

# The Importance of Creating A Real-time Health System

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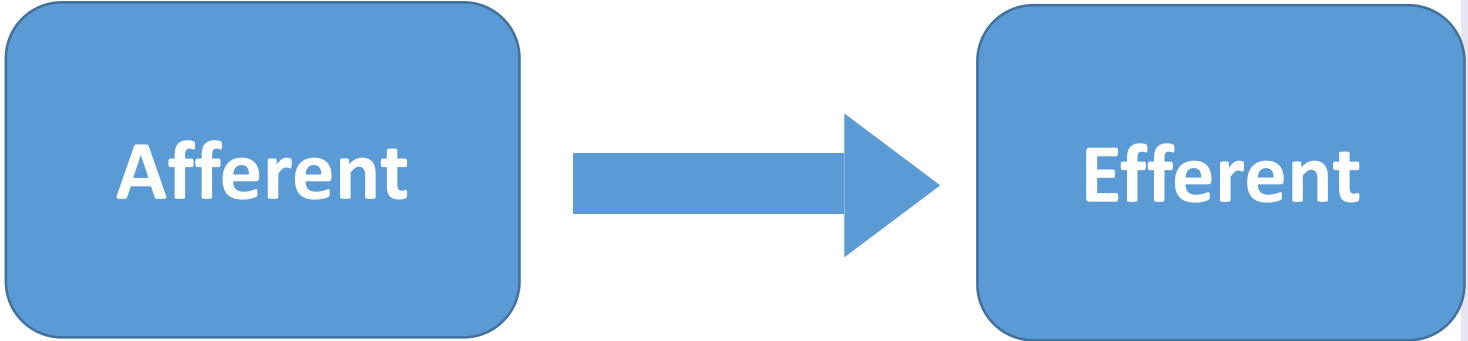
# Too Many Steps, Too Much Wasted Time



30 Minutes After Alarm...



# Communication Delays = Worse Outcomes

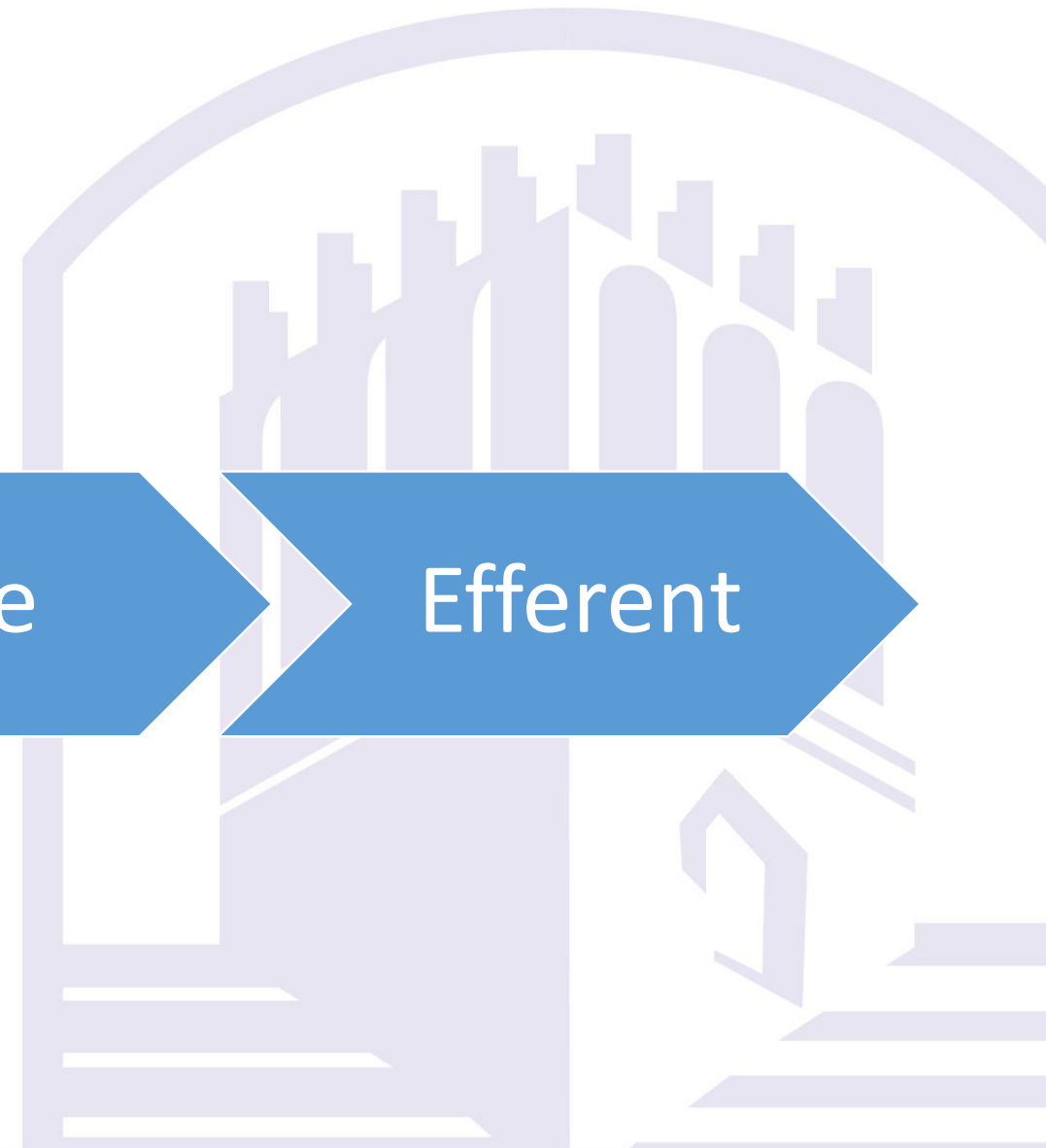


# Real-time Data, Actionable Information and Effective Communication Are Critical

Afferent

Communicate

Efferent



# A Connected Ecosystem Simplifies Communication and Collaboration

Recognize

Report

Respond





# HALIFAX HEALTH

Live your life well.



# Creating an Effective, Real-time Health System



HALIFAX HEALTH

# Tom Stafford, Vice President & CIO

## Education:

Bachelors of Science Aerospace Engineering  
Masters of Science Mechanical Engineering

## Career:

United States Navy  
Medical Device Design and Manufacture  
Healthcare IT

## IT Accolades:

10<sup>th</sup> Best Place to work in IT 2015 – Computerworld  
2<sup>nd</sup> Best Place to work in IT 2016 – Computerworld  
5<sup>th</sup> Best Place to work in IT 2017 & 2018 – Computerworld  
10<sup>th</sup> Best Place to work in IT 2019 - Computerworld  
Premier 100 Technology Leaders 2017 – Computerworld  
Top 105 CIOs to watch in 2018/19 – Becker's Healthcare



# About Halifax Health



## Halifax Health Medical Center, Daytona Beach

- Opened in 1928
- 600 beds
- “100 beds in intensive units”
- More than 500 physicians, representing 54 subspecialties

## Halifax Health - Medical Center of Port Orange

- Opened in 2006
- 80-bed community hospital
- 20-bed emergency department
- 8-bed intensive care unit

# Agenda

- Intra-operability
- Examples of Real Time Health System Components and Outcomes

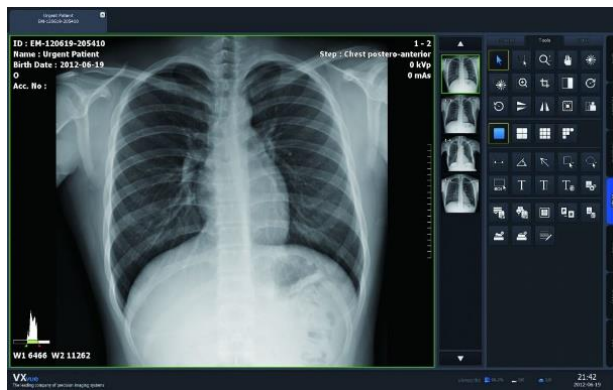


# Evolution of Healthcare IT Intra-Operability

In the beginning...



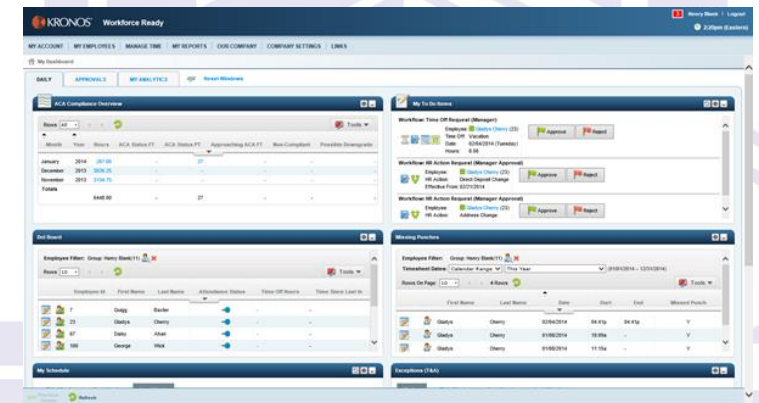
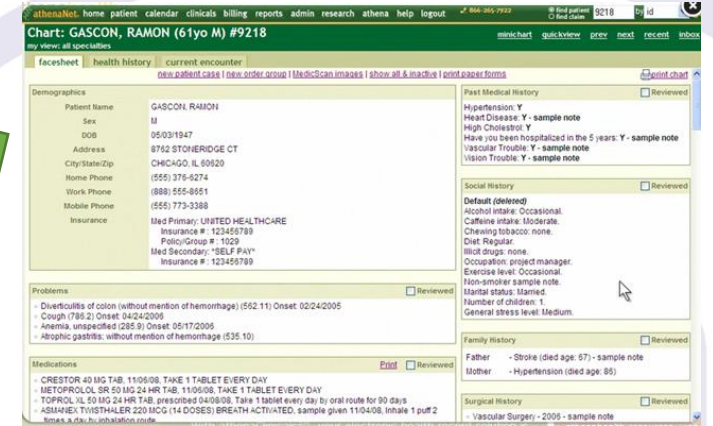
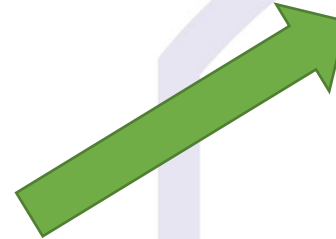
20 to 15 Years Ago...



Collection Date & Time	05/24/2011
^^p	16:30
ALBUMIN	4.9
ALKALINE PHOSPHATASE	71
ALT/SGPT	32
ANION GAP	10
APPEARANCE, URINE	CLEAR
AST/SGOT	34
BASO #	0.0
BASO %	0.3
BILIRUBIN, URINE	NEGATIVE
BILIRUBIN, TOTAL	0.4
BLOOD UREA NITROGEN-VT	15
BLOOD, URINE	NEGATIVE
BUN/CREATININE RATIO	15.78
CALC OSMO	274
CALCIUM	9.3
CARBON DIOXIDE-VT	26
CHLORIDE-VT	105
CHOLESTEROL	226
CHOLESTEROL/HDLC RATIO	5
COLOR, URINE	YELLOW
CORRECTED CALCIUM	8.6

# Evolution of Healthcare IT Intra-Operability

15 to 2 Year Ago...



# Evolution of Healthcare IT Intra-Operability

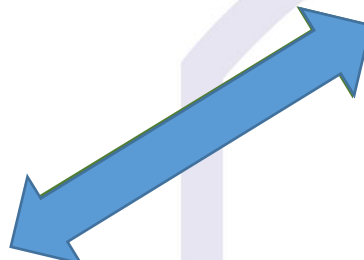
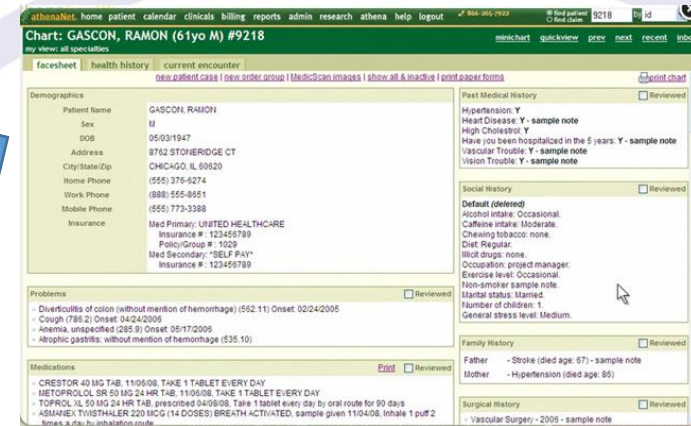
Present...

- Siloed Systems
- Big Data
- Clunky HL7 Integration

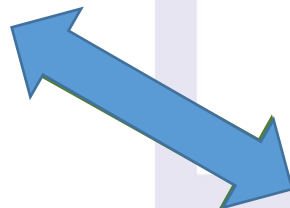
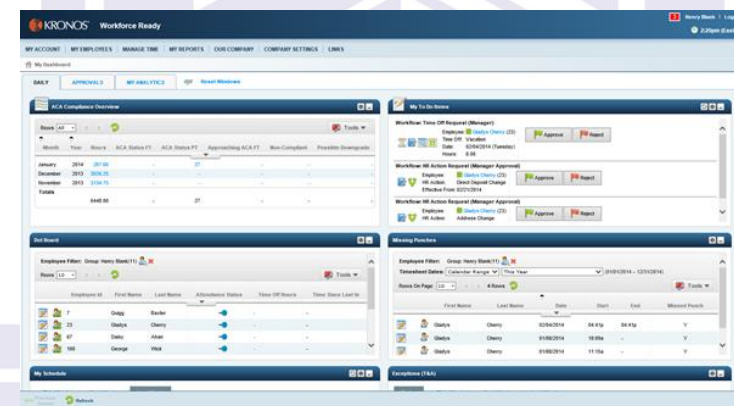


# Evolution of Healthcare IT Innovation

Last couple of Years...



Infrastructure  
for the RTHS





# Evolution of Healthcare IT Intra-Operability

Real-Time Health System:

Intra-operability

Wearable Communication Devices

Predictive and Prescriptive

**ALERTS**

Inform the Caregiver without harnessing them to a  
Computer

# Facets of the RTHS

- EHR Mobility
- AI Powered Documentation Improvement
- Discharge Alerts
- Sepsis Alerting



# EHR Mobility

The screenshot displays an EHR mobile application interface. At the top, there is a navigation bar with icons for 'Expense', 'Home', 'Chart', 'Document', 'Orders', 'Discharge', 'Sign', 'Workload', 'Menu', and 'Suspend'. Below this is a header for 'Kirk Benson' with a 'Find Patient' search bar. The main area is divided into 'My Patients' (9) and 'Canton Medical Center'. A 'Rounding' tab is active, showing a list of patients. The patient list includes:

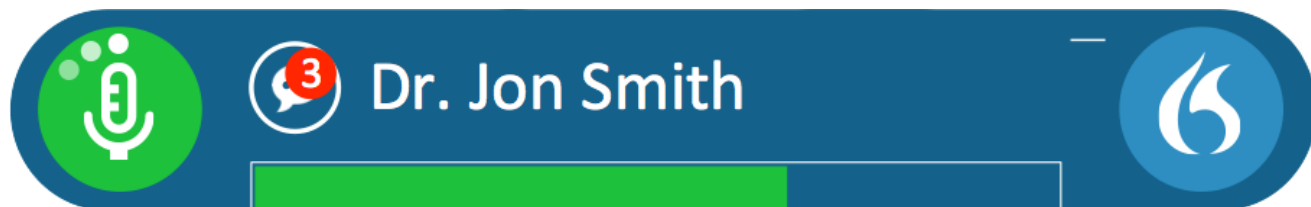
- Noel, Terry**: 67 F, ADM IN, 505-1. Status post total hip re... Sulfa (Sulfonamide Antibiotics) sulfamethoxazole trimethoprim. Reporting pain at incision site.
- Daly, Jonathan**: 55 M, ADM IN, 809-2. Status post total hip re... Warfarin Manageme... sulfamethoxazole trimethoprim.
- Wagner, Bill**: 54 M, ADM IN, 203-1. Shortness of breath, Fever, Community acquired p... Recent Overseas Tra... sulfamethoxazole trimethoprim.
- Wikstrom, Bill**: 64 M, ADM IN, 802-1. CHF (congestive heart ... Recent Overseas Tra... sulfamethoxazole trimethoprim. Wife (Carol) at bedside.
- Walker, Rose**: 68 F, ADM IN, 324-1. Sepsis secondary to UT... No Known Drug Allergies. Call daughter daily @ 612-555-2244.
- Bloom, Marion**: 83 F, ADM IN, 950-2. Sepsis secondary to UT... Hearing or Vision As... pineapple. HTN (hypertension). Hyperlipidemia. Improving on antibiotic evaluate.
- Cassidy, Daniel**: 63 M, ADM IN, 914-1. Pulmonary embolism. No Known Drug Allergies.
- Burke, Mae**: 74 F. Knee fracture, left. Fall Precaution Consult. shellfish derived.

On the right side, a detailed view for 'Walker, Rose' (3W/324-1) is shown. It includes I&O (Intake 300 ml, Output 200 ml, Balance 100 ml), Last Vitals (BP 105/59, Pulse 95, Resp 20, Temp 37.7 C, O2 Sat 97), and lab results for a Complete Blood Count and Basic Metabolic Panel.

Test	Value
WBC	13.5
RBC	5.20
Hgb	15.1
Hct	44.0
MCV	84.0
MCH	29.0
MCHC	34.0
Plt Count	252

Test	Value
Sodium	140
Potassium	4.2
Chloride	101
Carbon Dioxide	26
Anion Gap	13
BUN	14
Creatinine	1.2
Glucose	162
Calcium	9.6

# AI Powered Documentation Improvement



Real-time counter unobtrusively displays amount of available advice before advice window is opened as the provider is documenting in Meditech.



# AI Powered Documentation Improvement



**Increases diagnosis specificity** reflects the appropriate HCC for risk adjustment.

**Reduces post-discharge and out-of-context queries** from CDI and coding teams.

Dragon Medical Advisor

**Diabetes mellitus** evidence is documented with no documentation of:  
**Control:** Controlled, Uncontrolled  
**Type:** Type I, Type II, Juvenile Type II

**Pneumonia** evidence is documented with no documentation of:  
**Setting:** MRSA/GmNeg, Hospital Acquired, Ventilator Associated, Aspiration Associated

**Acidosis** evidence is documented with no documentation of:  
**Acuity:** Acute, Chronic, Acute on Chronic  
**Diagnosis:** Respiratory Acidosis, Metabolic Acidosis

**Accelerates hospital billing for inpatient and reduces denials across settings**—advises on most common diagnoses impacting DNFB.

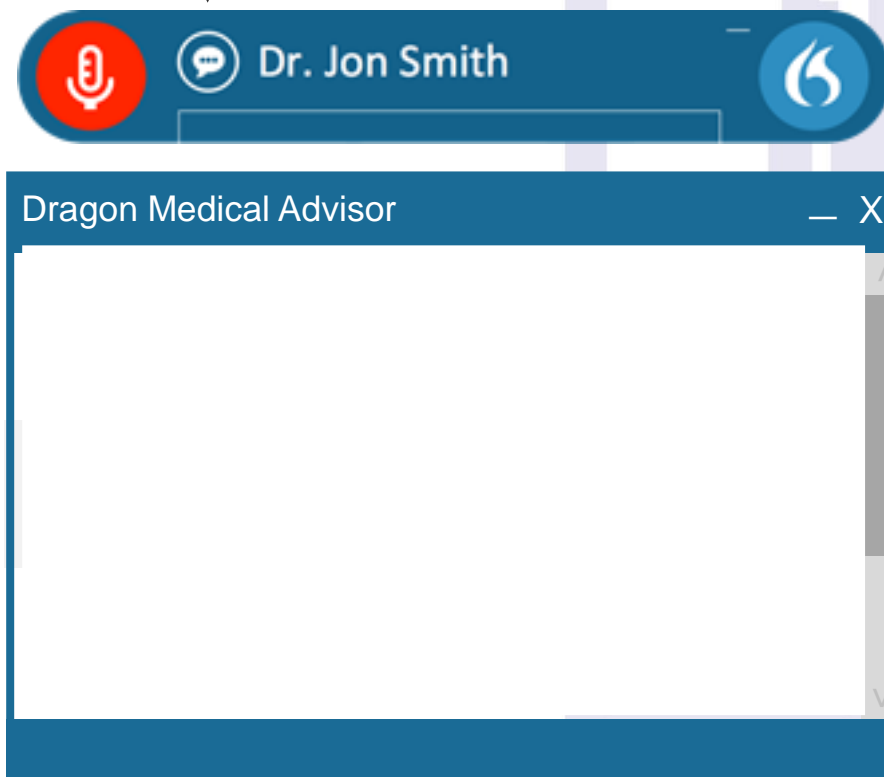
**Identifies clinical quality opportunities** and prioritizes potential PSIs and HACs so physicians can take immediate action.



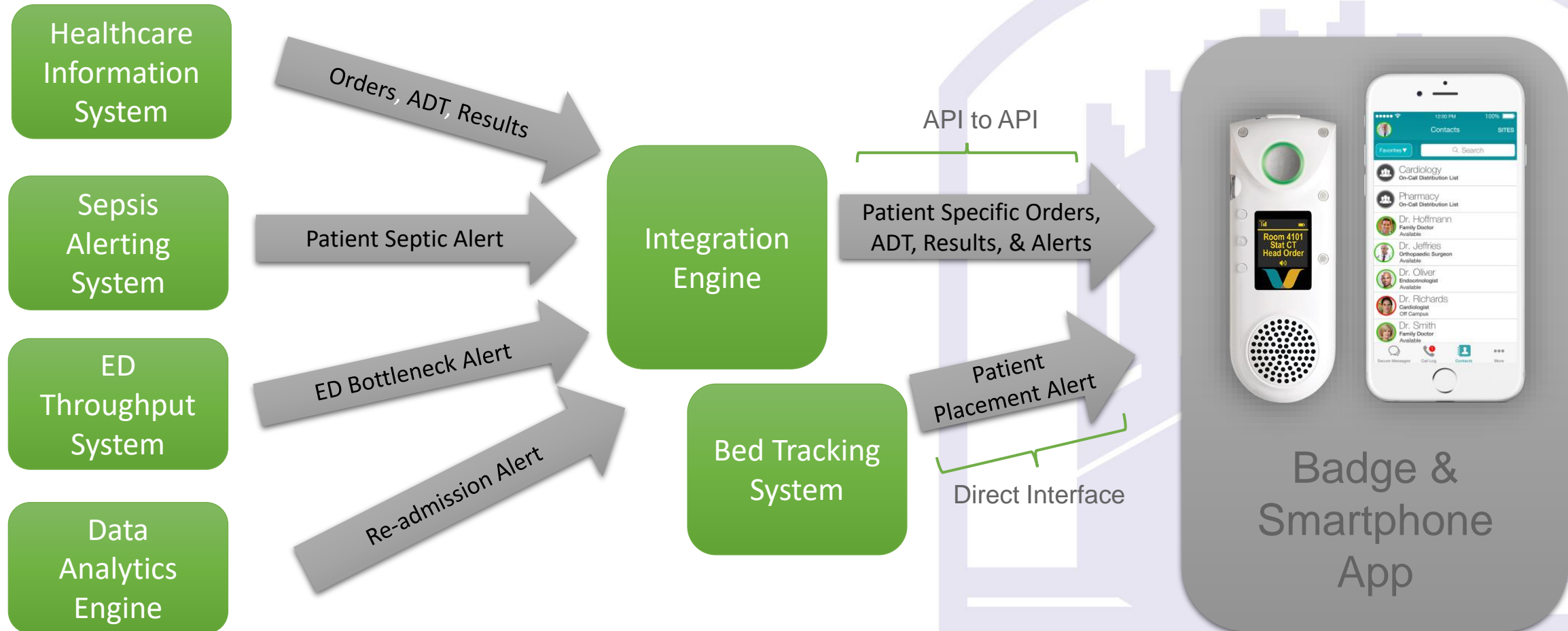
# AI Powered Documentation Improvement

Advice indicator disappears  
once **guidance is satisfied**

Real-time auto-processing of any note—dictated, transcribed, typed— **advice is resolved as documentation is updated.**

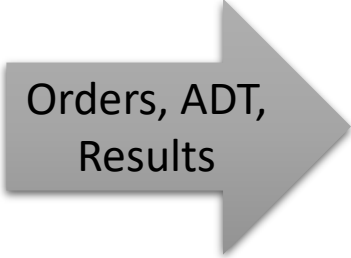


# Intra-Operability for the RTHS

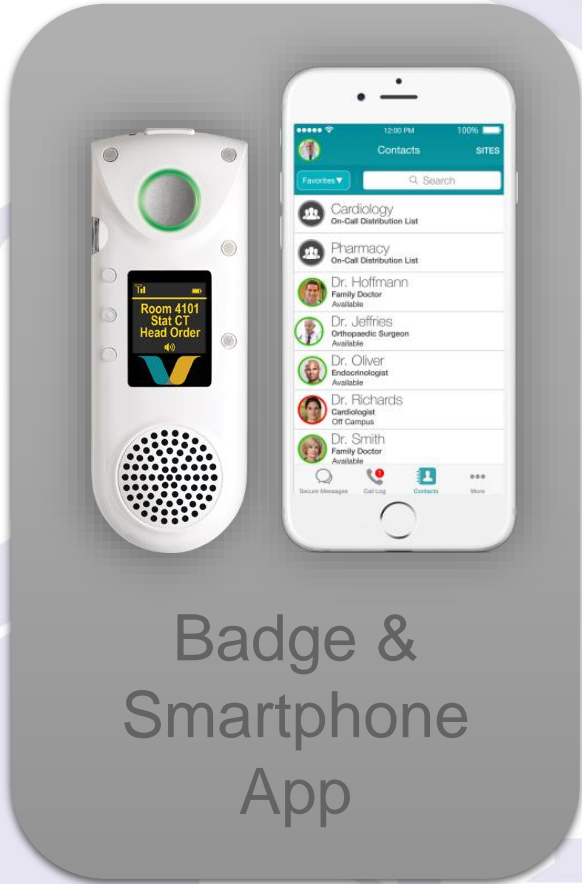
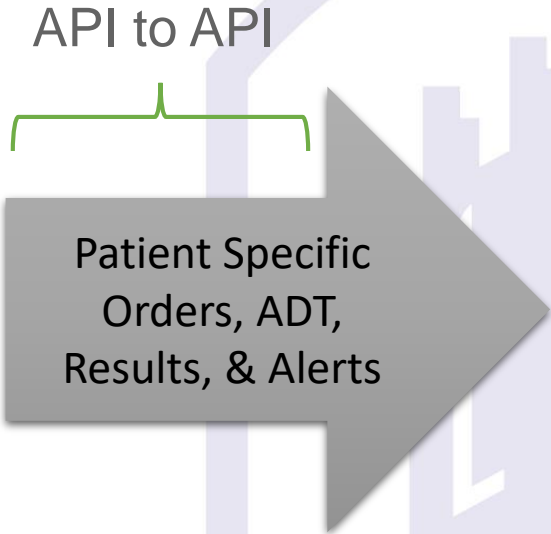


# Discharge Alerts

Healthcare Information System



Integration Engine

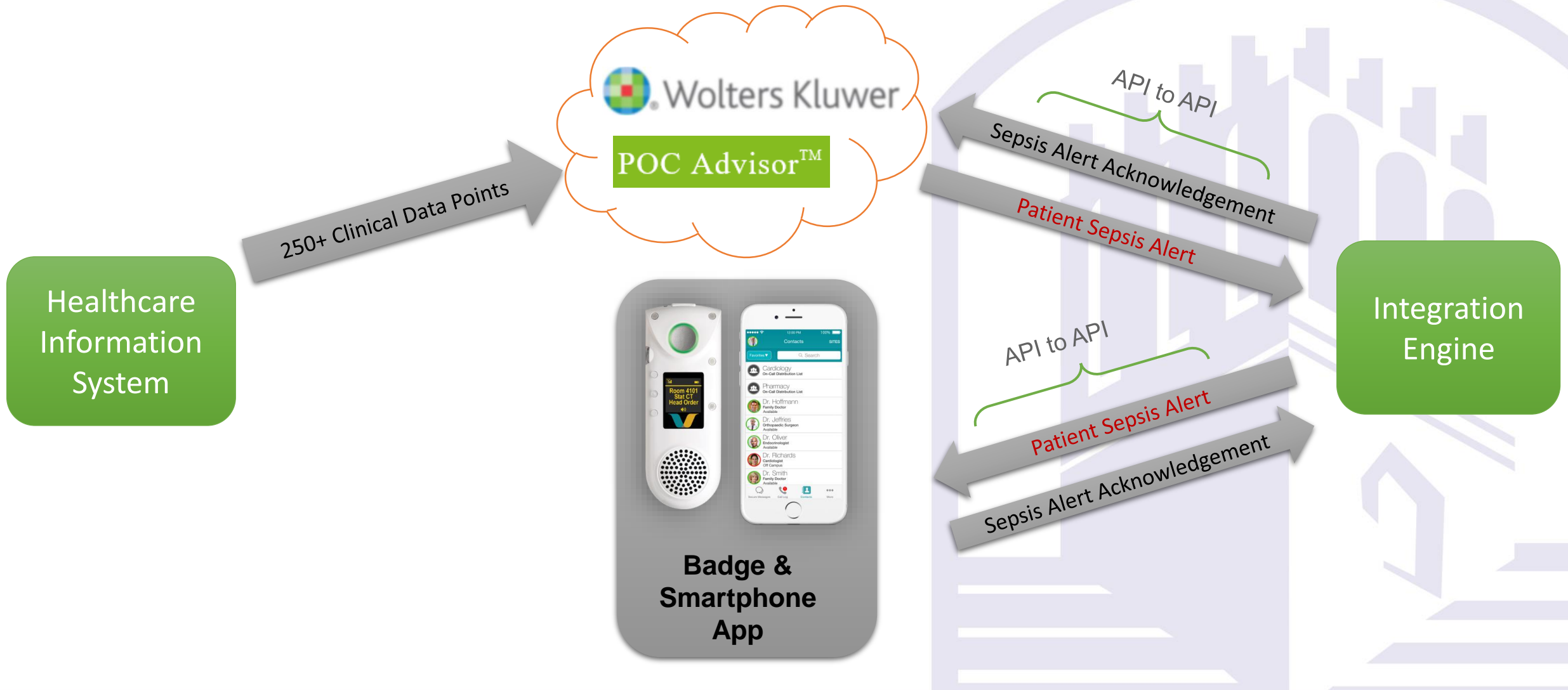




# Discharge Alerting



# Sepsis Alerting



# Predictive Alerting



# Prescriptive Alerting



# In Summary...

- API Connections of Disparate Systems
- Partner Innovations
- Clinical Communication System
- Infused with Processes and People

## **Creates the Real-Time Health System**

- Information
- The Power of AI
- Predictive and Prescriptive Alerting

**Improves quality of care, provider and nurse satisfaction, and outcomes for the patients we serve.**

