

**IBM Watson Health**

# Promises of Data-Driven Health and Care

## Update on Population Health Management

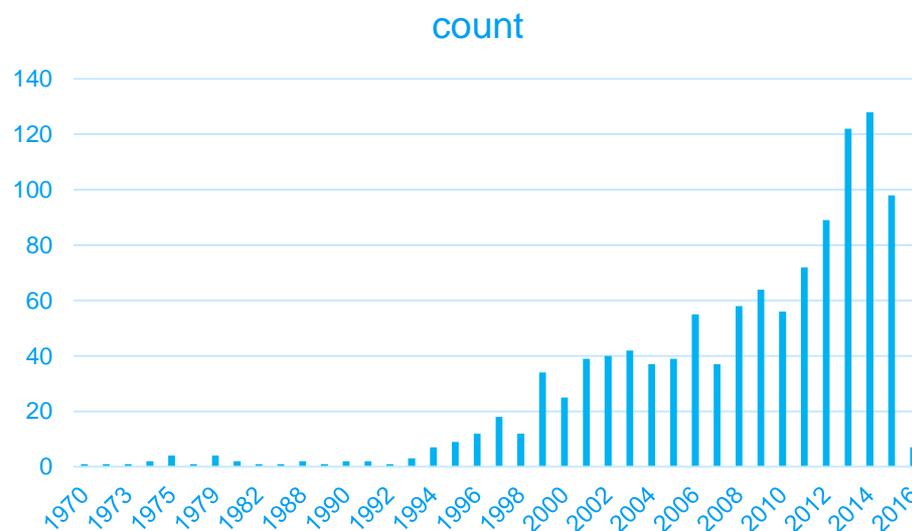
Angus McCann  
IBM Global Healthcare Team

[angus.mccann@uk.ibm.com](mailto:angus.mccann@uk.ibm.com)

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**EHTEL**  
EUROPEAN HEALTH TELEMATICS ASSOCIATION

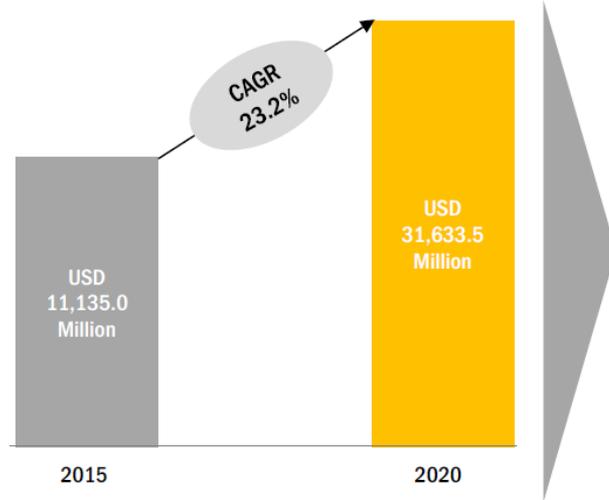




Pubmed search: title 'population health', + species = human. English language.

## 4.1 POPULATION HEALTH MANAGEMENT - MARKET OVERVIEW

**FIGURE 12** IMPLEMENTATION OF THE AFFORDABLE CARE ACT (ACA) IN THE U.S. IS DRIVING THE GROWTH OF THE POPULATION HEALTH MANAGEMENT MARKET



**MARKET OVERVIEW**

- The global population health management market is projected to reach USD 31,633.5 million by 2020
- Market growth is attributed to the implementation of the Affordable Care Act (ACA), incentives and investments by the federal government for the adoption of HCIT, rising aging population, and increasing prevalence of rising chronic disease cases
- North America is expected to account for the largest share—83.8%—of the population health management market in 2015
- North America is poised to be the fastest-growing market, growing at a CAGR of 23.5% from 2015 to 2020

Source: Center for Population Health Sciences, The Institute for Health Technology Transformation (iHT2), Healthcare Information and Management Systems Society (HIMSS), American Medical Group Association (AMGA), International Association of Health Policy (IAHP), Institute of Population Health (University of Manchester), Institute of Population and Public Health (IPPH), Public Health Agency of Canada, Caisse Nationale d'Assurance Maladie des Travailleurs Salariés (CNAMTS) (France), Expert Interviews, and MarketsandMarkets Analysis

### What **Makes** Us Healthy

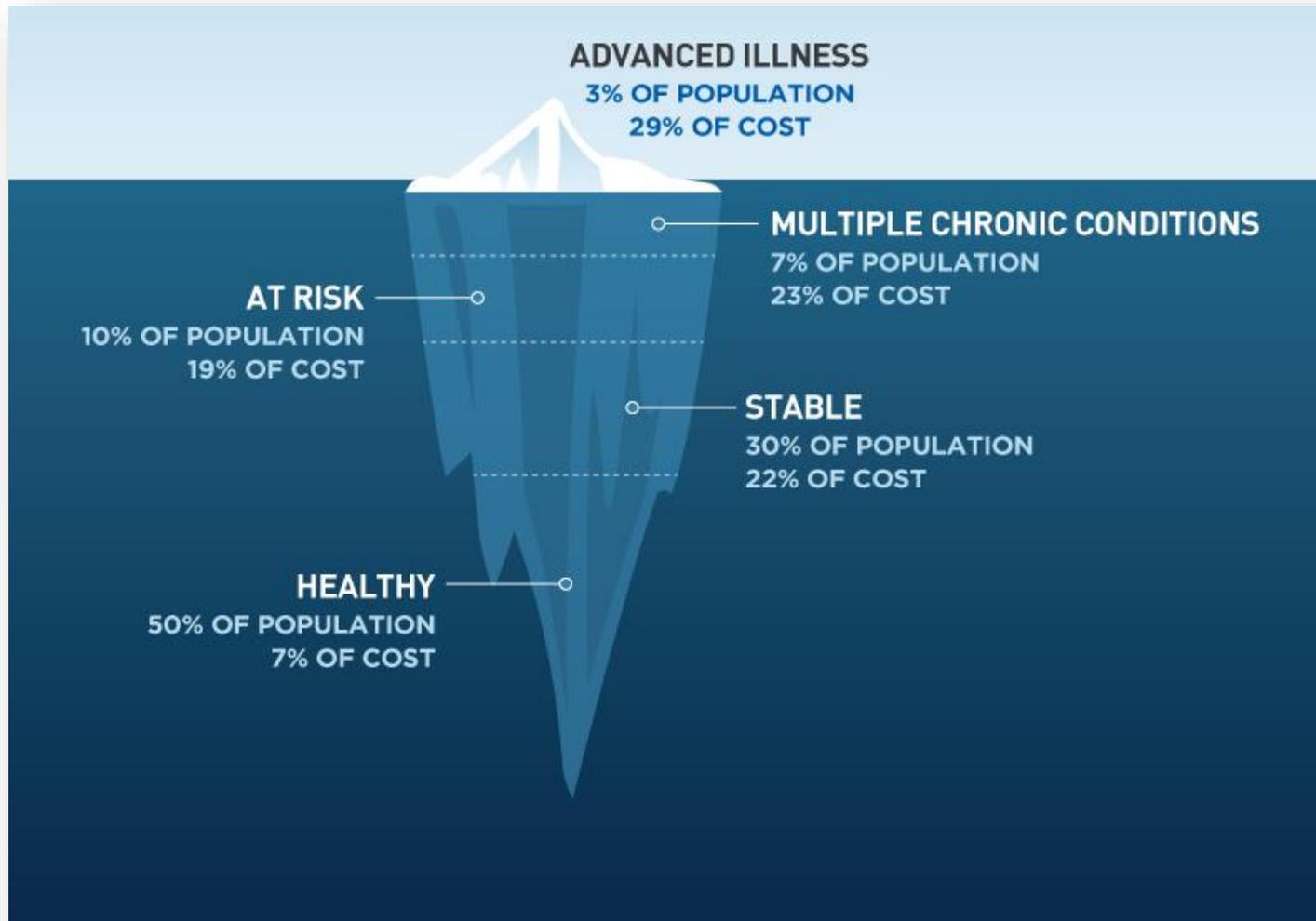


### What We **Spend** On Being Healthy



Source: Bipartisan Policy Center, "F" as in Fat: How Obesity Threatens America's Future (TFAH/RWJF, Aug. 2013)

# Focusing on sickest does not bend the cost trend



Spot the 'patient'...

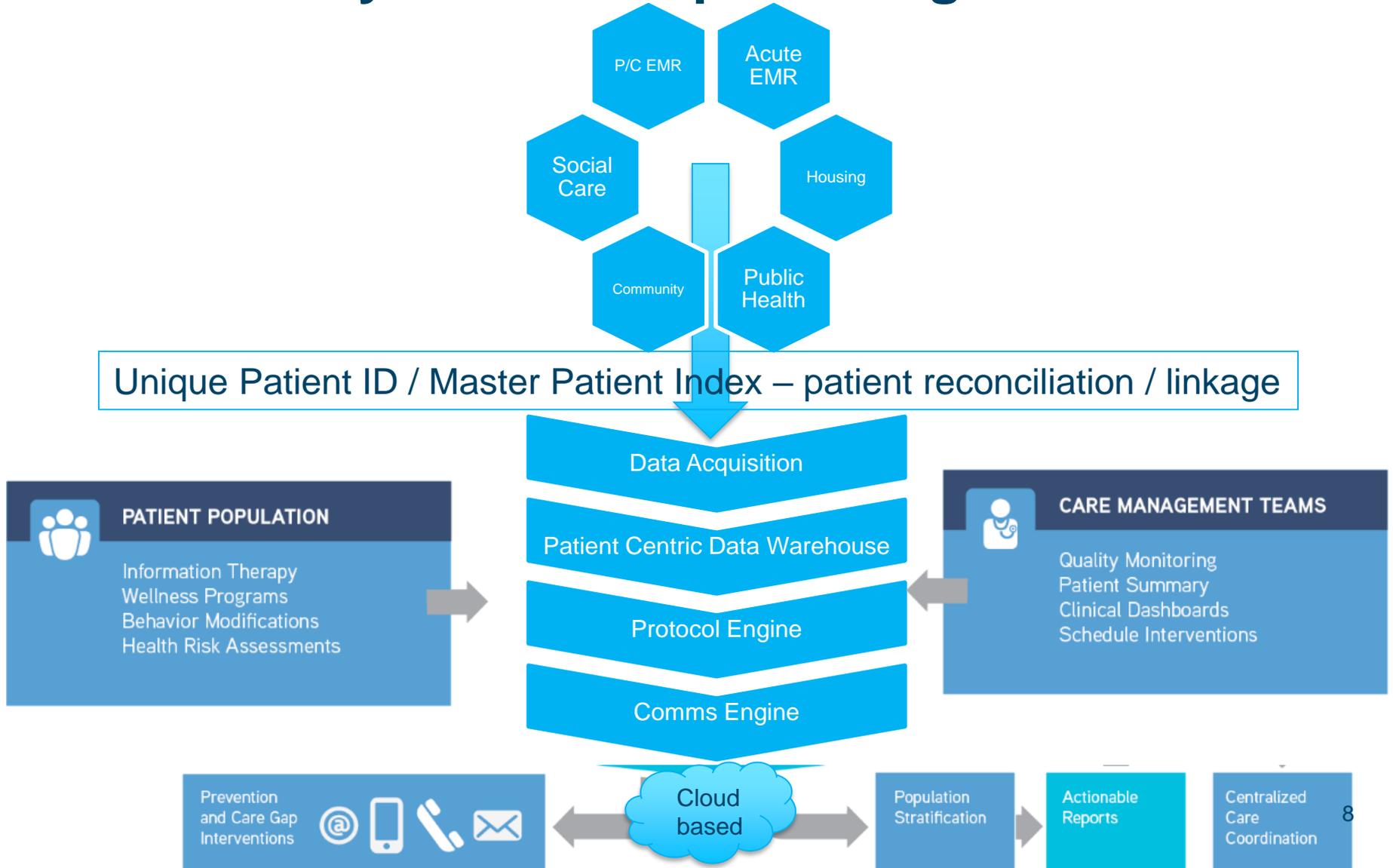


# Key facets of population health management

- Substantial use of data
- Comprehensive view of 'health' – physical, mental, whole person
- Early Intervention, Health Promotion and Prevention
- Wider determinants of health considered – eg Income maximisation, legal advice, housing, education
- Addressing lifestyle behaviours
- Population stratification / risk prediction
- Care pathways defined and used, automated management
- Self-management
- Integration across agencies & team based care

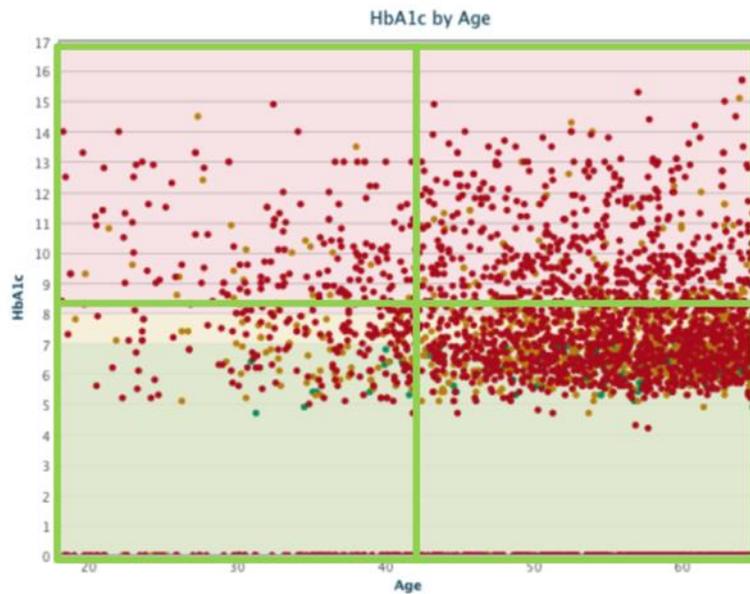


# New delivery models require integrated data...



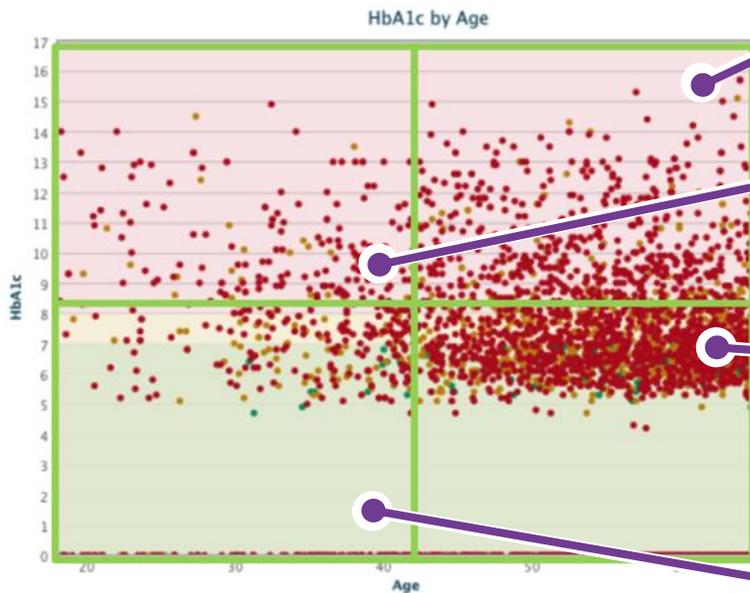
# Taking Action on “Actionable Data”

Understand the population:



# Taking Action on “Actionable Data”

Address entire population with targeted interventions



1 All >9 A1c and no planned GP visit are sent a text message to call care manager

2 All >9 and BMI >35 are sent an automated invitation to a group visit with a diabetes dietician

3 All between A1c 7 and 9 are sent an automated message to encourage visit website to take diabetes self-management course

4 All diabetics <7.0 are sent an email message emphasizing the importance of nutrition and exercise to maintain low A1c levels with a link to a mobile app to track their progress

# Bring people into the system (appropriately)



**Using Physician-Led Automated Communications to Improve Patient Health**

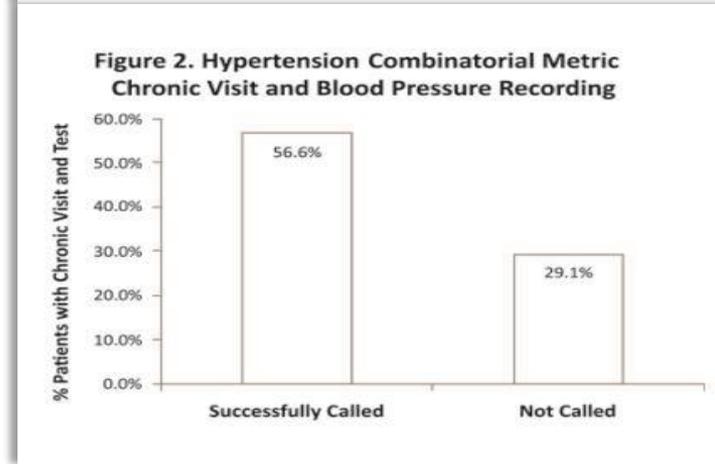
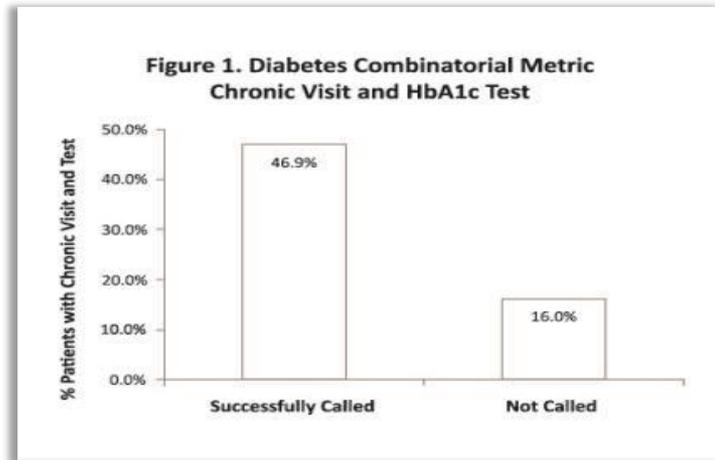
Anita Rai, MD<sup>1</sup>, Paul Probst, MD<sup>2</sup>, Richard Haddock, MD, MPH, PhD<sup>2</sup> and Ted Costantino<sup>3\*</sup>

**Abstract**

One common barrier to health care delivery in the United States is an emphasis on effectively managing the care of patients with chronic conditions. A landmark study by McGuire et al demonstrated that patients receive about 50% of the treatment they need. While technological advances allow automated messages for identifying and reaching out to patients in need of treatment, the studies have evaluated their impact. The purpose of this study is to measure how an automated outreach program can be used to improve the quality of care for patients with diabetes and hypertension. Billing and electronic medical records data from a large health system in Wisconsin were analyzed, identifying patients with a history of diabetes and hypertension but no visits recorded in billing data within the study window in the past 6 months. The outcomes of interest were the occurrence of a documented visit and a necessary test within 6 months of the notification date. Diabetes patients who were successfully contacted were significantly more likely to have had a documented visit and an HbA1c test (odds ratio [OR]: 4.41, 95% confidence interval [CI]: 3.07-5.40) than their counterparts who were not contacted. As well, hypertension patients were significantly more likely to have both a chronic care-related visit and a systolic blood pressure reading recorded in an electronic medical record (OR: 3.18, 95% CI: 2.04-4.95). An automated patient identification and outreach program can be an effective means to supplement existing practice patterns to ensure that patients with chronic conditions in need of care receive the necessary treatment. (Population Health Management 2014;14:xxx-xx)

**Introduction**

Diabetes mellitus and hypertension are among the most common chronic diseases and require ongoing care and clinical management with health care providers. The American Diabetes Association guidelines outline a goal for hemoglobin A1c (HbA1c) level that may be considered an optimal target, including HbA1c levels of 7.0% (15.0 mmol/mol) for the general population, 6.5% (8.0 mmol/mol) for patients with a history of diabetes, and 6.0% (7.5 mmol/mol) for patients with a history of diabetes and hypertension. Despite the guidelines, 50% of patients with diabetes and 30% of patients with hypertension do not receive appropriate care, including necessary follow-up, testing, adherence to quality indicators, and treatment.<sup>1</sup> A number of studies have established that adherence to office visits is important to clinical outcomes for patients with diabetes and hypertension. In addition, in a large observational study, Foster et al<sup>2</sup> found that patients who attended regularly low repeat visits or who have more frequent visits for predominantly lower priority conditions are more likely to receive recommended preventive care for diabetes. Foster et al<sup>2</sup> measured the relationship between annual appointments and glycemic control (glycated hemoglobin or HbA1c) in a large managed care population and found that frequently missed appointments were associated with poorer glycemic control and suboptimal diabetes care management practices. Selection of at least one visit per year in lower socioeconomic status patients with diabetes in well-studied regions that adherence to appointment behavior was a predictor of good diabetes control. Lastly, Sperkoff et al<sup>3</sup> showed that diabetes improved through continuity of care; patients who were seen by the same physician during office visits had better outcomes than those who saw any available physician. Similar findings have been documented for hypertension in the study by Costantino<sup>4</sup> in which better outcomes for both diabetes and hypertension, for example, in a large observational study, Foster et al<sup>2</sup> found that patients who

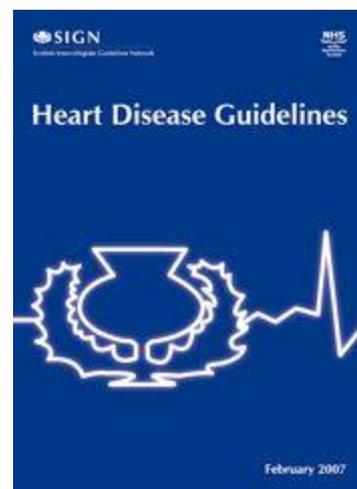


# Automate

**NICE** National Institute for Health and Care Excellence

2016 JUNE						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

[www.free-printable-calendar.com](http://www.free-printable-calendar.com)



# Patient engagement / self management



# Comprehensive view of 'health' / wider determinants

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Challeng... Challenges fa... Board Pa... NHS Lothian ... GPs s... x Simplify Overview... Plan for li... India: Interna... Commun... Global In... The post... DoubleTr...

www.pulsetoday.co.uk/home/finance-and-practice-life-news/gps-spend-fifth-of-consultation-time-on-non-health-proble

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## GPs spend fifth of consultation time on non-health problems

19 May 2015 | By Sally Nash

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**f SHARE ON FACEBOOK** GPs are spending nearly a fifth of their consultation time dealing with non-medical issues at a cost of nearly £400m, according to a new report from charity Citizens Advice.

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**ALISS (A Local Information System for Scotland) is a search and collaboration tool for Health and Wellbeing resources in Scotland. It helps signpost people to useful community support, and with an ALISS account you can contribute the many and varied resources that our local communities have to offer.**

# Team based care – integrated across agencies

IBM Cúram Social Program Management Care Coordinator

Welcome Susan Brown Preferences Log out

Home Care Plans Inbox Calendar

My Care Plans 4 month plan for Vincent Taylor Vincent Taylor

**Vincent Taylor**

1760, N Wells St, Chicago, Illinois, 60611 Map

Born 10/26/1966, Age 47

Marital Status Divorced

44 312 246 Ext 7788 vtaylor@gmail.com

RISKS BMI, Blood Pressure

SPECIAL CAUTIONS Safety Alert

CARE COORDINATOR Maria Taylor 263 312 86885 mtaylor@gmail.com

OUTCOME PLAN 4 month plan for Vincent Taylor

Home Clinical Notes Attachments Communications Client Contact

Home Add Picture... Customize

**Vitals**

<b>BMI</b> 27.45 01/02/2014 Patient Portal	<b>Heart Rate</b> 80 bpm 01/02/2014 10:22 EMR
<b>Blood Pressure</b> 125/85 mmHg 01/01/2014 09:00 Patient Portal	<b>Oxygen Saturation</b> 96% 01/02/2014 17:57 Case Coordinator Application

**Care Plan Activities**

Health Education	01/02/2014 - 01/05/2014
Monitor Blood Pressure	30/11/2013 -
Daily Exercise	28/11/2013 -
Counselling	24/10/2013 - 14/06/2014

**Care Team**

<b>Mrs Susan Brown</b> Care Coordinator sbrown@email.com 312 902 20406	<b>Dr. James Wilson</b> Primary Care Physician jameswilson@email.com 312 263 86885
<b>Mrs Jane Smith</b> Counsellor janesmith@email.com 312 902 20406	<b>Mrs Maria Taylor</b> Family Member mariataylor@email.com 312 346 5674
<b>Miss Debbie Williams</b> Physical Therapist dwilliams@email.com 312 583 87004	<b>Mrs Lisa Johnson</b> Health Home Nurse lisajohnson@email.com 312 922 17885

**Diagnoses**

Diabetes Mellitus Type 2	09/01/2014
Heart Disease	08/30/2014
Angina	01/01/2014 - 01/10/2014

**Medication**

Bisoprolol	09/01/2014 - 03/01/2015
Aspirin	08/30/2014 - 02/27/2015
Simvastatin	08/30/2014 - 02/27/2015
Metformin Hydrochloride Tablets	08/30/2014 - 02/27/2015
Victoza (Liraglutide)	01/01/2014 - 01/10/2014

**Factors**

Depression	Medium (22)	09/01/2014
Cognitive Issues	Memory Recall	09/01/2014
Anxiety	High (37)	09/01/2014
Behavioral Issues	Verbally Abusive	09/01/2014
Mood Decline	Yes	09/01/2014
Substance Abuse	No	09/01/2014

**Support Network**

<b>Betty Barnes</b> Personal Relationship Neighbour 313 587 69552	<b>Shelly Smith</b> Caregiver Sister 313 421 69552 101 Main Street, Albany, New York, NY 22235
<b>Fiona Jones</b> Personal Relationship Unrelated friend 313 587 68854 10 West Street, Albany, New York, NY 22235	<b>Frank Hanks</b> Personal Relationship Unrelated friend 312 346 5674 1 West, Albany, New York, NY 22235

# System Comparison

eg Identify variance in care by practice

Identify variances by practice to target improvement strategies



Patients
Appointments
Outreach
Population Insight
Care Management
PQRS
Transition
Reports

Condition Dashboard
Population Benchmarks
Comparison
Population Summary
Patient List
Care Opportunity

Report Date: August 25 2011

Quality Initiative: Quality Initiative    Groups: Medical Center, Westside    Providers: 17 Providers

Condition: Diabetes    Denominator: Operational

Recent Reports:  
 Annual HbA1C  
 Annual LDL-C testing  
 Physician Comparison

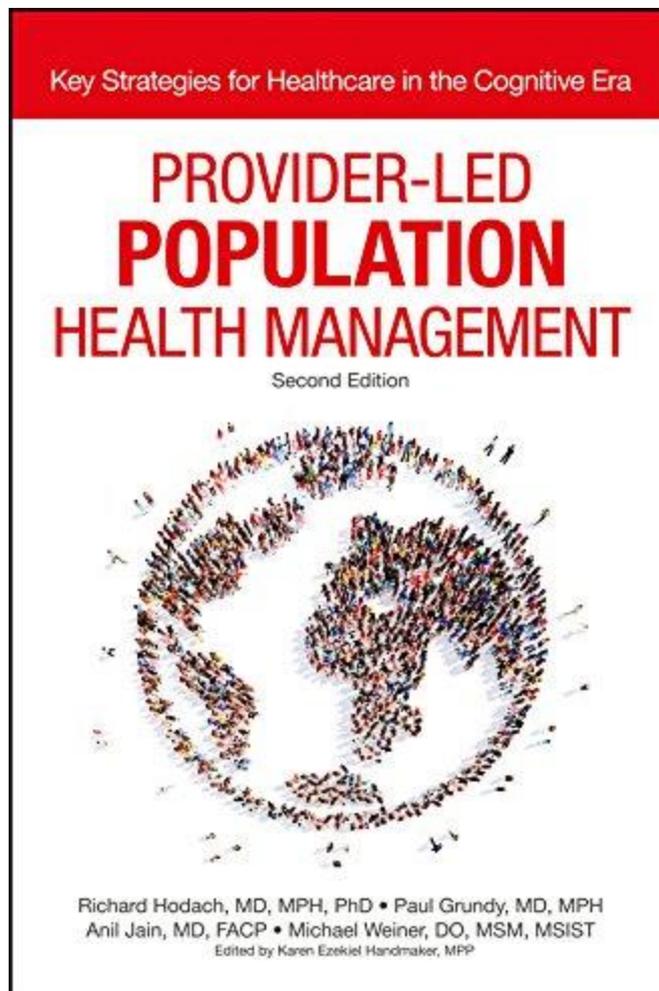
Grid Data:  
 Show Numerator  
 Show Denominator  
 Show Exclusions

## Comparison Report

[Compare](#) [Export](#)

Select Columns

	Total Diabetic Patients (18-75)	Annual HbA1c testing	Annual LDL-C testing	Diabetic Nephropathy Screening	HbA1c < 7.0	HbA1c > 9.0	LDL-C < 100	BP < 130/80	
<b>Groups</b>									
<input type="checkbox"/> Medical Center	2180	81% (1761)	75% (1628)	66% (1435)	40% (862)	11% (232)	46% (1010)	36% (781)	
<input type="checkbox"/> Westside	631	90% (576)	83% (523)	55% (346)	76% (354)	7% (42)	63% (397)	40% (251)	
<b>Providers</b>									
<input type="checkbox"/> Medical Center	Adams, Mark	105	90% (94)	85% (89)	52% (55)	53% (56)	10% (10)	44% (46)	43% (45)
<input type="checkbox"/> Medical Center	Allen, Grant	51	76% (39)	67% (34)	69% (35)	27% (14)	20% (10)	35% (18)	35% (18)
<input type="checkbox"/> Medical Center	Allen, Jane	71	90% (64)	77% (55)	70% (50)	30% (21)	21% (15)	45% (32)	31% (22)
<input type="checkbox"/> Medical Center	Clark, Anne	278	84% (233)	79% (219)	69% (193)	40% (111)	13% (36)	50% (138)	39% (109)
<input type="checkbox"/> Medical Center	Farr, Michael	78	85% (66)	69% (54)	60% (47)	44% (34)	13% (10)	41% (32)	36% (28)



**IBM Watson Health**

# Population Health Management - one person at a time

Angus McCann  
IBM Global Healthcare Team

[angus.mccann@uk.ibm.com](mailto:angus.mccann@uk.ibm.com)

 @eHealthAngus

