International Clinical Analytics Summit

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MITRE Baltimore
2275 Rolling Run Drive, Windsor Mill, MD 21244
The smart EMR platform in ICU. Decision making with AWARE

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One in five Americans **dies in ICU**

**Cost of ICU**

2007: 1% (GDP) and growing*


Modern hospital electronic environment

DOES IT REALLY HELP PATIENTS?
Value of this data?

INFORMATION OVERLOAD or LACK OF INFORMATION
Quiz: Which one is EMR?

Accrual

EMR
Problem: Database centered EMR
1985

Display: 9-inch electroluminescent
Resolution: 512x256 matrix, 2 colors
Weight: 25 pounds
16-bit processor: 12.5 MHz
RAM: 5MB

2015

Display: 9.7-inch LED IPS LCD
Resolution: 2048×1536 16m
Weight: 1 pounds
64-bit, dual core: 1.4 GHz
RAM: 1Gb
Not new?

Health care workers overburdened by information overload

August 20, 1997
Bad for patients

- **Failure to recognize** (resulting in incorrect diagnosis)
- **Failure to rescue** (resulting in late interventions)
- **Waste** (resulting in increased costs)
- **Communication breakdown and process failure**
Right tool for right task
How clinician* works

Data Cloud

Extract High Value Data

Information Packages Constructed

Holistic Picture Emerges

* - and AWARE
Need for Improved EMR

Current EMR’s are incapable of identifying information which the physician considers useful for decision making.
Ambient Warning And Response Evaluation (AWARE) philosophy

1. Identify and present only relevant information (800+ rules)

2. Bundled into discrete packages to facilitate decision making

3. Automated collection and display in real-time
Why is AWARE different?

We take the best and focus on the ICU Patient rather than Department

Epic
Inpatient
Cardiology
Operating Room
Elekta MOSAIQ
Semiens NOVIUS Lab
Laboratory Medicine
Homecare
Homecare Homebase
OpTime
Epic
Digisonics DigiView
2012 Best in KLAS Vendors
AWARE single patient viewer

Current Organ Physiological Status

Status of relevant investigation

Historical data (prior to hospitalization)

Provider Actions/support

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AWARE checklist

1. Apply best evidence care for every patient
2. Generate meaningful clinical notes
3. Collect data for precise reports
Some PROCESS AWARE components

- Addresses time sensitive clinical interventions
- Group level population management
- Pertinent clinical information
- Resource planning, Quality improvement

- Resuscitation module
- Multipatient viewer
- Single patient viewer
- Administrative dashboard

- Hand over
- Claim patient
- Task list
- Rounding tool (Checklist)

- ED
- OR
- PACU
- ICU
- Floor

- Essential information at a glance
- Focused on patient problems
- Links provider and patients
- One stop communication
- Shared list of tasks
- Outside of clinical note
- Structured clinical assessment
- Generates clinical note
The implementation of clinician designed, human-centered electronic medical record viewer in the intensive care unit: A pilot step-wedge cluster randomized trial.

**Abstract**

Objective: AWARE (Ambient Warning and Response Evaluation) is a novel electronic medical record (EMR) dashboard designed for clinicians to support bedside clinical information management in the ICU. AWARE sits on top of pre-existing, comprehensive EMR viewers. The intervention was tested in the solicitation and report of statistical data management in the clinical ICU settings. The primary outcome measure was observed efficiency of data gathering on a 'pre' and 'post' implementation rounds.

Design: Step-wedge cluster randomized trial

Setting: Four tertiary-care medical and surgical units at an academic medical center. Subjects: All members of the critical care teams participating in incoming ICU rounds intervention. Pilot implementation of a novel EMR interface with direct observation and surveys, measurements of main outcomes. The study took place between April and July 2015. A total of 40 and 61 direct observations were made in the 'pre' and 'post'-implementation study periods respectively. The time spent on pre-round data gathering per patient decreased from 12 (10-14) to 9 (7-11) minutes in the 'pre'- and post-implementation phases respectively (p = 0.01).

Comparison to the existing EMR information management (data presentation format, efficiency of data screen) was reported to be better after AWARE implementation. AWARE made the task of gathering data for rounds significantly more efficient and easy.

**Fig. 2** - Time spent collecting data in preparation for ICU rounds. All times are reported as minutes per patient. The model-estimated time saved with AWARE is greater than 25% per patient encounter. See Section 3 for further details.

"AWARE shows me what I need to see, at the point of care, organized in the way I think. As a result, I can approach patients in a more standardized and organized fashion."

John M. Litell, D.O.

RE: Hey Vitaly for some reason I lost my access to AWARE can you please restore?
Moreno Franco, Pablo, M.D.
Sent: Fri 4/6/2012 11:46 AM
To: Tiong, Ing C.; Herasevich, Vitaly, M.D., Ph.D.

Excellent!
Can not live without it anymore! ;-)
Thanks,
Pablo