Population Health in USA, England und Spanien – (k)ein Modell für Deutschland?

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December 13, 2016

Cerner - The largest HC-IT footprint in Europe

Working with clients in
15 countries

Local presence of
+1,500 associates

Used by more than
800 clients

Numbers in boxes denote number of hospitals served by Cerner solutions

Globally:

Working with clients in
30+ countries

Solutions in more than
18,000 facilities

Global family of more than
21,000 associates

Annual R&D investment of over
$650 million

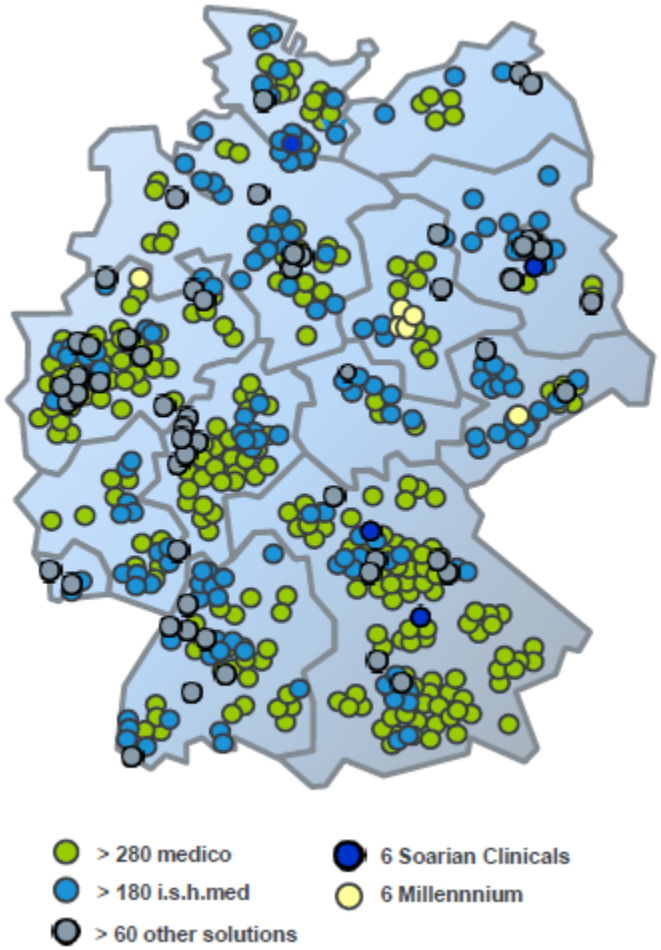
Annual Revenue of more than
$4.8 billion*

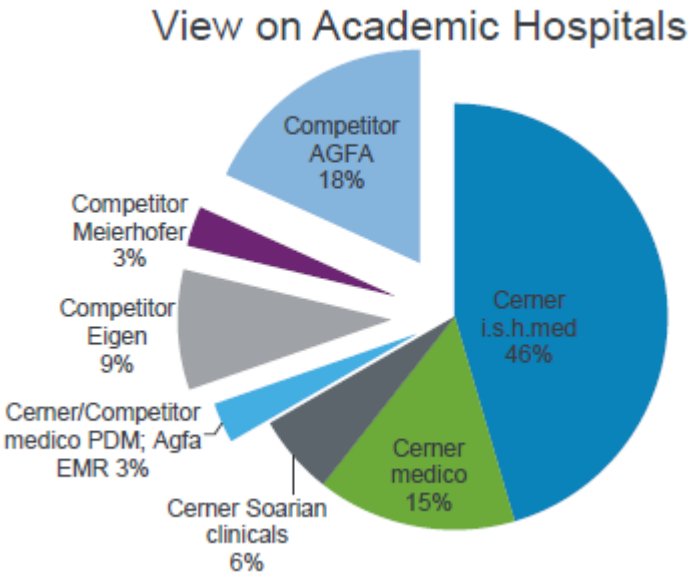
**Based on 2015 estimates*

Cerner client overview Germany (>500 hospitals)

Selection of reference clients		
Client	**EMR**	**# Beds**
Universitätskrankenhaus Hamburg Eppendorf [1)]	Soarian Clinicals	1542
University Erlangen	Soarian Clinicals	1323
Ernst von Bergmann Klinikum Potsdam	Soarian Clinicals	1080
Charité - Universitätsmedizin Berlin	i.s.h.med	3200
Klinikum der Universität Würzburg	i.s.h.med	1433
Klinikum Region Hannover GmbH (8 sites)	i.s.h.med	3416
Muldentalkliniken Grimma	i.s.h.med	375
Universitätsklinikum Aachen	medico	1297
Universitätsklinikum Essen	medico	1260
Klinik Plus Medical Services GmbH Klinikum Südostbayern (7 hospitals)	medico	1200
Sozialstiftung Bamberg	medico	1041
Berufsgenossenschaftliche Unfallklinik Frankfurt am Main (8 hospitals in KUV)	medico	348
Klinikum Oldenburg	medico	798
AMEOS Spitalgesellschaft (5 hospitals)	Millennium	1567

1) First European HIMSS Level 7 Hospital

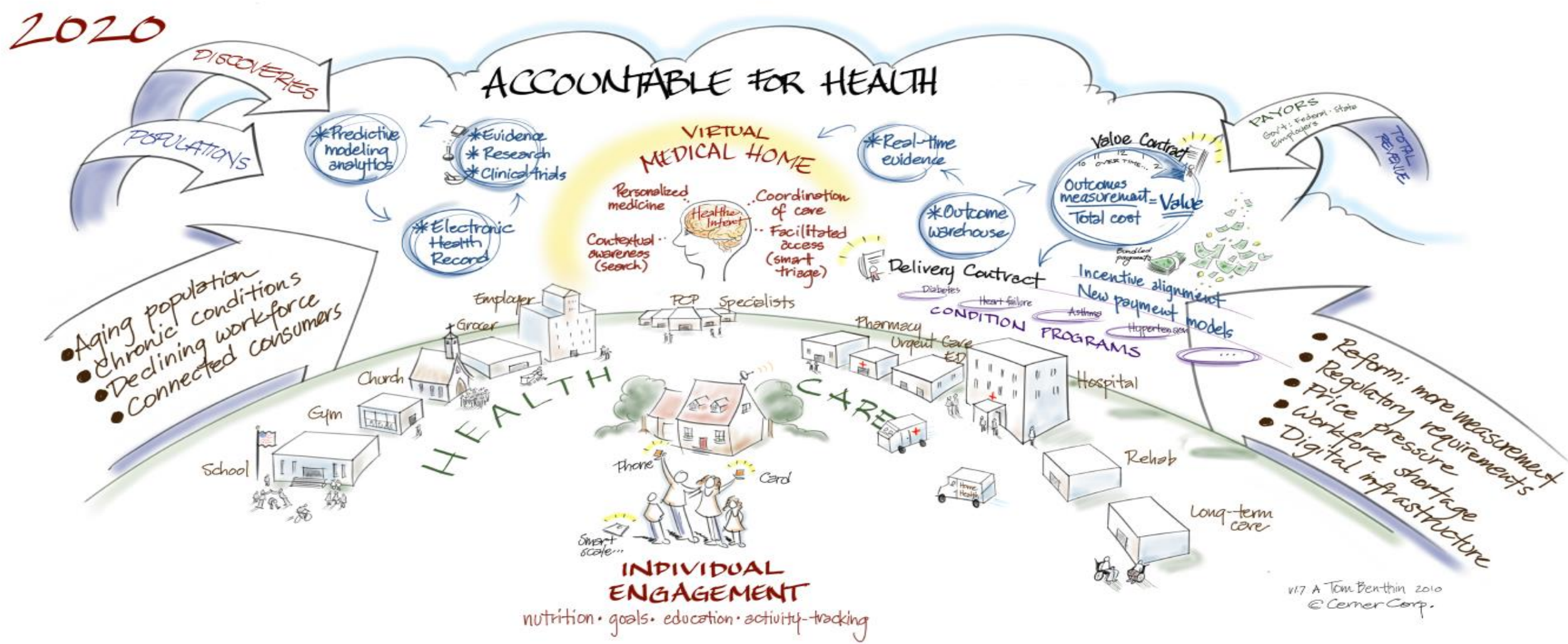




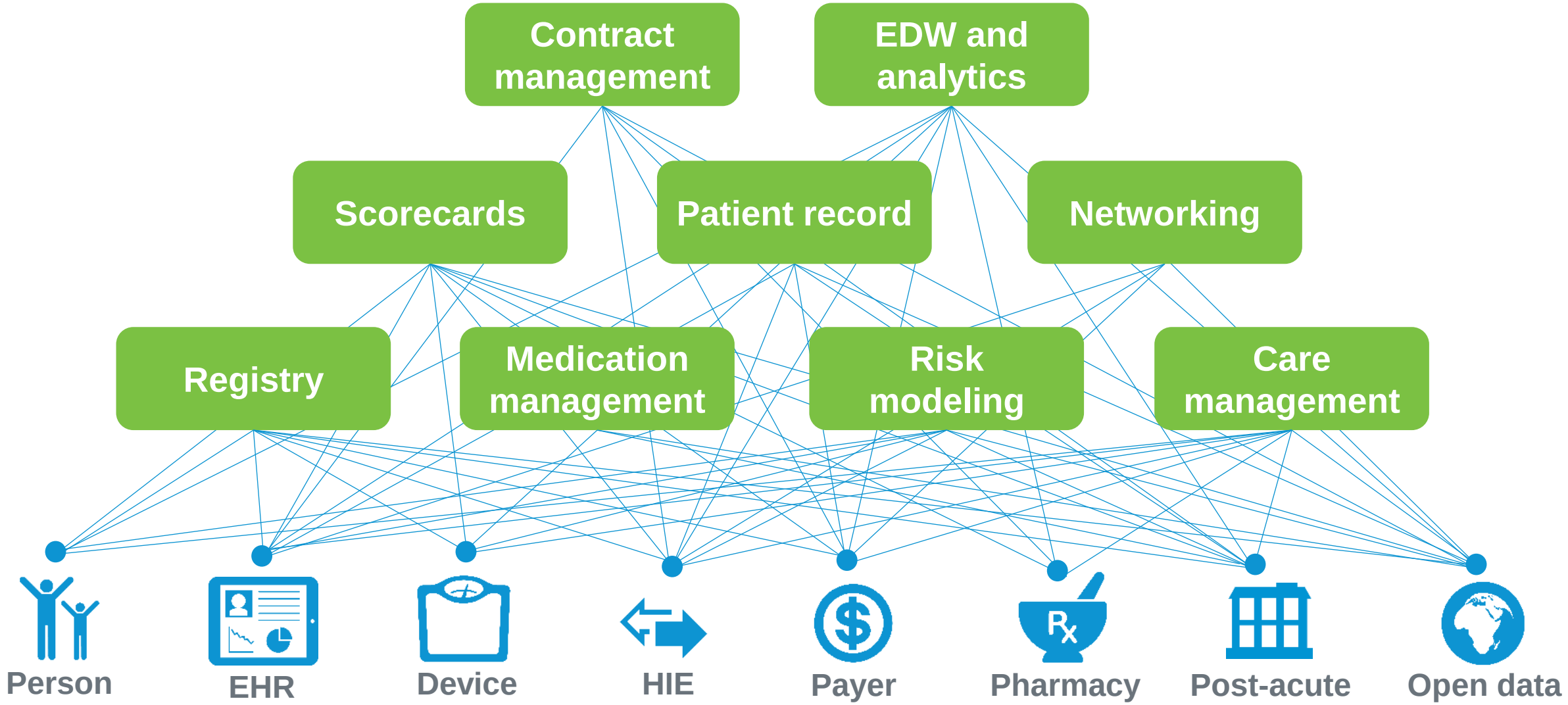
Cerner's vision of proactive health care management drives innovation in the development of effective solutions for today's health care challenges, while creating a foundation for tomorrow's healthy populations.

KNOW **ENGAGE** **MANAGE**

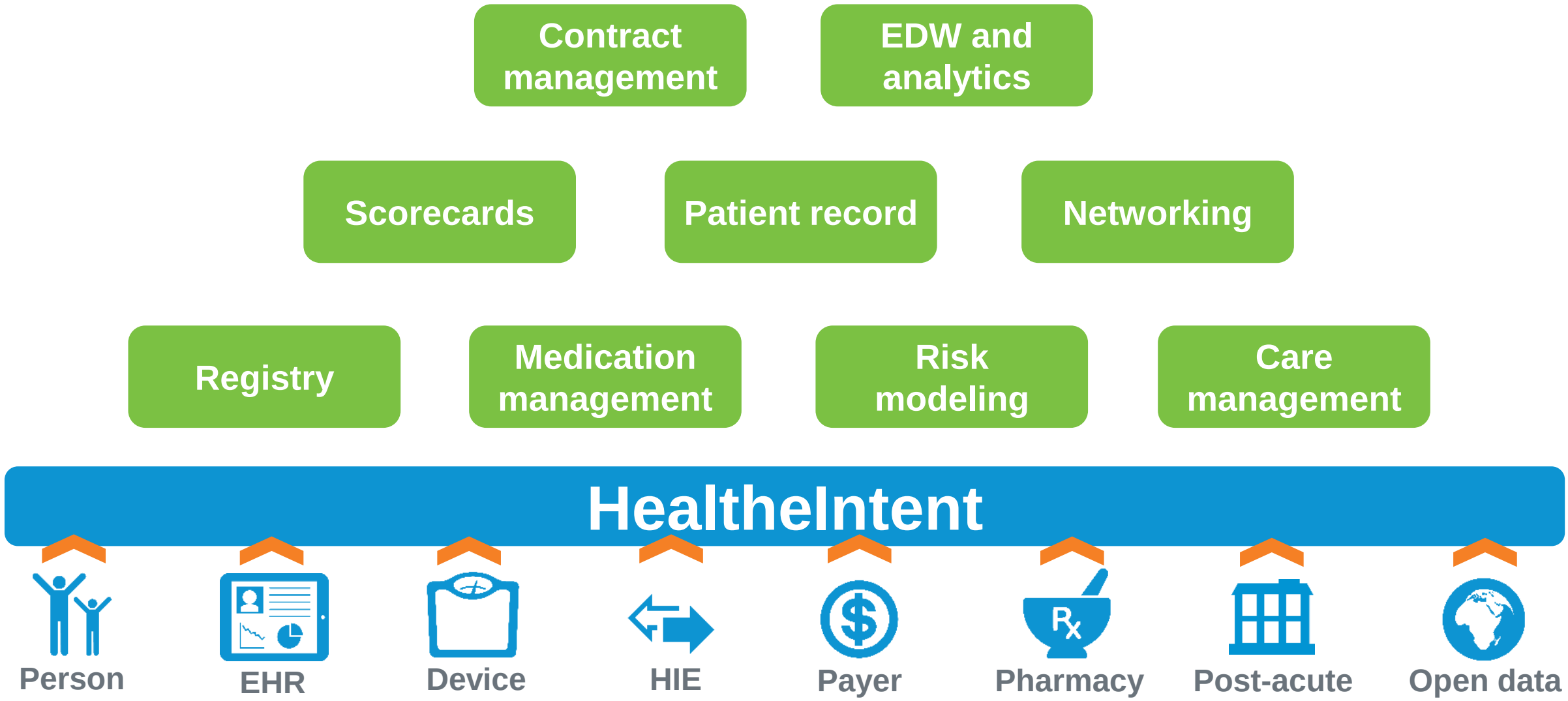
Shifting from reactive care to proactive health



Typical approach to population health management



Cerner's approach to population health management



Wirral – UK

Healthy Wirral

Ziel:

Entwicklung und Einführung neuer, evidenzbasierter, integrierter Versorgungsmodelle basierend auf einer Populations Health Management IT Platform.

Initiative und finanzielle Unterstützung durch den NHS.

- Aggregierte Datensicht (single-source-of-truth)
- Regionale Vernetzung von Erst- und Zweitversorgern (56 General Practitioners und one Acute University Hospital)

Die Ermöglichung eines Care Management across the Continuum

Healthy Wirral

- Integriertes Versorgungsmodell für Patienten (insbesondere chronische Krankheiten wie Diabetes, Asthma und COPD) erarbeitet
- Kumulierte Kosteneinsparung über die nächsten 5 Jahre von
  - ~2 Millionen Euro (Diabetes)
  - ~1,83 Millionen Euro (COPD)

Care Management Pathways

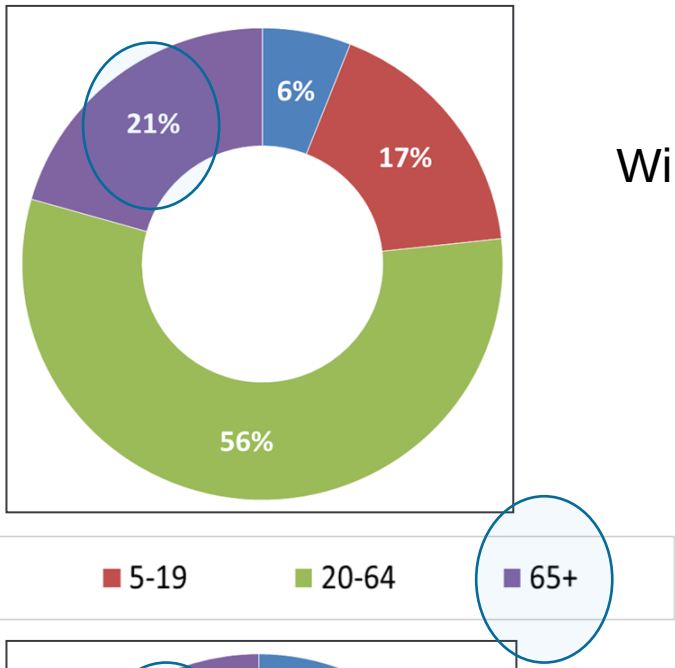
- Asthma — Adult & Paediatric
- COPD
- Diabetes — Adult & Paediatric
- Epilepsy
- Heart Failure
- Hypertension
- Sickle Cell
- Depression
- ADHD
- Chronic Otis Media
- Chronic Pain Pediatric
- Autoimmune Disease
- Sleep Disorders
- Hemophilia Pediatric
- Cardiovascular Special Care
- Stroke
- Chronic Pain Adult
- Communicable/Infectious Disease
- Anxiety
- HIV/AIDS
- Hemophilia
- Atrial Fibrillation
- Inflammatory Bowel Disease
- Dyslipidemia
- Obesity
- Malnutrition Adult
- Wellness Adult

Lebenserwartung in Wirral

Healthy Wirral

Wirral 82.3

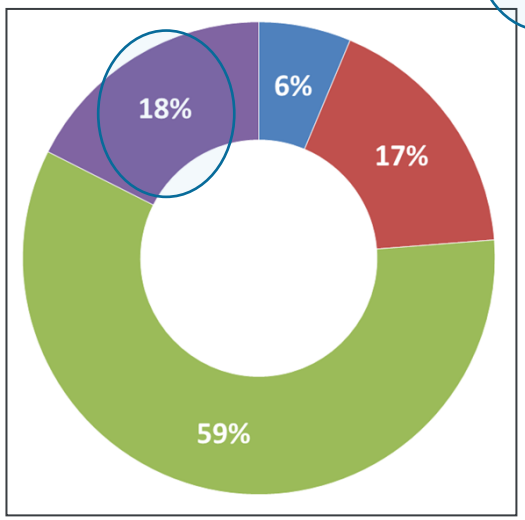
England 83.1



Wirral

Wirral 77.8

England 79.4

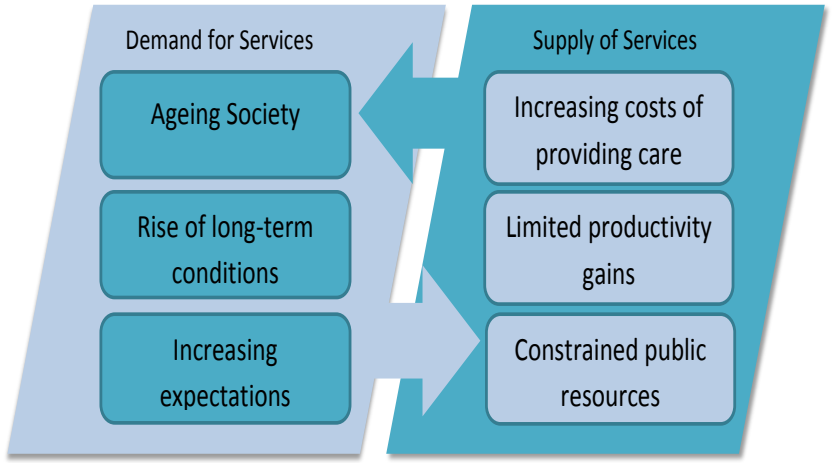


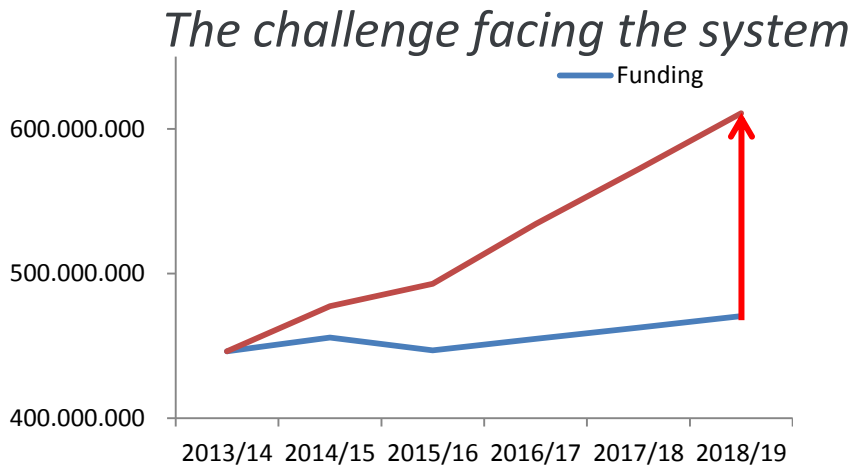
England

Änderung notwendig

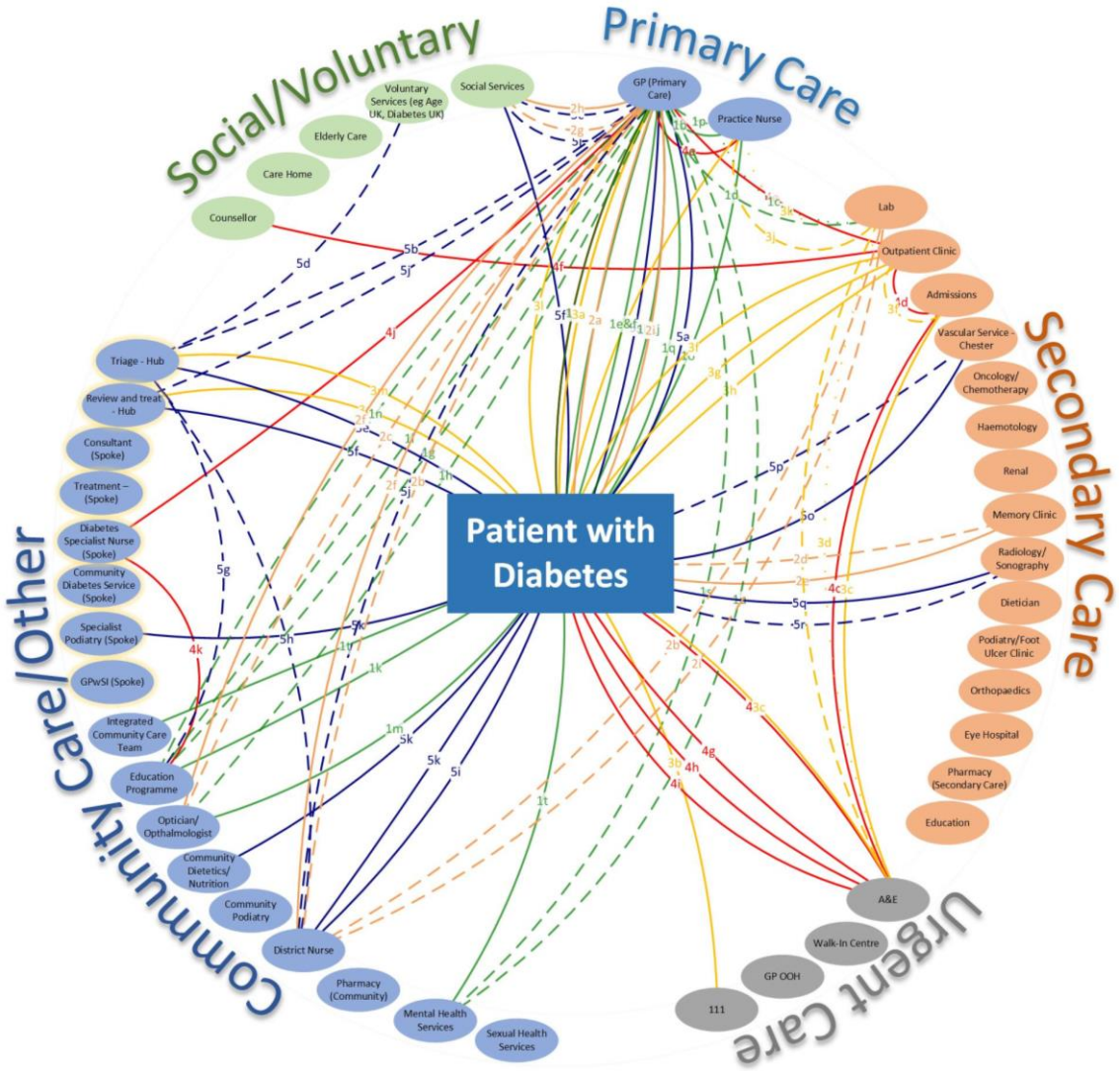
Healthy Wirral

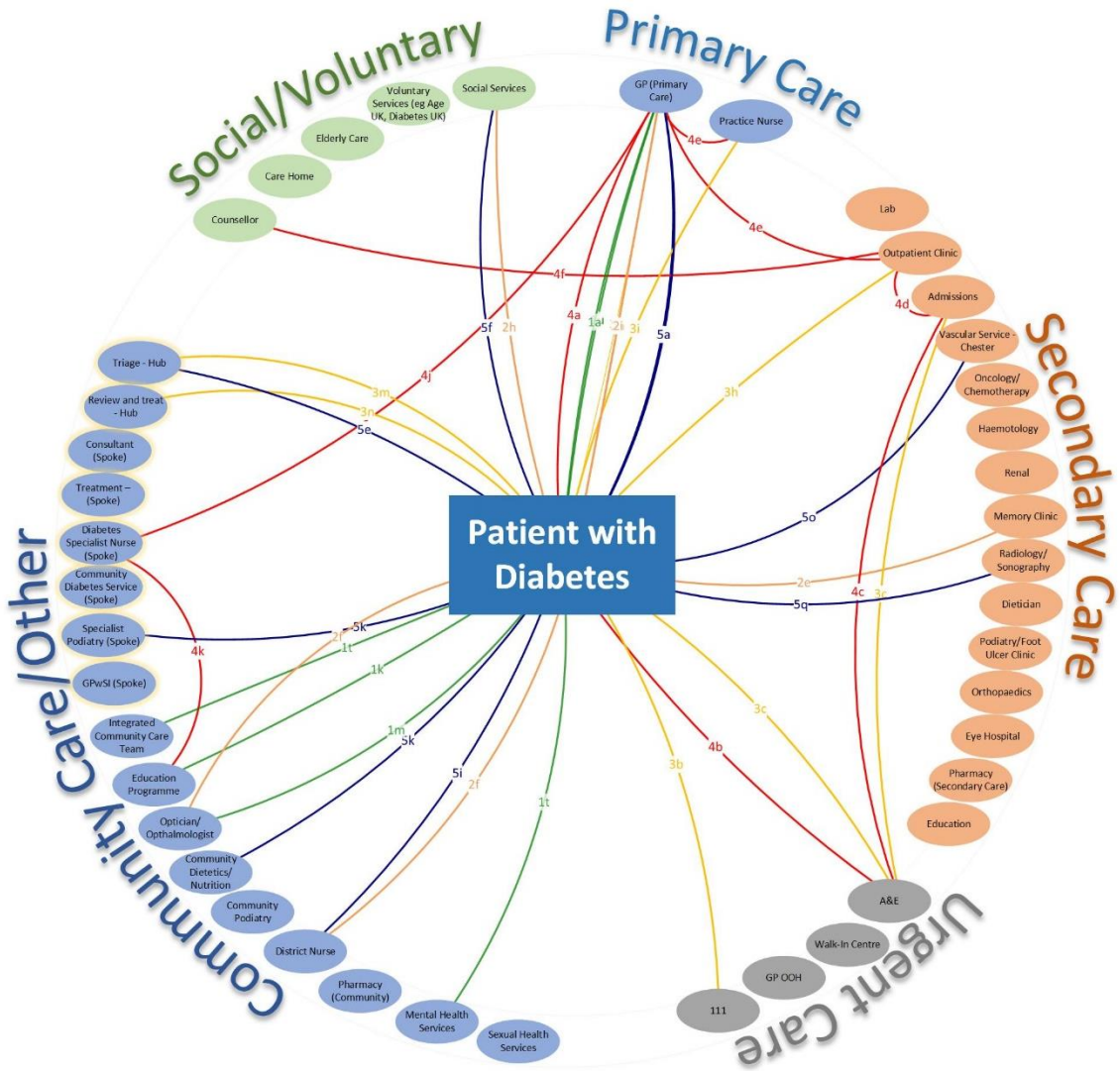
- Gap von ~200m € bezüglich prognostizierter angeforderter Leistung und der möglichen finanziellen Vergütung
- Bevölkerungswachstum:
  - 319,863 in 2011 zu 324,226 in 2021
- Anzahl der über 85 jähringen wird sich in den nächsten 20 Jahren verdoppeln (Abstieg multi-morbider Patienten)
- Große regionale Abhängigkeit des Gesundheitstatus, selbst innerhalb der Region Wirral





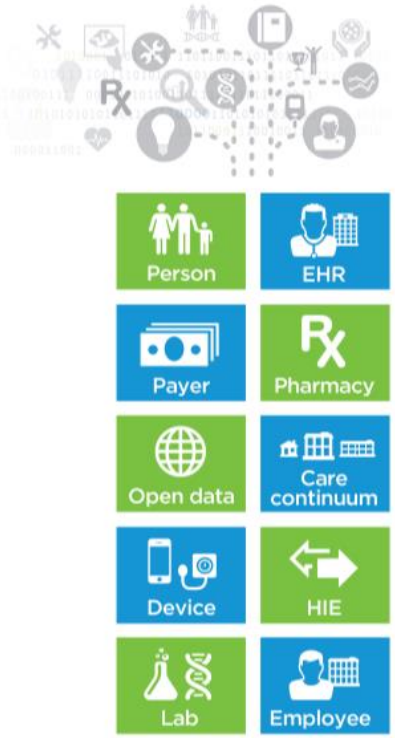
Healthy Wirral





HealtheIntent platform

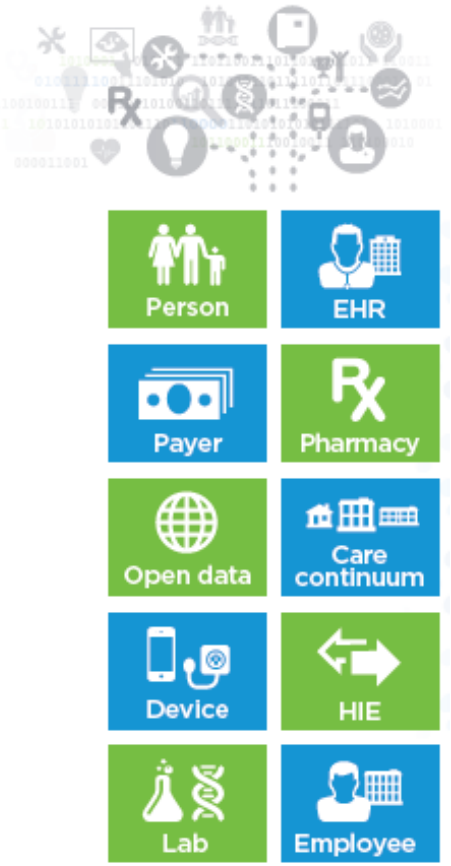
Aggregate and normalize



Create and apply intelligence

Act and measure

HealtheIntent Platform - Aggregate and normalize



Create organized, meaningful concepts

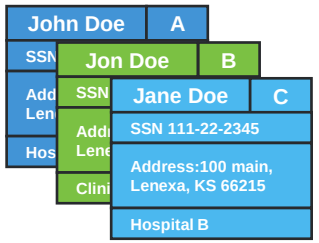
LOINC ICD-10
Medi-Span **CPT**
NDC **ICD-9**
MEDCIN

Allergies	Medications
Conditions	Procedures
Immunizations	Visits
Lab results	Vitals

Medications Most recent
Aspirin (Multum d00170) Mar 13, 2016

Medication	Date	Source
aspirin 300 mg oral delayed release tablet	3/24/2014	Westwatch Bay
aspirin 227.5 mg oral gum	10/17/2013	Baseline East
ASA 500 MG Oral Tablet [Bayer Aspirin]	9/23/2013	Westwatch Bay
Aspirin	4/23/2013	Get Well Now
aspirin	2/18/2013	Westwatch Bay
Aspirin	5/14/2012	Baseline East
aspirin 300 mg oral tablet	6/20/2011	Get Well Now

Match persons



Identify like-reference records

SSN First name **Phone**
DOB Last name
Address Race **Alias**
Gender Ethnicity

No link | Manual | Auto link

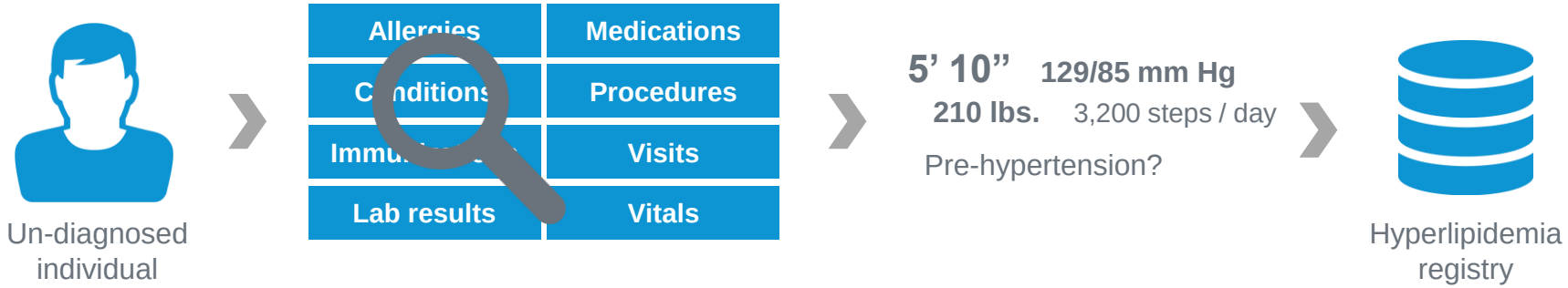
Determine similarity score to confirm records match

EID 2468	
Record ID A	Record ID B
John Doe	Jon Doe
SN 111-22-1234	SN 111-22-1234
DOB 11/30/75	11/30/75
100 Main, Lenexa, KS	100 Main, Lenexa, KS

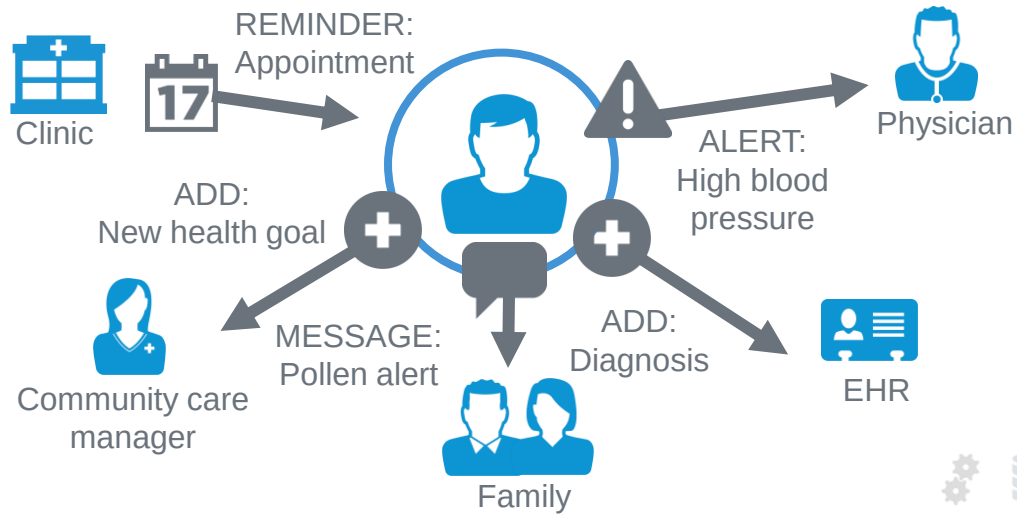
Assign unique EID number to linked records

HealtheIntent Platform - Create and apply intelligence

Infer new knowledge



Measure, monitor and predict health status



HealtheIntent Platform - Act and measure

Longitudinal record

Registries and scorecards

Community care management

Enterprise data warehouse

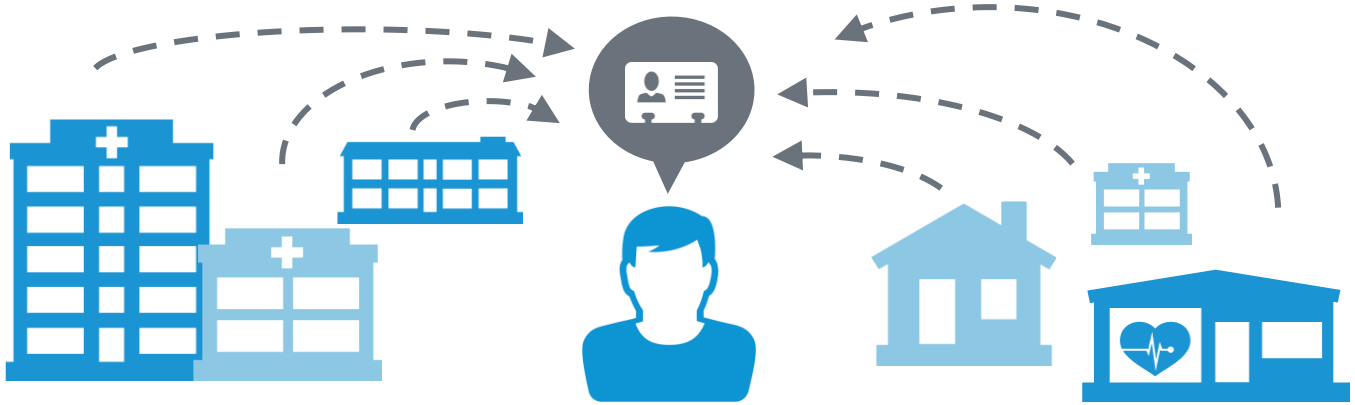
Referral and network management*

Contract management*

Consumer relationship management*

**Future planned solutions.*

Access record and plan anywhere, anytime



Create ecosystem of innovation

SMART on FHIR

Software development toolkit

APIs

Data syndication

Healthy Wirral

Scorecards | Registries | Administration

Authorised user | Apps

Wirral University Teaching Hospital NHS Foundation Trust (WUTH)

NHS Trust

18 Scorable Clinical Staff Members

23.07%

Scorecard

★ Top opportunity to improve score
Eye Exam

48% of measure data is completed

7,332 Scorable Persons

Clinical Staff Distribution by Composite Score

No members found for comparison

Registry Population Statistics

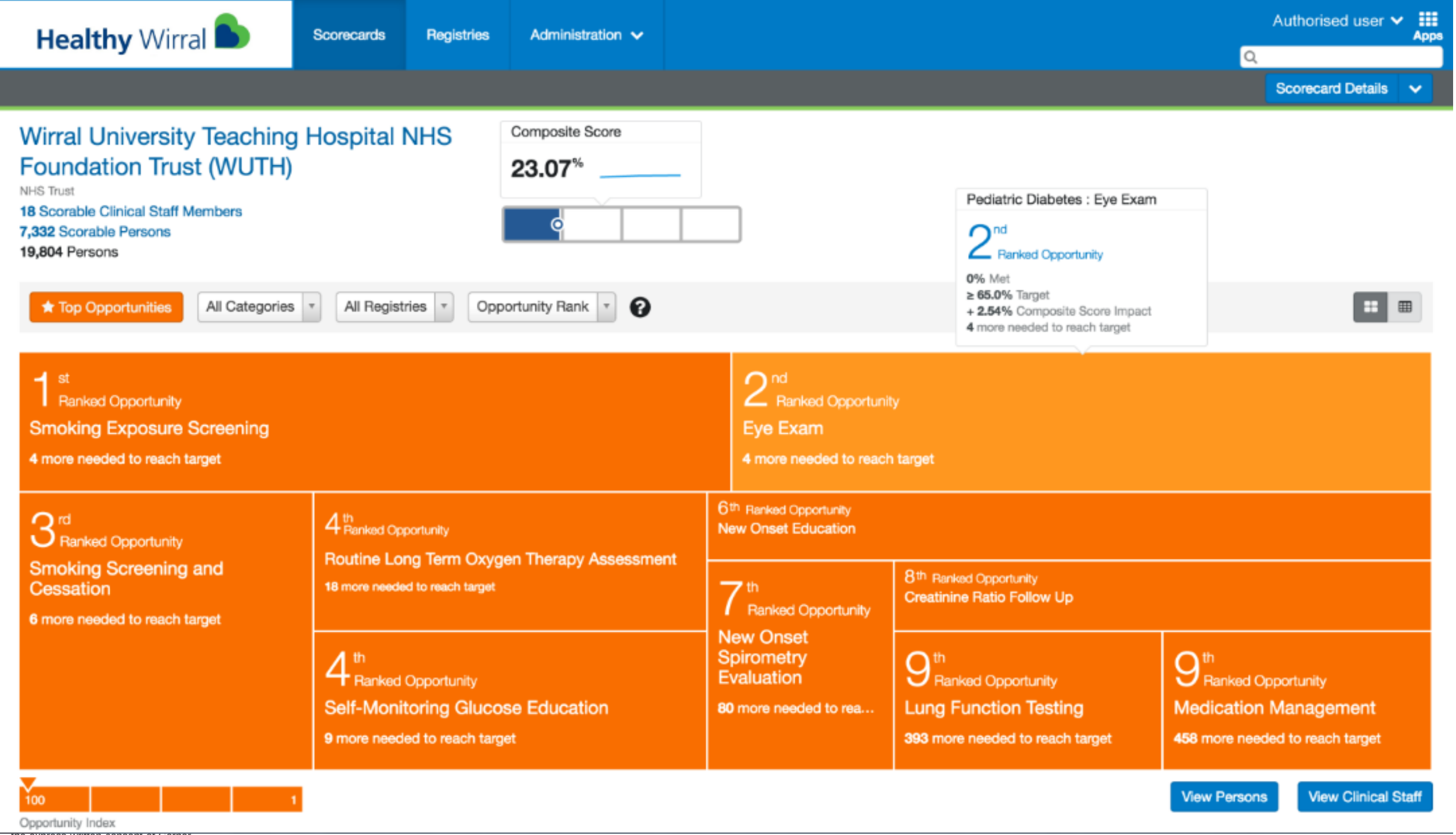
19,804 Persons

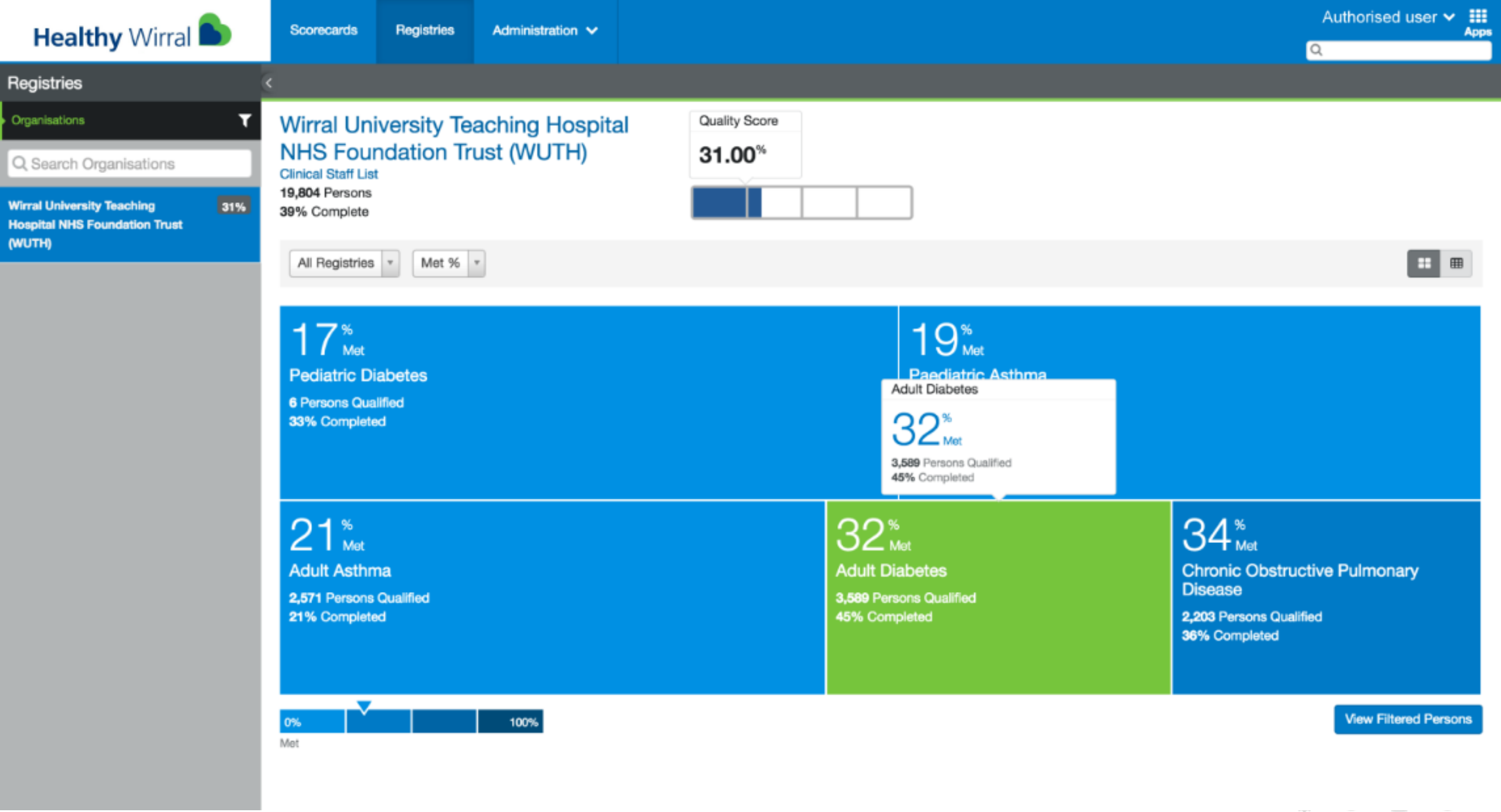
31.00% of measures achieved across the population

View registries performance

39% of measure data has been entered across the population

About HealtheRegistries


Healthy Wirral
Scorecards
Registries
Administration
Authorised user
Apps
Scorecard Details
Wirral University Teaching Hospital NHS Foundation Trust (WUTH)
NHS Trust
18 Scorable Clinical Staff Members
7,332 Scorable Persons
19,804 Persons
Composite Score
23.07%
Pediatric Diabetes : Eye Exam
2nd Ranked Opportunity
0% Met
≥ 65.0% Target
+ 2.54% Composite Score Impact
4 more needed to reach target
Top Opportunities
All Categories
All Registries
Opportunity Rank
1st Ranked Opportunity
Smoking Exposure Screening
4 more needed to reach target
2nd Ranked Opportunity
Eye Exam
4 more needed to reach target
3rd Ranked Opportunity
Smoking Screening and Cessation
6 more needed to reach target
4th Ranked Opportunity
Routine Long Term Oxygen Therapy Assessment
18 more needed to reach target
4th Ranked Opportunity
Self-Monitoring Glucose Education
9 more needed to reach target
6th Ranked Opportunity
New Onset Education
7th Ranked Opportunity
New Onset Spirometry Evaluation
80 more needed to rea...
8th Ranked Opportunity
Creatinine Ratio Follow Up
9th Ranked Opportunity
Lung Function Testing
393 more needed to reach target
9th Ranked Opportunity
Medication Management
458 more needed to reach target
100
1
Opportunity Index
View Persons
View Clinical Staff



Doe, John Peter
35 years Male DOB: 14 Oct 1981

Registries | Relationships | Clinical Information | Activity History

Make Changes | All | Not Achieved | Missing | Due | Expand

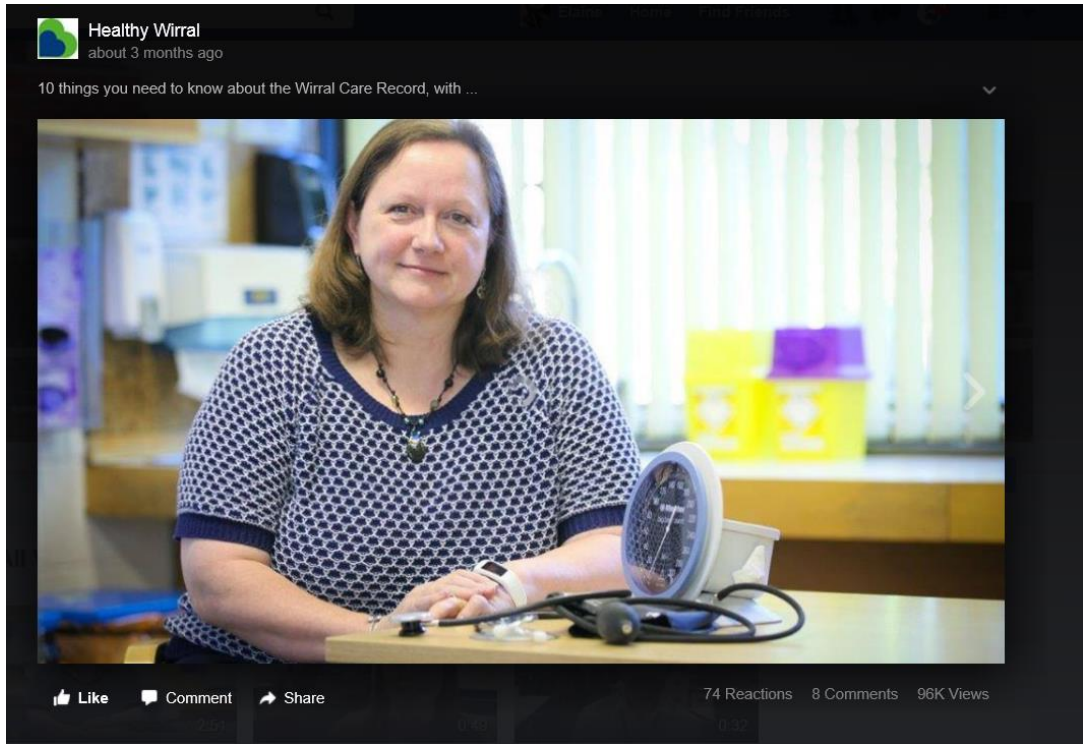
Adult Asthma
1 out of 8 Met

Adult Diabetes
5 out of 22 Met

Registry Supporting Facts

-- Annual Education — Now	-- Aspirin Therapy — Now	-- Blood Pressure < 140/80 — Now	-- Blood Pressure < 150/90 — Now	-- Blood Pressure Measurement — Now
17 May 2016: 36.400 kg/m2 BMI Assessment	6 Dec 2013: Not Achieved Creatinine Ratio Screening — 6 Dec 2014	24 Jan 2014: Not Achieved Diet and Exercise Education — 23 Jun 2015	-- Erectile Dysfunction Education — Now	-- Eye Exam — Now
-- Foot Exam — Now	5 Sep 2016: 63 mmol/mol HbA1c < 48 mmol/mol — 5 Sep 2017	5 Sep 2016: 63 mmol/mol HbA1c < 58 mmol/mol — 5 Sep 2017	5 Sep 2016: 63 mmol/mol HbA1c < 72 mmol/mol — 5 Sep 2017	9 Dec 2015: Not Achieved Influenza Vaccination — Now
29 Apr 2016	29 Apr 2016	--	6 Oct 2016	7 Jul 2014

Patient Engagement / Why we have to re-think?



Social Media Campaign

- 330k population
- Covering approx. 290k people
- 96k views face book alone
- 700 people opt out total

"It is a future that empowers patients to take much more control over their own care and treatment. It is a future that dissolves the classic divide, set almost in stone since 1948, between family doctors and hospitals, between physical and mental health, between health and social care, between prevention and treatment. One that no longer sees expertise locked into often outdated buildings, with services fragmented, patients having to visit multiple professionals for multiple appointments, endlessly repeating their details because they use separate paper records. One organized to support people with multiple health conditions, not just single diseases. A future that sees far more care delivered locally but with some services in specialist centers where that clearly produces better results".

(Source: Chapter 1, NHS Five Year Forward View)

Bestehende Hürden in Deutschland

- Föderale Datenschutzstruktur in Deutschland (20 verschiedene Gesetze)
  - Regionale Verbünde werden damit faktisch auf Bundesländer und/oder Träger begrenzt
- Fehlender Einsatz einer übergreifenden Semantik/Ontologie
  - Kein verbindlich anzuwendenes Terminologie System vorhanden (fehlende Snomed CT Lizenz in Deutschland)
  - Keine ausreichende Nutzung international anerkannter Terminologien ala LOINC
- Finanzierungssystem – weiterhin zu starre Trennung in Sektoren (ambulant, stationär, Reha, Altenpflege) – keine übergreifende Behandlung mit dem Patienten im Mittelpunkt, da es keine (oder sogar gegenläufige) finanzielle Anreize gibt
- Nicht ausreichende Digitalisierung der einzelnen Provider (HIMSS Platzierung Deutschland) – keine ausreichende IT Budgets in den einzelnen Sektoren

Empfehlungen

- **Wandel vom reaktiven zum proaktiven Gesundsheitswesen auf allen Ebenen unterstützen**
  - Den Patienten als Partner im Gesundsheitswesen begreifen (jeder hat einen Arzt in sich)
  - Stärkung der Rolle des Bürgers in der Vorsorge durch Erstattungsmodelle (Krankenkassen)
  - Wandel zu populationsbasierten Vergütungsmodellen (volume-based to quality-based Incentives)
  - Stärkung von Gesetzen, die die traditionelle Sektorentrennung überwinden (§137 ff)
  - Stärkung der betrieblichen Gesundheitsvorsorge durch Steuersparmodelle (BMF)
  - Ergänzung des Morbi RSA durch einen Gesunderhaltung-RSA (d.h. Kassen, deren Patienten sich besonders aktiv an der Vorsorge beteiligen erhalten mehr Geld)
- **Digitalisierung im deutschen Gesundheitswesen nachhaltig unterstützen und incentivieren (Anreizmodelle)**
  - HIMSS Level Modell als Differentiator
  - Nutzung allgemein anerkannter internationaler Standards (LOINC, UMLS)
  - Verbindliche Einführung des SNOMED CT (BMG, Ausführender DIMDI)
  - SMART/FHIRE Unterstützung der industriellen Partner
  - Eine allgemeine Datenstruktur für eine deutschlandweite Akte (bvitg,und andere Verbände)
- **Ein nationales Datenschutzgesetz für das Gesundheitswesen (Politik)**
- **Stärkung der übergreifenden und kohortenbasierten Forschung (BMBF, aber auch EU)**

MEMORIAL HERMANN

#1 performing MSSP organization

400K+
At risk lives

3.5 million
Unique patients in registries

Number of Providers

6,130
users provisioned to use registries through SCIM

"We trust this data. We did not trust what we were getting from Crimson, it was a black box"

"We now have insight that the payers do not have"

- Nicole Clark Luck
Chief Financial Officer, Memorial Hermann Physician Network

Capability Timeline

- Population Health Longitudinal Record – Q2 2015
- Chronic Disease Management – Q2 2015
- Enterprise Dara Warehouse - Q2 2015
- Clinical Documentation Integrity Management– Q2 2016
- Electronic Patient-Provider Communication- 2012

Next Phase(s)
- Additional Analytics
- Care management
- Enterprise Consumer Digital Engagement

2015 Outcomes

- 50,000 Lives in Medicare ACO
- **$89 million** in recognized savings
- **$41 million** in shared savings earnings

Data Sources

Cerner
eClinicalWorks
HIE
CMS
MEMORIAL HERMANN Health Plan Health Solutions Health Insurance Co
Humana
Commercial
Medicare Advantage
aetna
Whole Health
Commercial
Medicare Advantage

HealtheIntent stats

DATA VARIETY

309
total data connections

12
connected EHR systems (Epic, AllScripts…)

36
connected claims & payer vendors

2,292+
live data files

SCALABILITY

25.6M
linked disparate records; 90% via intelligence

4.9 PB
of data storage

110K
daily processed jobs

INTELLIGENCE

31
standard registries; 350+ measures

5
UK registries

63.5K+
concepts curated from 12M+ codes and 31+ standard terminologies; 425K proprietary codes translated

*Information is current as of April 2016