



integrating care. **improving health.**

Realizing the Potential: Using Data to Improve Patient Health, Population Health

September 2011



INFORMATICS
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VANDERBILT UNIVERSITY

About Vanderbilt



Enrollment

- Undergraduate: 6,879
- Graduate and Professional: 5,835
- TOTAL: 12,714

Schools

- Blair School of Music
- Divinity School
- School of Engineering
- Graduate School
- Law School
- School of Medicine
- School of Nursing
- Owen Graduate School of Management
- Peabody College

FORTUNE
100 BEST
COMPANIES
TO WORK FOR 2009

About Vanderbilt



- University Hospital and Clinics
- Monroe Carell Jr. Children's Hospital
- Vanderbilt-Ingram Cancer Center
- Vanderbilt Stallworth Rehabilitation Hospital
- Vanderbilt Psychiatric Hospital)



Patient Visits	1,450,196
Inpatient Admissions	51,800
Licensed Bed Capacity	1342
Medical Group	1350
House Staff	894
Post-doc Research	520

FY10 Net Revenue	\$2.7 billion
Competitive Research Grants	\$445 million

FORTUNE
100 BEST
COMPANIES
TO WORK FOR 2009

About Vanderbilt



Total Employment: 22,505

Staff (as of June 30, 2010):

	Total	University Central	Medical Center
Full-time	18,089	3,847	14,242
Part-time	683	121	562
Total	18,772	3,968	14,804



Vanderbilt Health and Care Plan

Self-funded

Total Enrollment: 45,580



EMR



Star Panel

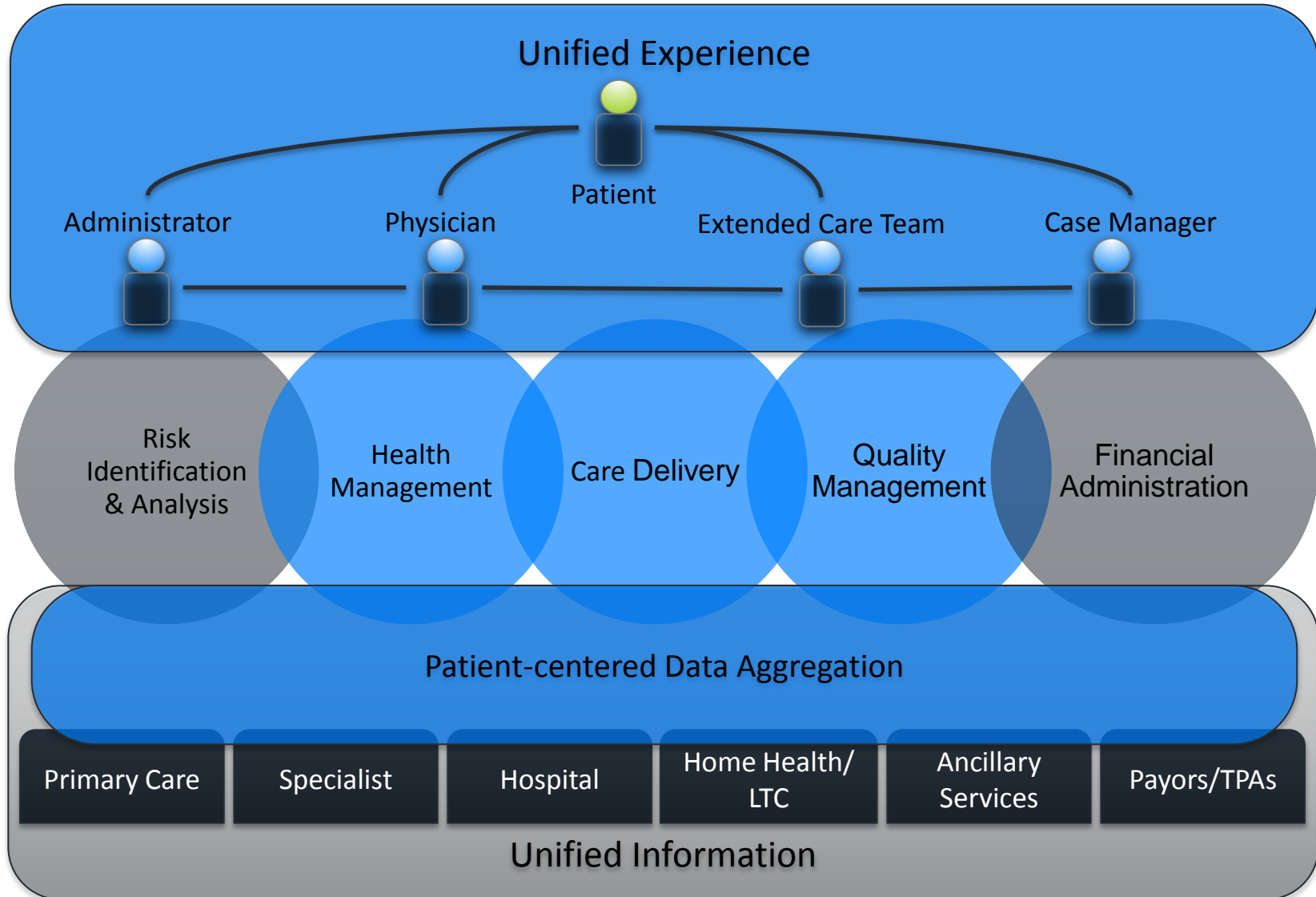
- Integrated web-based application that allows access to electronic clinical information from one screen.
- Allows you to view multiple patients and results at one time.
- Gives you immediate access to NEW results for all your patients.



PHR

A screenshot of the 'My Health at Vanderbilt' website. The page title is 'My Health at Vanderbilt Login Page' and the URL is 'VanderbiltHealth.com: For Patients and Visitors'. The main header features the 'My Health at Vanderbilt' logo and a photo of three medical professionals. Below the header, there is a 'User Login' section with fields for 'Username' and 'Password', and a link for 'Forgot your username or password?'. To the right, a yellow box titled 'What can I do with My Health at Vanderbilt?' lists several services: 'See lab test results', 'Send and receive secure messages with your doctor's office', 'Request new appointments', 'View your personal medical information', 'Pay Vanderbilt bills', 'Read relevant medical information', and 'And more...'. Below this list is a 'Register Here for a free account' button. At the bottom, there is a 'Not Yet a Vanderbilt Patient?' section with contact information: '(615) 936-MYMD' and '(615) 936-6963'. The footer contains copyright information: 'Copyright © 2008, Vanderbilt Medical Center' and 'Version: 8.1.30_42427-prod'.

Convergence of Financial and Clinical Data





	In Control	Moderately Controlled	Out of Control
Low Risk	Non-nurse	Nurse specialist	Primary care
Moderate Risk	Nurse specialist	Primary care	Specialist
High Risk	Specialist	Sub-Specialist	Sub-Specialist

Hypertensive Risk Matrix

Goal - The right patients to the right resource resulting in:

- More patients empanelled to the same amount of resources
- Greater follow-up to improve risk and control measures
- More informed and engaged patient panels
- Team acting as advisors to each other increasing overall expertise

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Leader in care management HIE software solutions

- Platform to leverage existing systems and aggregated information to improve outcomes
- Clinical interoperability provides [point-of-care access to complete and actionable patient information](#) across treatment settings
- Robust portfolio of clinical care applications; [patient centric-dashboards](#)

Based on clinician-developed technology that evolved over [18 years at Vanderbilt University Medical Center](#)

Clients range from rural hospitals and clinics to large, metropolitan areas and states; **325 hospitals** and **2,400 clinics** in **14 states**

Product Differentiation

- Most complete HIE solution on the market
- Broad applicability with extensive clinical depth
- Patient-centric functionality at point-of-care
- Fits intuitively into existing clinical processes
- Real-time disease-specific dashboards
- Strong data reporting and analytics
- Modular, world-class architecture

Aggregate & share patient data across care settings

- Standard & non-standard datasets
- Semantic interoperability

Care coordination, workflow and tracking tools

- Secure messaging
- Activity tracking and alerting functions

Point of care decision support capabilities

- Clinical dashboards and decision support
- Data Capture and System to system interoperability capabilities

Population management & reporting

- Quality and risk reporting
- Bio-surveillance

Administrative functions

- Authorization
- Claims and payment management

Key Concept #1: Business Model



Healthcare is moving away from a **transaction-based care model** based on activity to a **quality-driven care model** based on outcomes



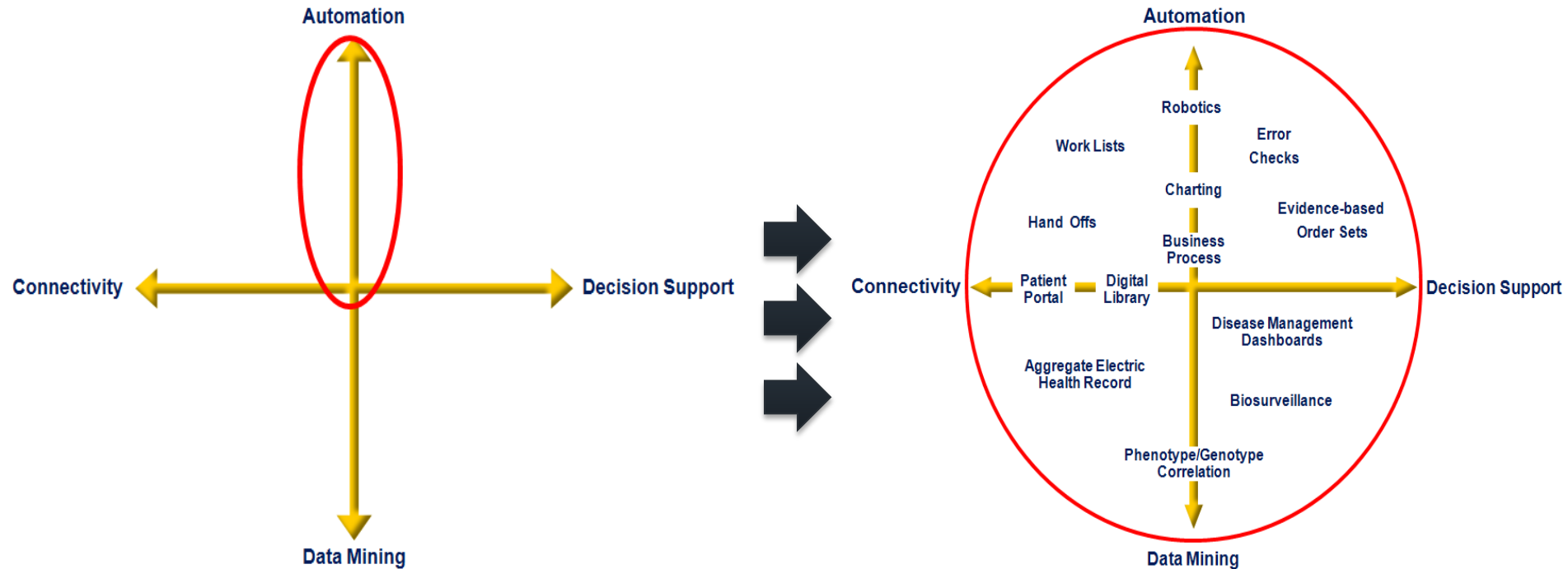
Key Concept #2: Data Model

A quality-driven care model requires **expanded computational capabilities** that work **across treatment settings** and include **all stakeholders**



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Key Concept #2: Data Model



In Press: Stead WW. Electronic Health Records. In: Rouse WB, Cortese DA, eds. Engineering the system of healthcare delivery. Tennenbaum Institute Series on Enterprise Systems, Vol. 3. Amsterdam: IOS Press; 2010.

Key Concept #3: HIE Model

Providing expanded computational capabilities across treatment settings requires that HIE platforms go **beyond patient portability functions** to support **broader patient centered capabilities**

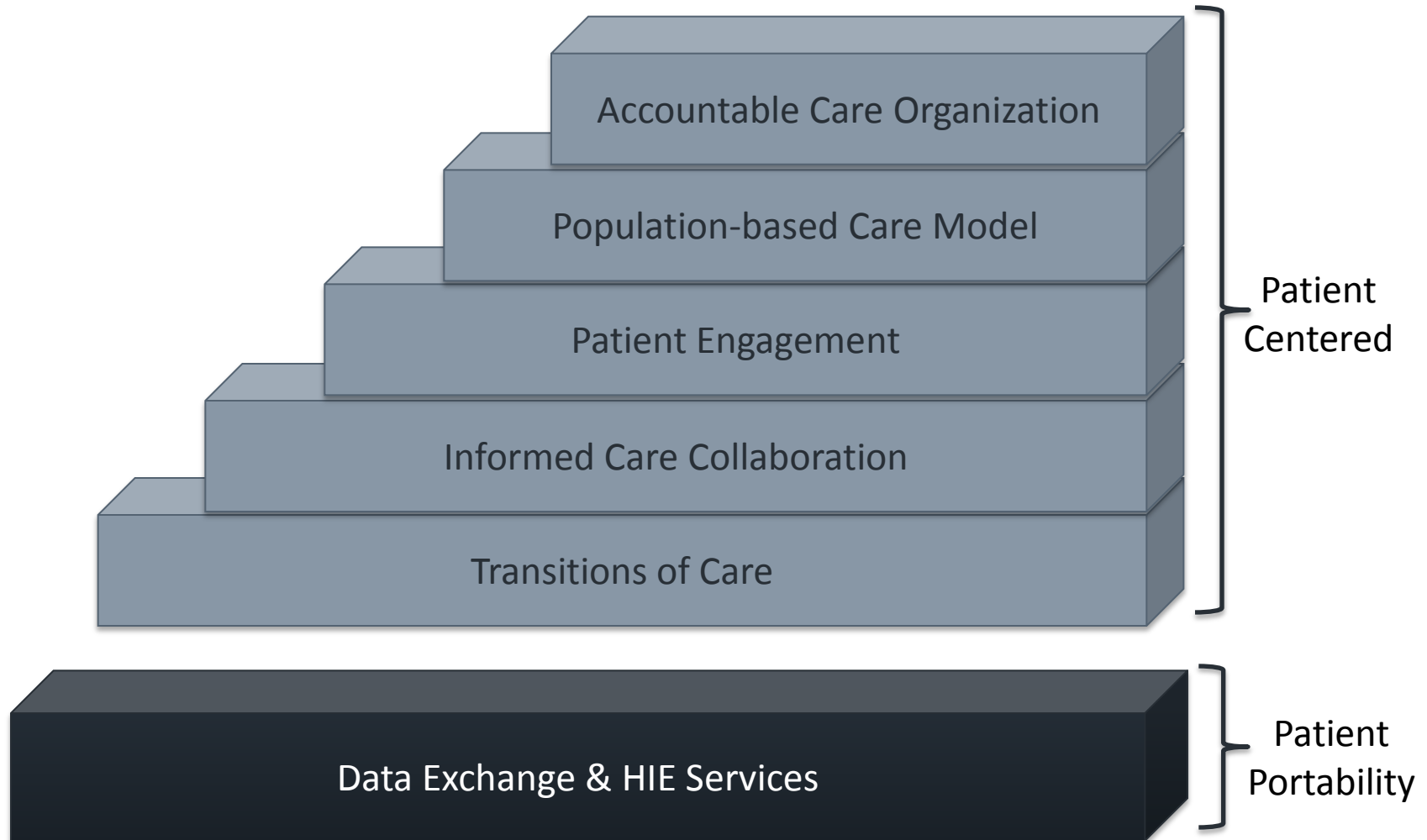


Key Concept #3: HIE Model

Providing expanded computational capabilities across treatment settings requires that HIE platforms go **beyond patient portability functions** to support **broader patient centered capabilities**



Complete Care Coordination

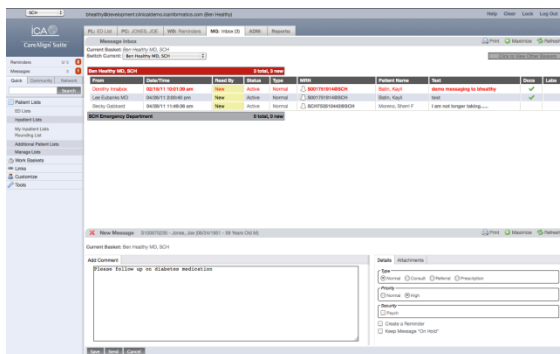


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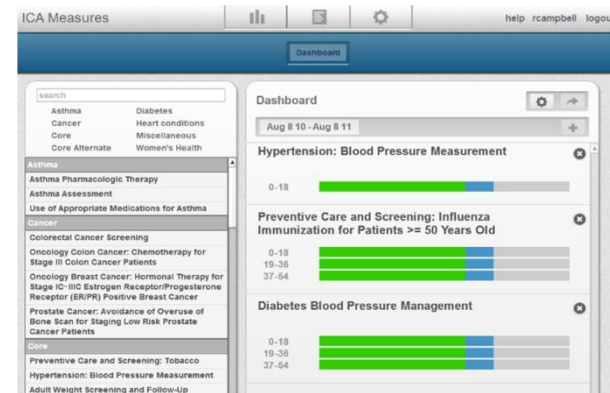
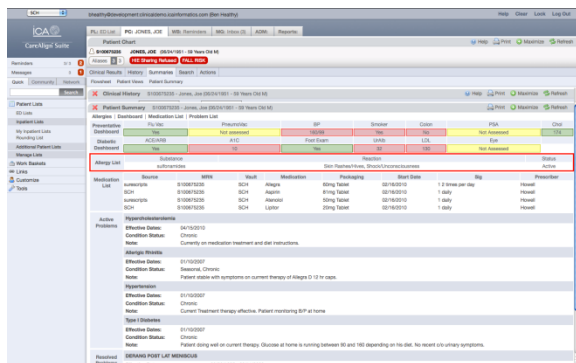
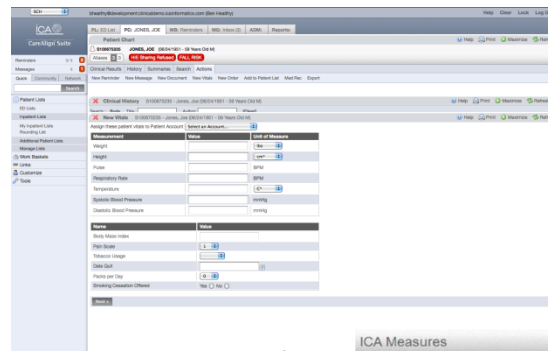
Clinical Tools at the Point of Care



Secure messaging allows for real-time collaboration between providers and patients

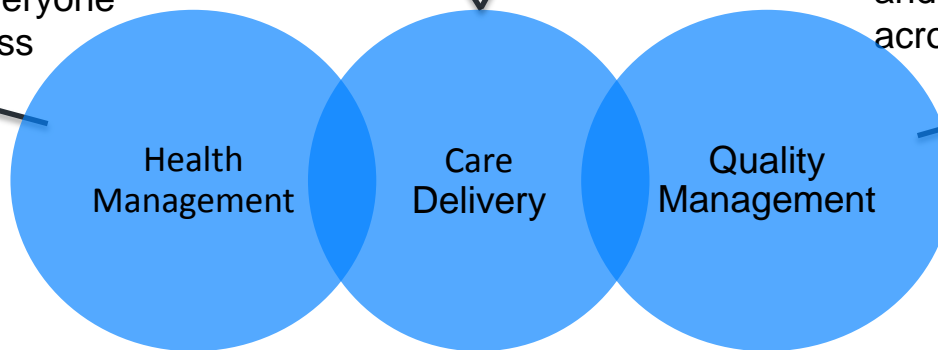


Data capture tools fill in functional gaps that may exist among participants



Patient-centered dashboards provide real-time health management status for everyone involved in the care process

Bio-surveillance and reporting provide for identification, tracking and reporting on key metrics across the population



Coupling technology with a **Care Team Approach:**

- 1) Combines analytics, matrix based risk assignment, eVisits and hypertension team care
- 2) Quadruples the positive financial impact of disease management
- 3) **Expected to yield >\$11 million** in reduced hospitalization and mortality over 5 years for a 10,000 patient population

Case Study #2: Diabetes



Incorporating **Point of Care Dashboard** technology to manage diabetes patients across care continuum

CareAlign Suite - csmd@development:clinicalde... SCH csmd@development:clinicaldemo300.icainformatics.com (Camille Schaefer- MD) Help Clear Lock Log Out

PL: ED List PC: Jones, Joe WB: MG: Inbox ADM: Reports:

Patient Chart Help Print Maximize Refresh

S100675235 Jones, Joe (06/24/1951 - 60 Years Old M)
Aliases 2 3 Secured Data HIE Sharing Refused FALL RISK

Clinical Results History Summaries Search Actions

Flowsheet Patient Summary

Search

Patient Lists Work Baskets Links Customize Tools

✖ Patient Summary S100675235 - Jones, Joe (06/24/1951 - 60 Years Old M) Print Maximize Refresh

Allergies | Dashboard | Medication List | Problem List

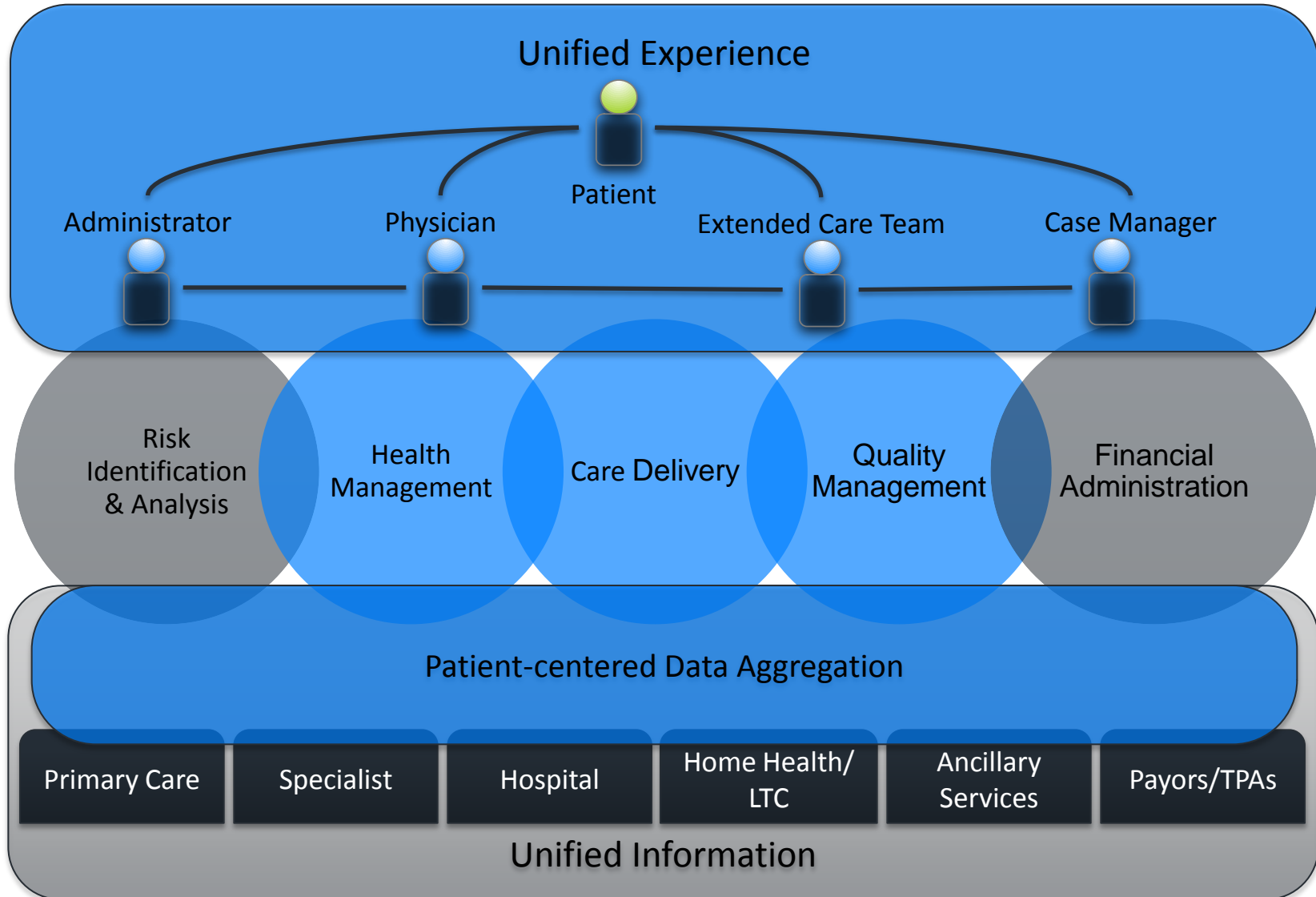
Preventative Dashboard	Flu Vac	PneumoVac	BP	Smoker	Colon	PSA	Chol
	Yes	Not assessed	160/99	Yes	No	Not Assessed	174
Diabetic Dashboard	ACE/ARB	A1C	Foot Exam	UrAlb	LDL	Eye	
	Yes	10	Yes	32	130	Not Assessed	

Goal: <7.0

45 to 90%

Diabetic Patient Compliance

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