

# ALERTWATCH OB

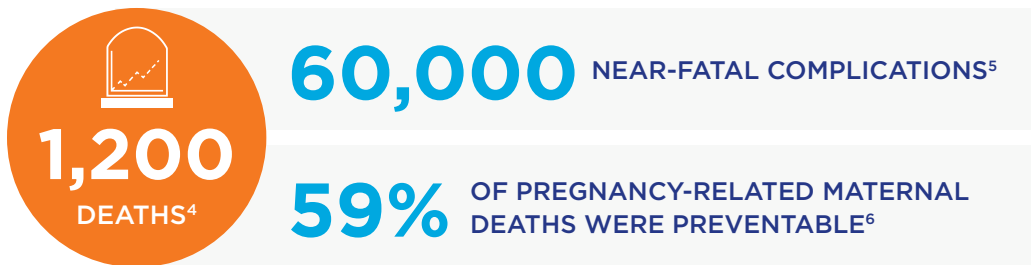
## A Failure to Recognize Maternal Risk is Putting U.S. Mothers in Danger

While U.S. medical innovation is advancing, so is its rate of pregnancy-related maternal deaths.<sup>1</sup> Most of these deaths are preventable, as are the majority of injuries mothers experience before, during and after delivery.<sup>2</sup>

### PREVENTABLE MATERNAL DEATHS & INJURIES ARE RISING

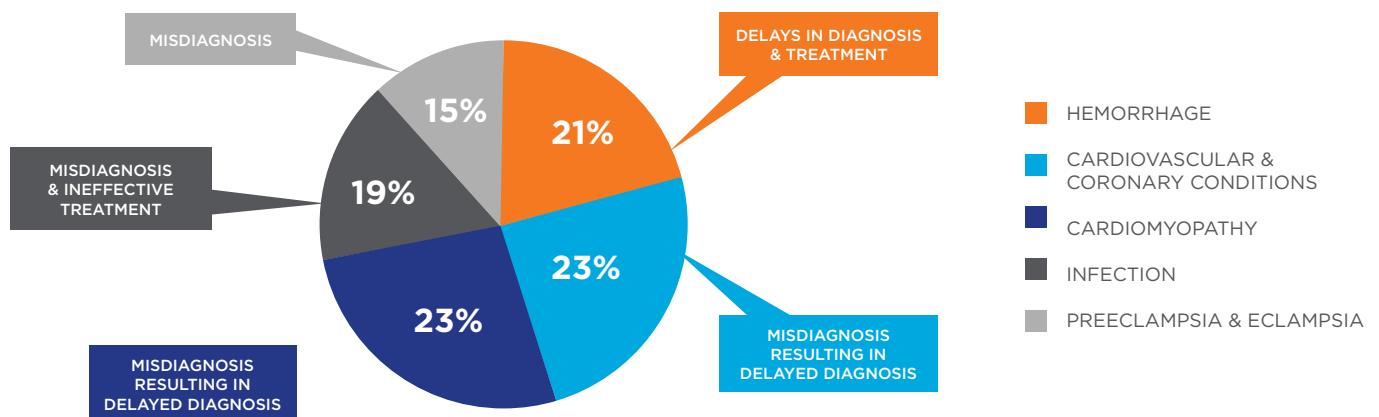
A leading cause of these deaths? Failure to recognize and respond to early signs of deterioration.<sup>3</sup>

#### 'FAILURE TO RECOGNIZE' IS A LEADING CAUSE OF POOR OUTCOMES<sup>4</sup>



To reduce these alarming statistics, it's essential that Labor & Delivery (L&D) units adopt early warning scoring and automated risk assessment applications proven to enhance situational awareness and improve outcomes.

#### LEADING CAUSES OF PREGNANCY-RELATED DEATH



<sup>1</sup> GBD 2015 Maternal Mortality Collaborators. Global, regional, and national levels of maternal mortality, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet. 2016;388(10053):1775-1812.

<sup>2</sup> CDC, CDC Foundation. Report from Maternal Mortality Review Committees: A View into Their Critical Role. MMRIA. January 2017.

<sup>3</sup> Main EK, McCain CL, Morton CH, Holtby S, Lawton ES. Pregnancy-related mortality in California: causes, characteristics, and improvement opportunities. Obstet Gynecol. 2015 Apr;125(4):938-47.

<sup>4</sup> Main EK, McCain CL, Morton CH, Holtby S, Lawton ES. Pregnancy-related mortality in California: causes, characteristics, and improvement opportunities. Obstet Gynecol. 2015 Apr;125(4):938-47.

<sup>5</sup> Trends in maternal mortality: 1990 to 2013. Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. Geneva: World Health Organization; 2014.

<sup>6</sup> CDC, CDC Foundation. Report from Maternal Mortality Review Committees: A View into Their Critical Role. MMRIA. January 2017

A VITAL SAFETY NET TO HELP PROTECT MOTHERS AT RISK

The world’s first maternal monitoring and early warning solution, AlertWatch:OB integrates and analyzes over 200 maternal data elements to provide actionable insight at-a-glance for the entire L&D unit. This vital technology provides comprehensive, always-on surveillance to help you recognize and respond to emerging maternal issues.



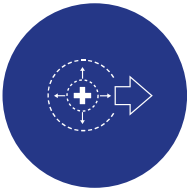
HELPS CREATE A SAFER STANDARD OF L&D CARE

- Identifies early signs of patient decline
- Displays all necessary information in a single dashboard, including vitals, trends, and labs
- Offers context at-a-glance with a color-coded organ view of each mother
- Helps teams make fast, informed decisions



REDUCES ALARM FATIGUE AND IMPROVES SITUATIONAL AWARENESS

- Prioritizes alerts through exception-based alarms to quickly identify patients with worsening conditions
- Guides actions with role-specific escalation pathways
- Delivers continuous data analysis and near real-time patient status



IMPROVES HANDOFF AND CASE MANAGEMENT WORKFLOWS

- Displays all rooms on one screen, to reduce communication gaps during handoffs
- Provides a handoff specific view for all L&D patients
- Access anytime, anywhere, on any internet-connected device

MULTI-PATIENT DASHBOARD

Census view shows patients color-coded by stage, with icons indicating alerts and comorbidities.

DemoStatusInstructions and HelpTremper, KevinLogout

1TRBMI 28 G6P5GA 38+6	2TRBMI 30 G3P0GA 36+0	3TRBMI ? G3P1GA 36+5	4APBMI 30 G1P0GA 33+5	5APBMI 22 G2P1GA 23+4	6APBMI 29 G10P5GA 31+2
7APBMI 34 G4P1GA 29+5	8APBMI 32 G3P0GA 25+2	9L-9 cmBMI 27 G1P0GA 41+3	10L-5 cmBMI 30 G1P0GA 40+1	11L-6 cmBMI 31 G1P0GA 39+4	12L-3 cmBMI 38 G1P0GA 38+1
13L-6 cmBMI 31 G1P0GA 39+4	14L-10 cmBMI 37 G2P0GA 41+1	15PP/FLBMI 40 G1P0	16PP/CSBMI 30 G2P1	17PPBMI 25 G3P1	18PPBMI 30 G4P2
19PP/CSBMI 27 G4P1	20PP/CSBMI 29 G6P1	21PP/CSBMI ? G1P0	22PP/CSBMI 37 G2P2	23PP/CSBMI 29 G5P4	24PP/CSBMI 42 G3P3
31PP-CDBMI 26 G2P2	32PPBMI 49 G2P2	25PPRBMI 30 G4P3	26PPRBMI 29 G1P1	PA-1TRBMI ? G4P0GA 13+4	PA-2APBMI 20 G7P4GA 19+6
PA-3PP/CSBMI 48 G2P2	OR-1PP/CSBMI 25 G4P1				

Alert

Hemorrhage

Heart Disease

Refuses Blood

IV Size

Care Note

Spine/Coagulation

Paging Limits Changed

TriageAntepartumLaborStage 2 or 3PostpartumReadmitFetal Loss

SINGLE-PATIENT DASHBOARD

Patient view offers a detailed overview of the mother’s information, organs and vitals, and active alerts.

Summary of maternal status (info panel on left)

Labs summary

Epidural status

Active physiological & quality of care alerts

Infusion status

Out-of-range values (color coded)

Smith14, Sally  
MRN 164715135  
Room 14  
Age 32  
LOS 2 days  
Stage L

G/P G2P0  
GA 41+1  
Cervix 10/100/1 [2hr]  
SROM meconium [1hr]  
GBS Pos  
Pain Score 0 [3hr]  
IV Access #18 [1d]  
Epidural Yes [20hr]  
Sensory T9-T7  
Sacral T9-T7  
Wt [BMI] 96 [37]  
Mallampati II [18hr]

EBL=0

Active Alerts

High BP=147/113. HR=114.

CAUTION: Check medical record before making clinical decisions.

InstructionsEmergency Refs

UPCr 0.8 [13hr]  
INR No [13hr]  
FIB No [14hr]  
Plat 249 [14hr]  
Hct 33 [14hr]  
WBC 17.4 [14hr]  
Glu 80 [13hr]  
Temp 36.8 [1hr]

PulseOx 114 [18m]  
SpO2 96.0% [18m]  
BP Cuff [29m] 147 / 113 MAP=124  
Urine=15 ml/hr

Within Normal LimitsMarginalAbnormalRisk Factors / Comorbidities

Pre-XMultipleH/O CS@EpiduralAbnormal PlacentaHemorrhageHeart RiskRefuses BloodSpine Risk

Hemorrhage risk assessment (outline of uterus)

Coagulation risks (spine)

Cardiac condition/history

Blood pressure & heart rate

Urine output & kidney risks

HANDOFF VIEW

Summary of all active L&D patients to support clinical handoffs between shifts.

Demo

Handoff

Instructions and Help

Tremper, Kevin

Logout

1	Smith1, Sally	131716036	TR	Age 35	Wt [BMI] 74 [28]	G6P5
	Mallampati	GA 38+6			Cx 3/75/-2 [1hr]	
	RISKS Parity > 4					
	ALLERGIES no known allergies					
2	Smith2, Sally	568755679	TR	Age 33	Wt [BMI] 87 [30]	G3P0
	Mallampati	GA 36+0	Plt 226	Hct 35.3	Cx	
	RISKS Other Coagulation Defects, Prior C/S or Uterine Surgery					
	ALLERGIES aloe vera (Rash-Mild) iodinated contrast media (Cough) [Itching, and feeling like she was going to sneeze.] pineapple ("Throat irritation")					
3	Smith3, Sally	781582366	TR	Age 22	Wt [BMI] 79 [0]	G3P1
	Mallampati	GA 36+5	Plt 119	Hct 33.8	Cx	
	RISKS Refuses Blood, Prior C/S or Uterine Surgery, History of Cesarean Section					
	ALLERGIES no known allergies					
4	Smith4, Sally	355845742	AP	Age 28	Wt [BMI] 74 [30]	G1P0
	Mallampati II	GA 33+5	Plt 235	Hct 33.9	Cx 0/0/ [1d]	[20]
	RISKS					
	ALLERGIES orange (Diarrhea) lactose (GI Distress) tomato (solanum lycopersicum) (Diarrhea) [Anything with Tomatoes in it gives her diarrhea ]					
5	Smith5, Sally	833300906	AP	Age 25	Wt [BMI] 52 [22]	G2P1
	Mallampati II	GA 23+4	Plt 269	Hct 26.4	Cx	[20]
	RISKS Snoring, Diabetes Gestational, Glucose, Double Outlet Right Ventricle, TGA, VRE, Hematocrit < 30					
	ALLERGIES erythromycin-sulfisoxazole latex, natural rubber					
6	Smith6, Sally	711742802	AP	Age 43	Wt [BMI] 88 [29]	G10P5
	Mallampati II	GA 31+2	Plt 169	Hct 27.3	Cx	[18]
	RISKS Current Smoker, Snoring, Hepatitis C, Two or more medium risks, Hematocrit < 30, Parity > 4, Prior C/S or Uterine Surgery, History of Cesarean Section					
	ALLERGIES sumatriptan succinate (Anaphylaxis) levofloxacin (Hives)					

## SYSTEM REQUIREMENTS

To run the AlertWatch system, there are a number of technical requirements. These can vary based on the integration plan, size of the site and number of AlertWatch systems that will be run at the site. The requirements listed below are the standard, and some requirements may be more flexible than others. Please review with a Capsule representative before making final decisions.

### HARDWARE

#### WEB SERVER

To host the AlertWatch web system a Windows Web Server is required. This server should have Internet Information Services (IIS) and enough disk space to store the applications, space for system performance logs and a bit of room to grow. This can be, and typically is, a virtual server hosted on an internal server farm. This server will also be the primary remote access point for the Capsule installation and maintenance team to access the system.

COMPONENT	REQUIREMENT	DETAILS
Operating System	Windows Server 2016	
RAM	8 GB	
CPU	4 cores 2.40 GHz	
Disk Space	50 GB free space (~75 GB total)	~25 GB for OS and standard software
IIS Version	IIS 8 and up	
Installed Software	SQL Server Management Studio* Site Standard Web Browser	Pending SQL access via another route AlertWatch supports: Internet Explorer 9+, Chrome, Firefox

\* See Access Section

### SQL SERVER + DATABASE(S)

#### REQUIREMENTS FOR THE CONFIGURATION DATABASE

The AlertWatch system requires a SQL database to store:

- Configuration tables (site configurable alert thresholds, levels for setting colors on display, etc.)
- A log table of system events (user access, alerts triggered, user comments, etc.)
- Dynamic tables to manage the current list of patients and analyzed data
- Stored procedures and functions for accessing the data and saving log entries

Over time, the log table will utilize the most space in the configuration database. The rate of log table growth depends on the size of the site and the daily usage at the site. The truncation scheme of the log table can vary depending on the site's preferences.

COMPONENT	REQUIREMENT
SQL Server Version	SQL Server 2012+
Database Space	20 GB
Growth	Varies based on client's retention policy

#### EXTRACT DATABASE REQUIREMENTS

For systems leveraging web services, an additional database is required to manage web service calls and temporarily store the results of the web services. This database will be referred to as the AlertWatch Extract database. The size of this database will vary depending on the size of the site, the number of web services being accessed and how long data should be stored after patients have left the system. It represents a current set of patients, so the size of this database should be relatively stable over time.

COMPONENT	REQUIREMENT
SQL Server Version	SQL Server 2012
Database Space	40 GB
Growth	Varies based on client's retention policy

### ACCESS

There are several points of access and credentialing required:

1. Capsule installation and maintenance team will need access to the AlertWatch Web Server
2. Capsule installation and maintenance team will need to connect to the SQL databases
3. A service or system account (resource account) should be provisioned so that the AlertWatch web system can access the SQL data in IIS
4. Web service credentials should be granted for accessing the requested web services

It is important to decouple the access in #2 and #3 so that access issues for the Capsule installation and maintenance team do not compromise the availability of the AlertWatch system.

## FOR MORE INFORMATION, CONTACT US

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