90	91-100	101-110	111-219			≥220
HR	bpm	≤40		41-50	51-90	91-110	111-130	≥131
LOC(AVPU)					• Alert			• Reacting to Voice • Reacting to Pain • Unresponsive

Color	Scoring Section	Parameter c	Clinical response
	0	0	<ul style="list-style-type: none"><li>Continue routine NEWS monitoring with every set of observations.</li><li>Minimum 12 hourly.</li></ul>
	1	4	<ul style="list-style-type: none"><li>Inform registered nurse who must assess the patient.</li><li>Registered nurse to decide if increased frequency of monitoring and/or escalation of clinical care is required.</li><li>Minimum 4-6 hourly.</li></ul>
	5	6	<ul style="list-style-type: none"><li>Registered nurse to urgently inform the medical team caring for the patient.</li><li>Urgent assessment by a clinician with core competencies to assess acutely ill patients.</li><li>Clinical care in an environment with monitoring facilities.</li><li>Increased frequency of a minimum of 1 hourly.</li></ul>
	7	20	<ul style="list-style-type: none"><li>Registered nurse to immediately inform the medical team caring for the patient - this should be at least at Specialist Registrar level.</li><li>Emergency assessment by a clinical team with critical care competencies, which also includes a practitioner/s with advanced airway skills.</li><li>Consider transfer of Clinical care to a level 2 or 3 care facility, i.e. higher dependency or ITU.</li><li>Continuous monitoring of vital signs.</li></ul>



# Clinical Applications in **NICU**

## Clinical challenge 1:

Identify neonatal apnea of prematurity (AOP event)  
and distinguish from periodic breathing

Apnea of prematurity	Apnea > 20 s <b>or</b> Apnea > 10s , HR < 100bpm <b>or</b> SpO2<80%
Periodic breathing	Stoppage of breathing < 10 s <b>and</b> no relevant bradycardia and desaturation



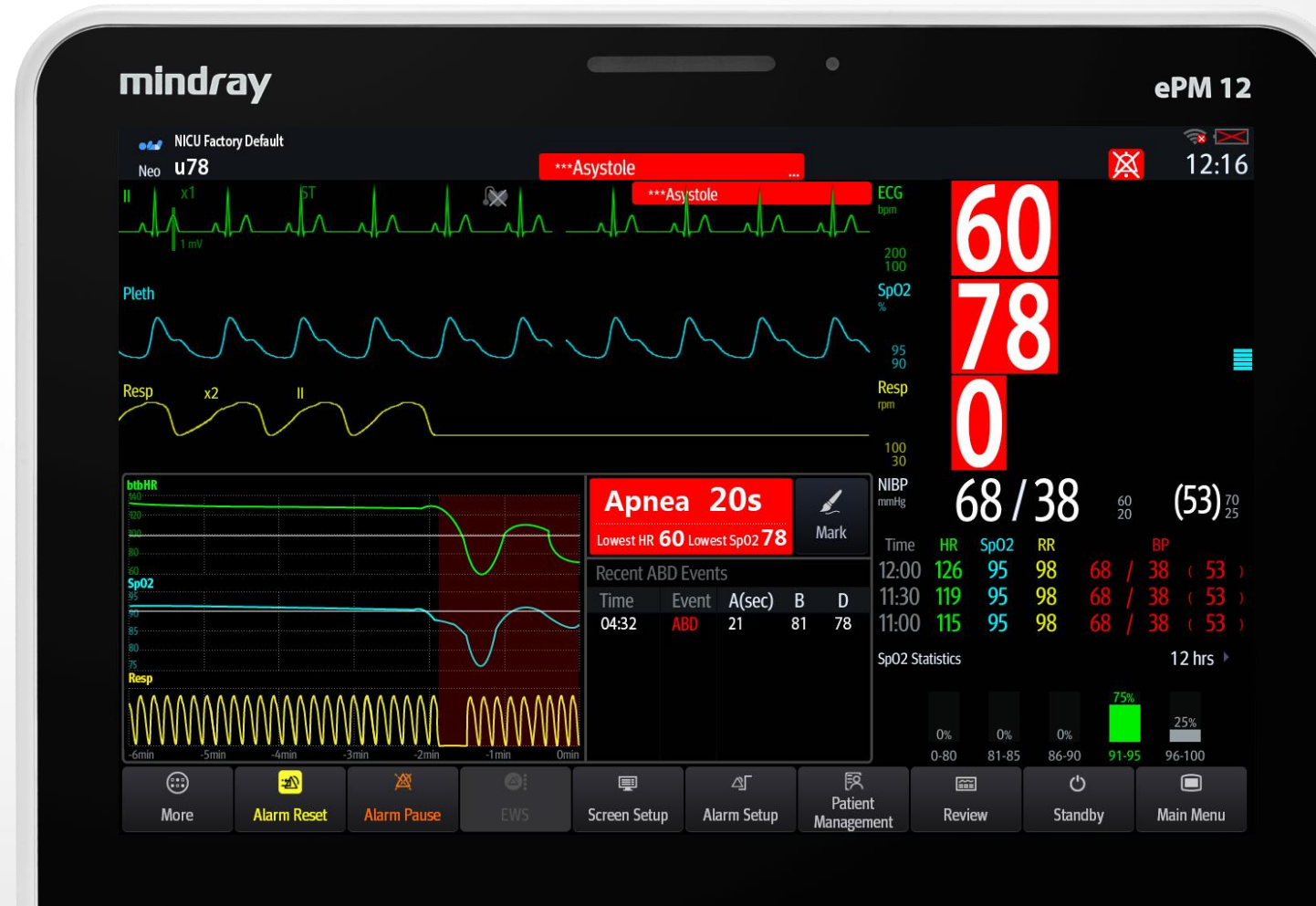
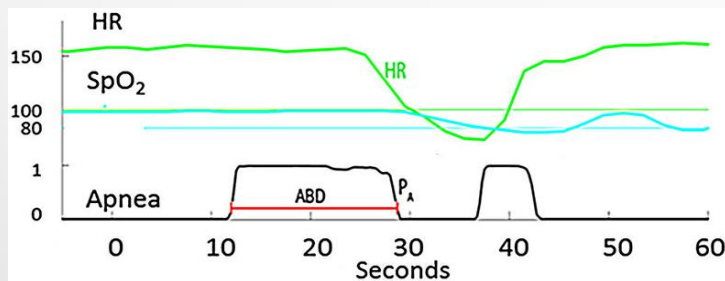


# Clinical Applications in NICU

## OxyCRG screen

- Help to effectively identify apnea and remind caregivers to notice the event timely

- A: Apnea (Resp no reading or waveform)
- B: Bradycardia (HR<100)
- D: Desaturation





# Clinical Applications in **NICU**

## OxyCRG screen

- Help doctor to quickly determine the cause
- Complete event records help to make overall evaluation



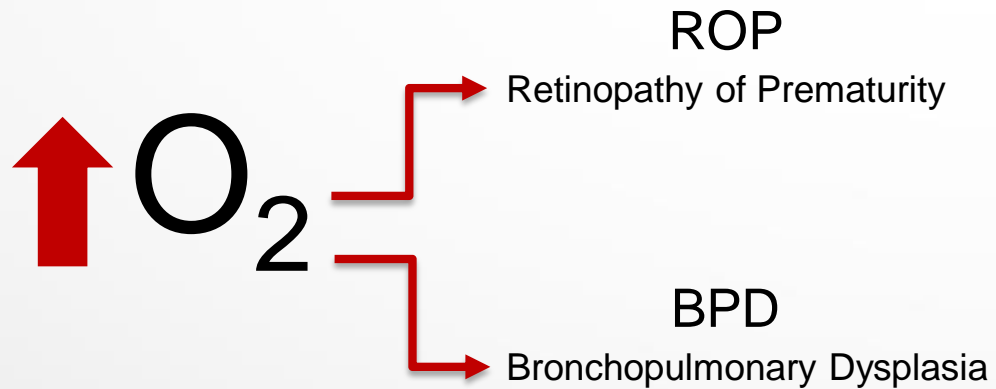




# Clinical Applications in **NICU**

## Clinical challenge 2:

The risk of excessive oxygen during oxygen therapy

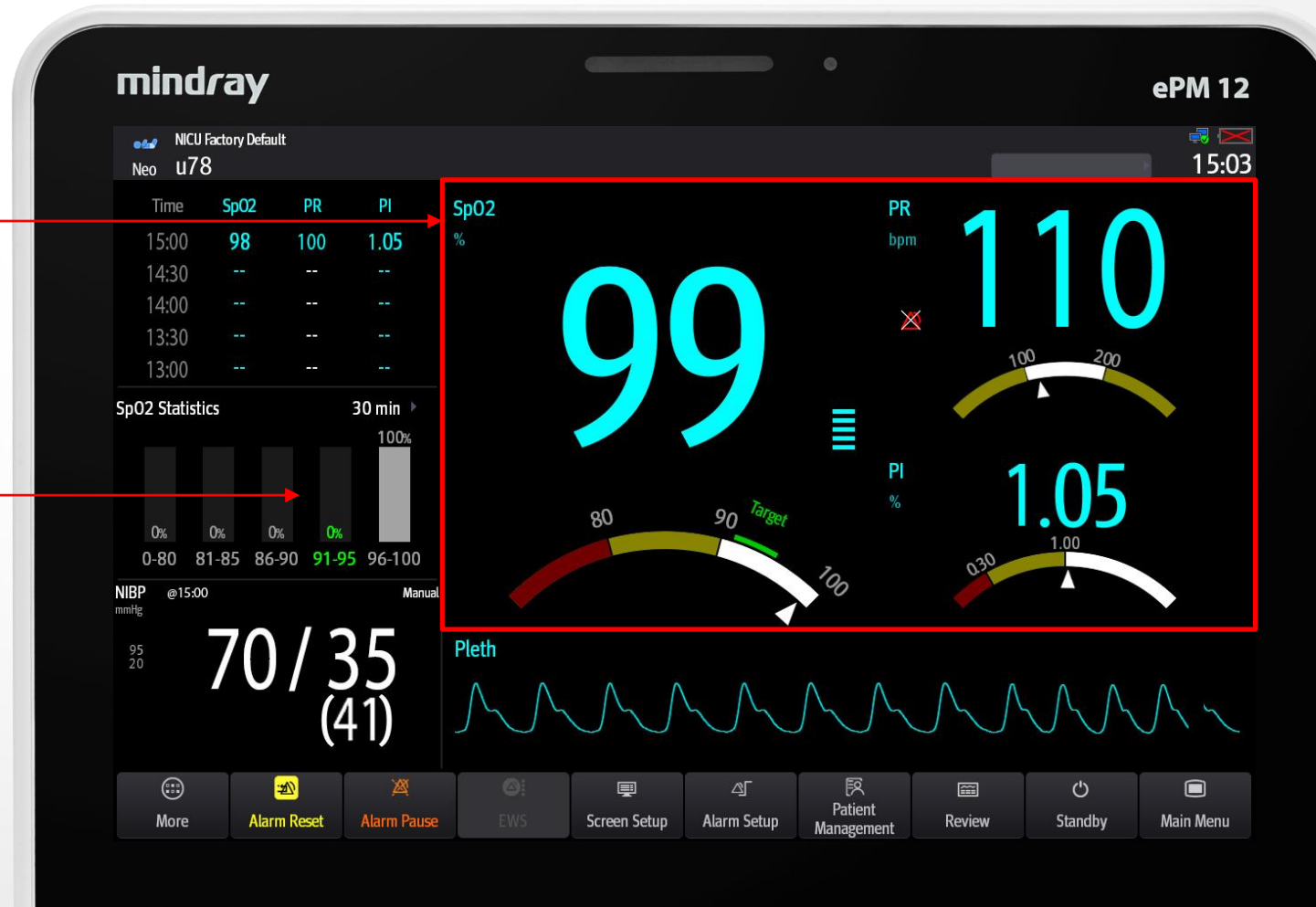




# Clinical Applications in NICU

## SpO<sub>2</sub> screen

- SpO<sub>2</sub> dashboard, visualized oxygen therapy goal management
- 24 hours of SpO<sub>2</sub> statistics helps caregivers to evaluate the treatment effects





# Clinical Assistive Tools

## ST Graphic

- Help to quickly assess ST segment elevations and depressions

## Glasgow Coma Scale (GCS)

- Record the consciousness level of patients for initial as well as subsequent assessments





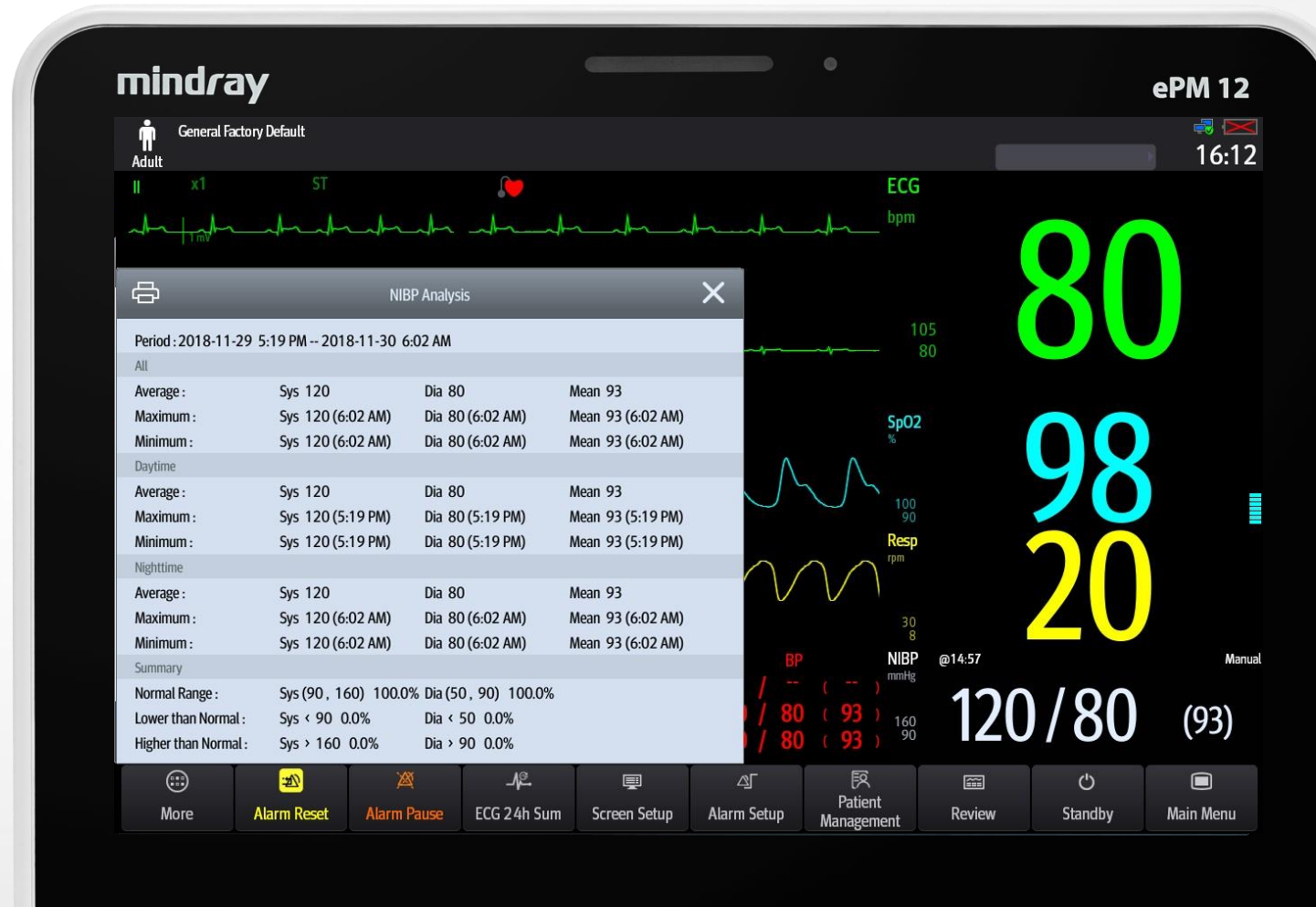
# Clinical Assistive Tools

## 24 Hours ECG Summary

- Summarize key information of HR, ST, QT & arrhythmia alarms by 1 step operation

## NIBP Analysis

- Summarize key information in 24 hours of trends by 1 step operation

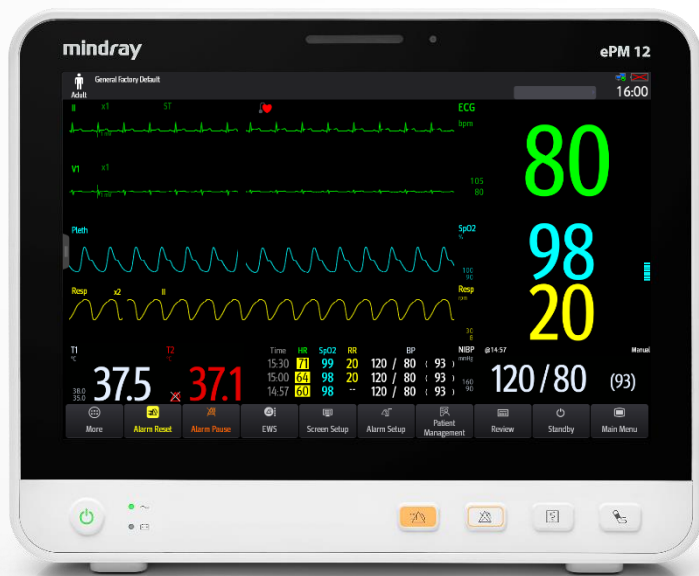




For awake, restless or irritable patients,  
**reducing measurement interference** can  
be a challenge



## Reliable Measurement



Platinum platform

Multi-lead ECG algorithm

ST Graphic™

Lower quality requirements for ECG electrodes

Mindray SpO<sub>2</sub> algorithm

Anti-low perfusion & anti-motion

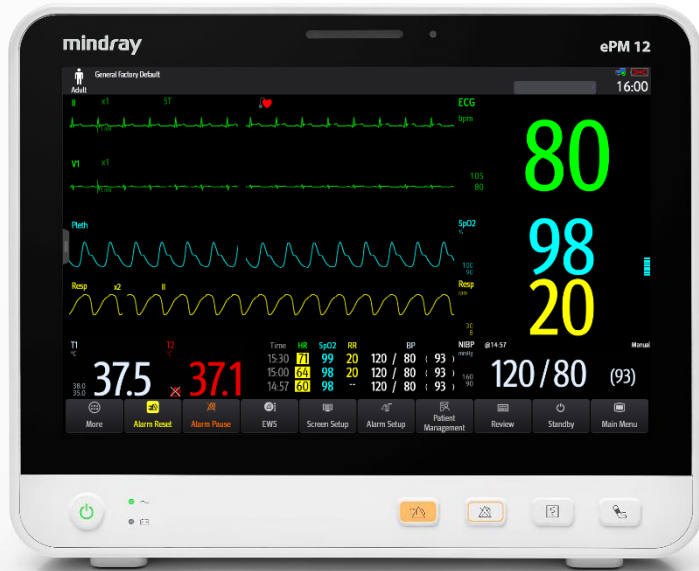
NHS and BHS validated NIBP algorithm

Fast, accurate, anti-motion

The parameter platform same as N series

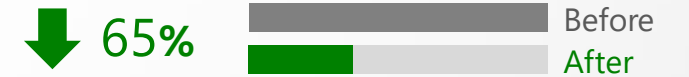


# Reliable Measurement



The parameter platform same as N series

False lethal arrhythmia alarm



False arrhythmia alarm



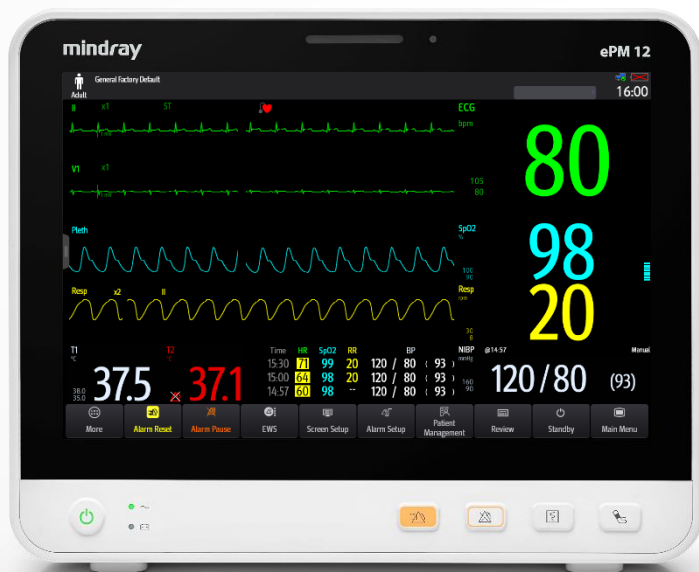
Accuracy of HR & PR



Note: The results are based on an evaluation by Mindray multi-parameter fusion database



# Reliable Measurement



3/5/12-lead ECG, Resp, NIBP, Minday/Nellcor SpO<sub>2</sub>, 2-ch Temp

Sidestream / Microstream / Mainstream CO<sub>2</sub>, C.O.

2-ch IBP

4-ch IBP, BIS/BISx4, AG





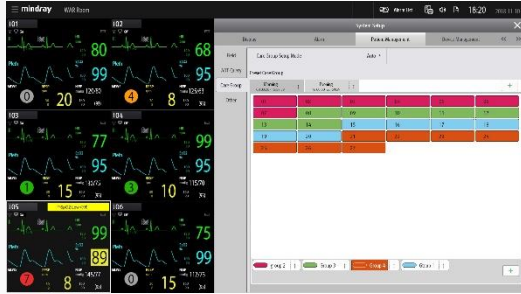
## Valuable & accessible IT solutions

Patient surveillance - specifically designed for sub-acute unit





# Valuable & accessible IT solutions



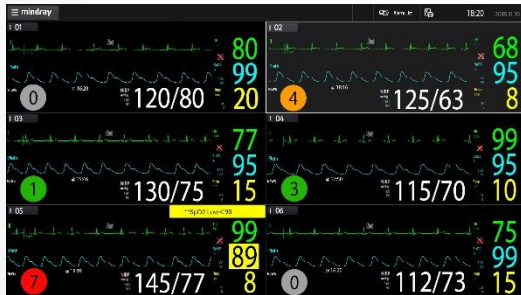
Care group



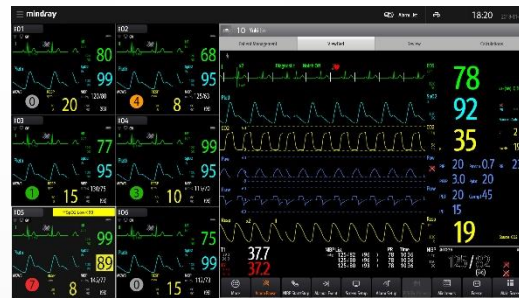
Data review



Patient summary



EWS dashboard



Patient window



Patient window with EWS

Multi-view based on workflow



## Valuable & accessible IT solutions

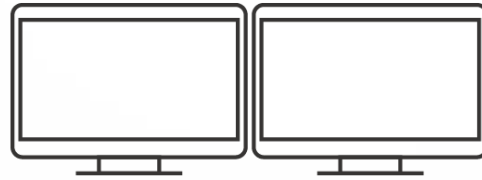
### EWS dashboard on CMS

- Intuitive EWS score reflects patient status, helping caregivers to recognize the risk of deterioration





# Valuable & accessible IT solutions



## MobileViewer

Only the events of your patients will be sent to your phone

---

## Patient sectors

Identify different colors for each care group, finding your patients quickly

---

## View other bed

Make the Patient Monitor in the same group view each other

## Care Group Management

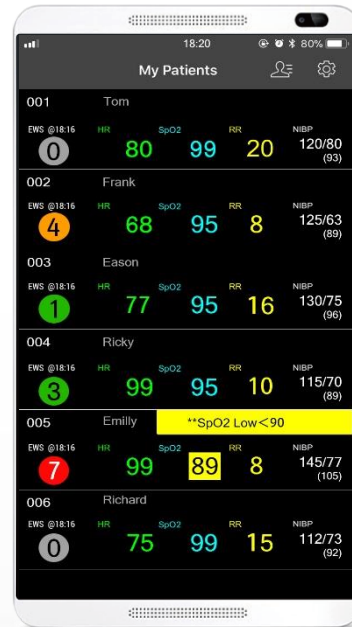
- Reduce information interference to improve clinical efficiency
- One preset, fully automatic management



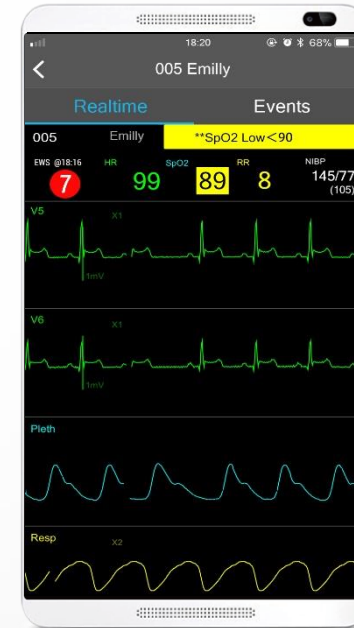
# Valuable & accessible IT solutions

## Mobile Care

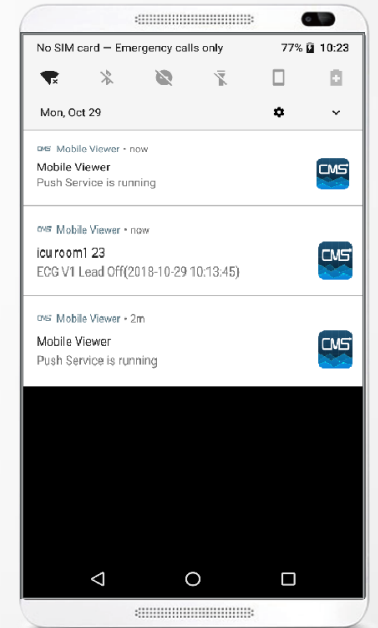
- Optimize the workflow
- Access to patient data anytime, anywhere via Mobile Viewer
- Audible and visible event reminder for serious condition



Multi-patient view



Patient detail



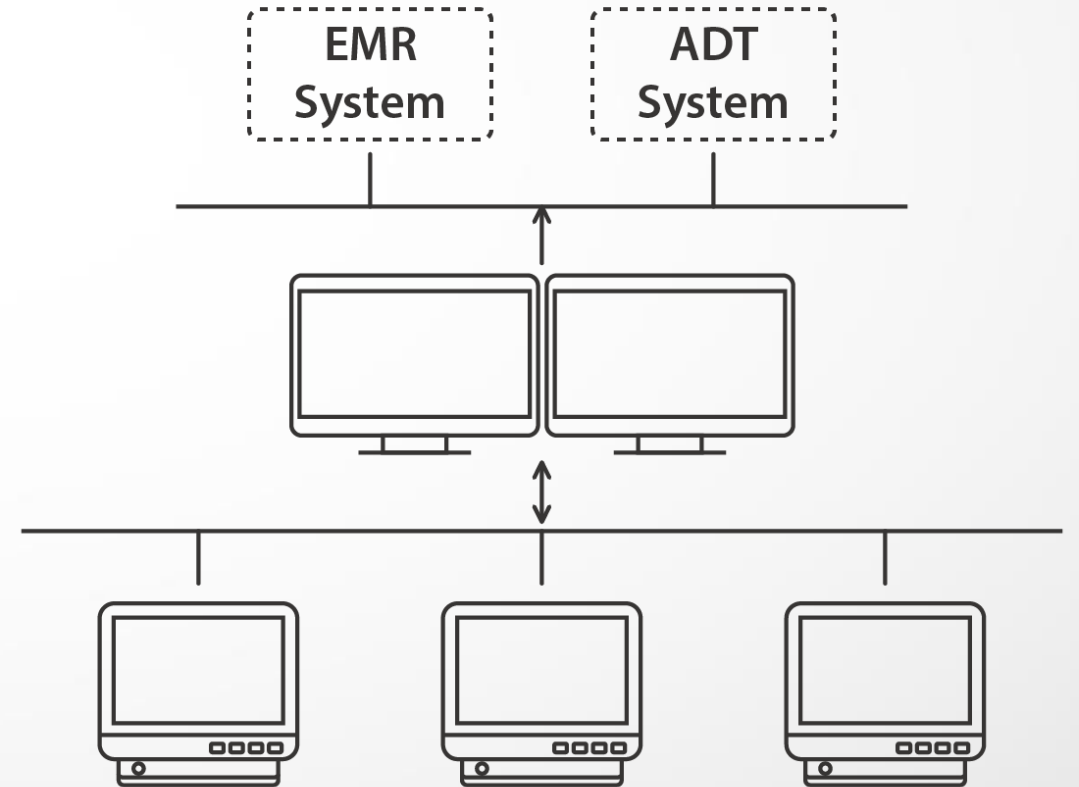
Event reminder



## Valuable & accessible IT solutions

### EMR Connection

- Connects to the electronics medical record (ERM) automatically via HL7 output
- One central station can connect with multi-information system simultaneously
- Supports high-precision waveform output, allowing information systems to expand more applications

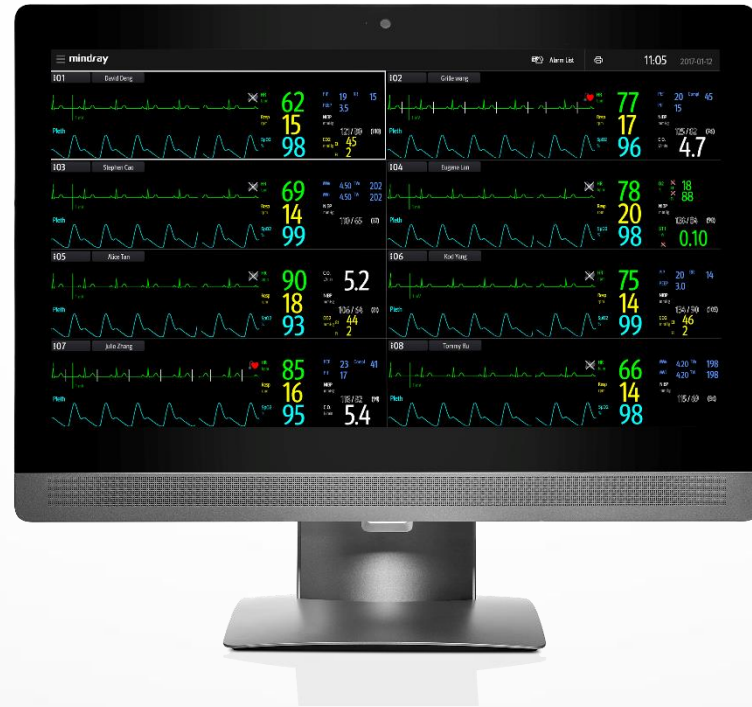




# Valuable & accessible IT solutions



Central Station



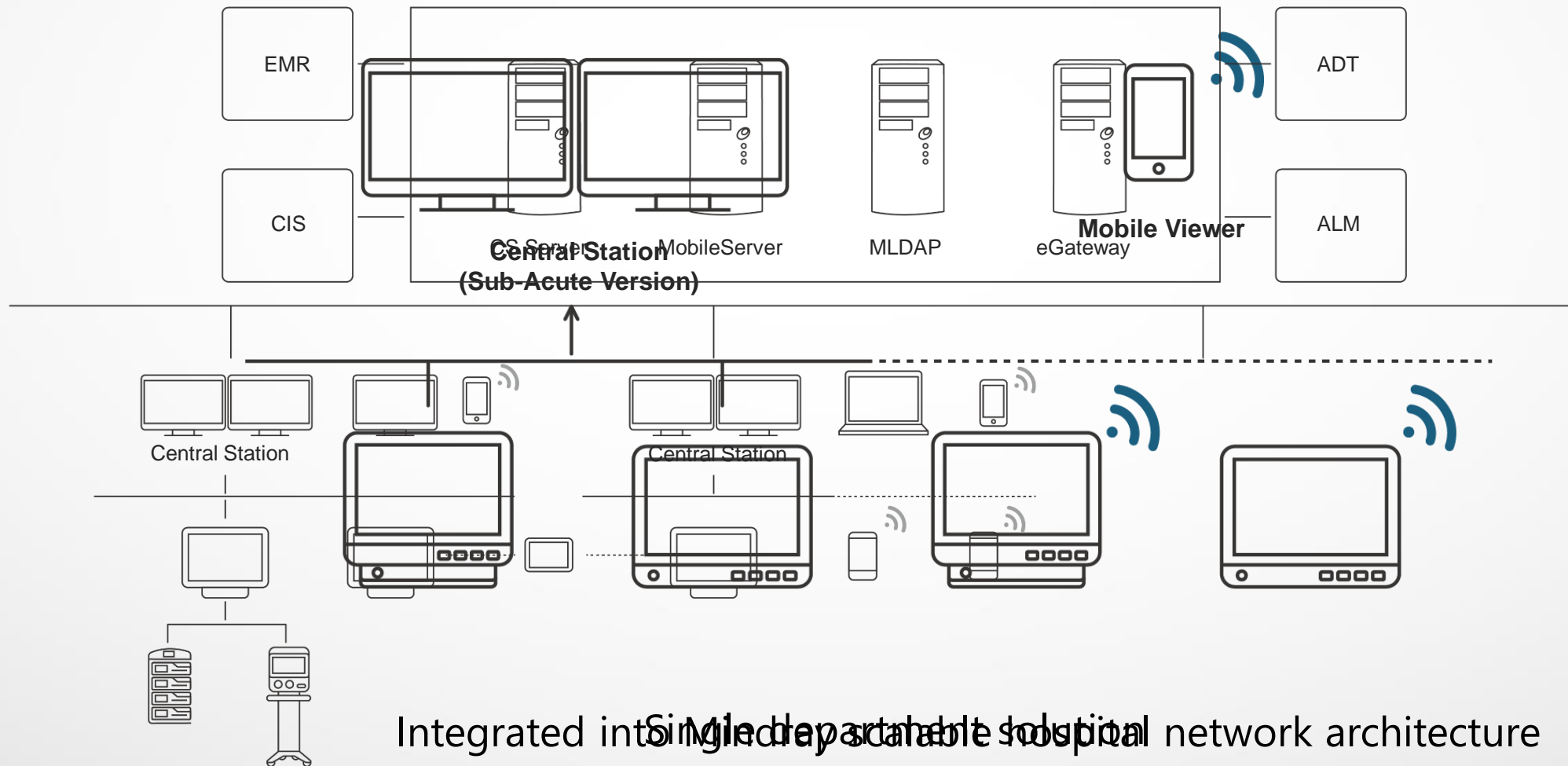
MobileServer

## All in One Central Station

- All features(CentralStation/Mobile Service/HL7 Service ) in one host
- Help to reduce host investment, space occupation, connection cables and easy deployment.



# Valuable & accessible IT solutions





# The Evolution of Simplicity

55+ Patents pending



ePM™ series

**mindray**  
healthcare within reach