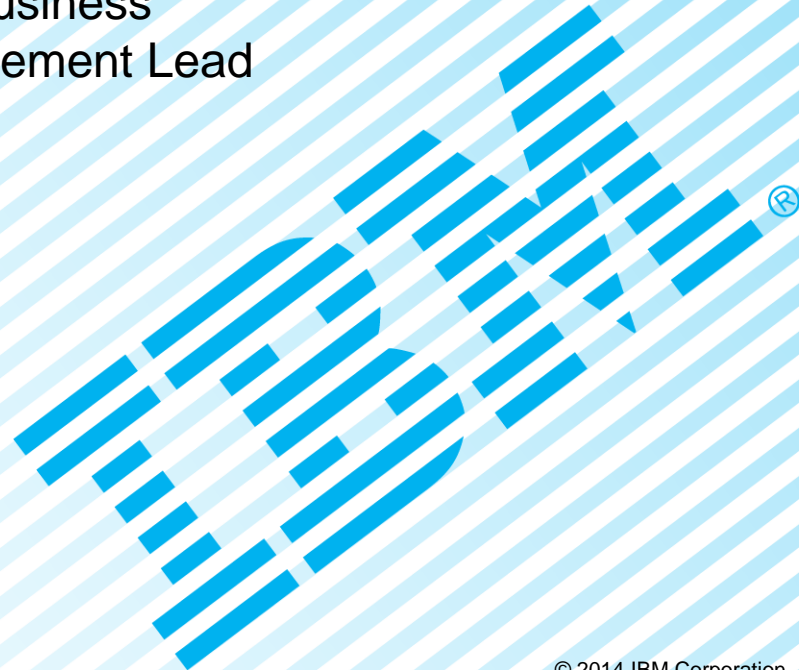


# IBM Care Management

## Patient-centric care realized

Farhana Alarakhiya - Director, Smarter Care Business  
Abha Keshava – Smarter Care Product Management Lead



# Healthcare and social care are merging – and rightly so...

“Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care.”

[Int J Integr Care 2013; Jan-Mar](#)

“Towards people-centred health services delivery: a Framework for Action for the World Health Organisation”

[\(WHO\) European Region. Int J Integr Care 2013; Oct-Dec](#)

“Integration of health and social care would better safeguard adults from harm”

[BMJ 2013; 346:f3266](#)

China – “Healthy China 2020”: radical social health insurance reforms

[The Economist](#)

New accountable care organizations save Medicare \$372 million

[The Buffalo News](#)

Integrated information is transforming health and social services

[South Wales Guardian](#)

## Let me introduce you to Mary Reynolds

Retired primary  
school teacher



One daughter  
who works  
full-time

Lives on her own  
in a single  
bedroom  
apartment in the  
city

Suffers from  
asthma and  
diabetes

Other family  
support available  
intermittently, but  
they are outside  
the city

## Mary's health and overall wellness are declining

4 emergency  
room visits in past  
3 months



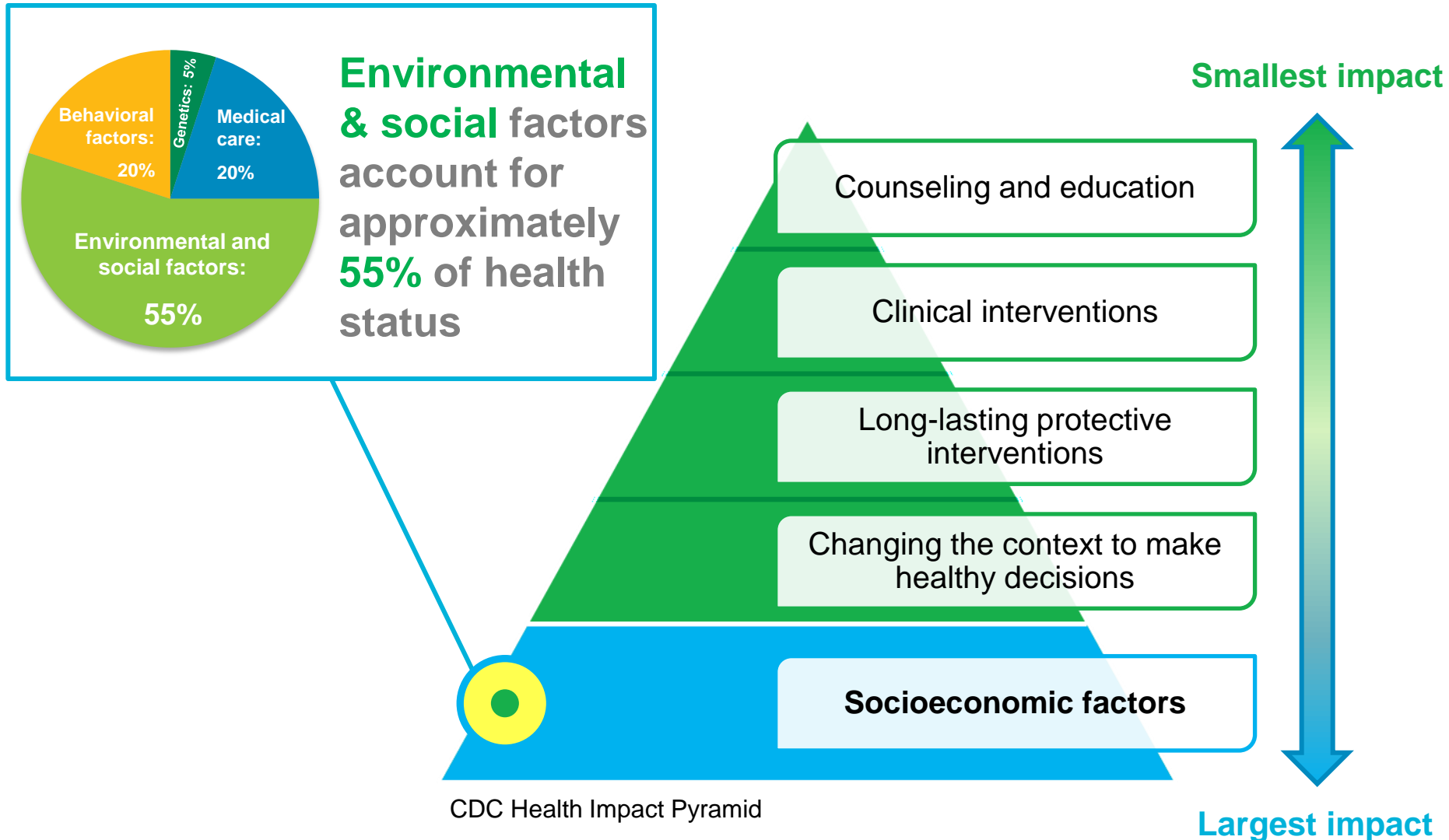
Reliant on public  
transportation

She is  
increasingly  
Isolated &  
depressed

Growing frail and  
her independence  
is in jeopardy

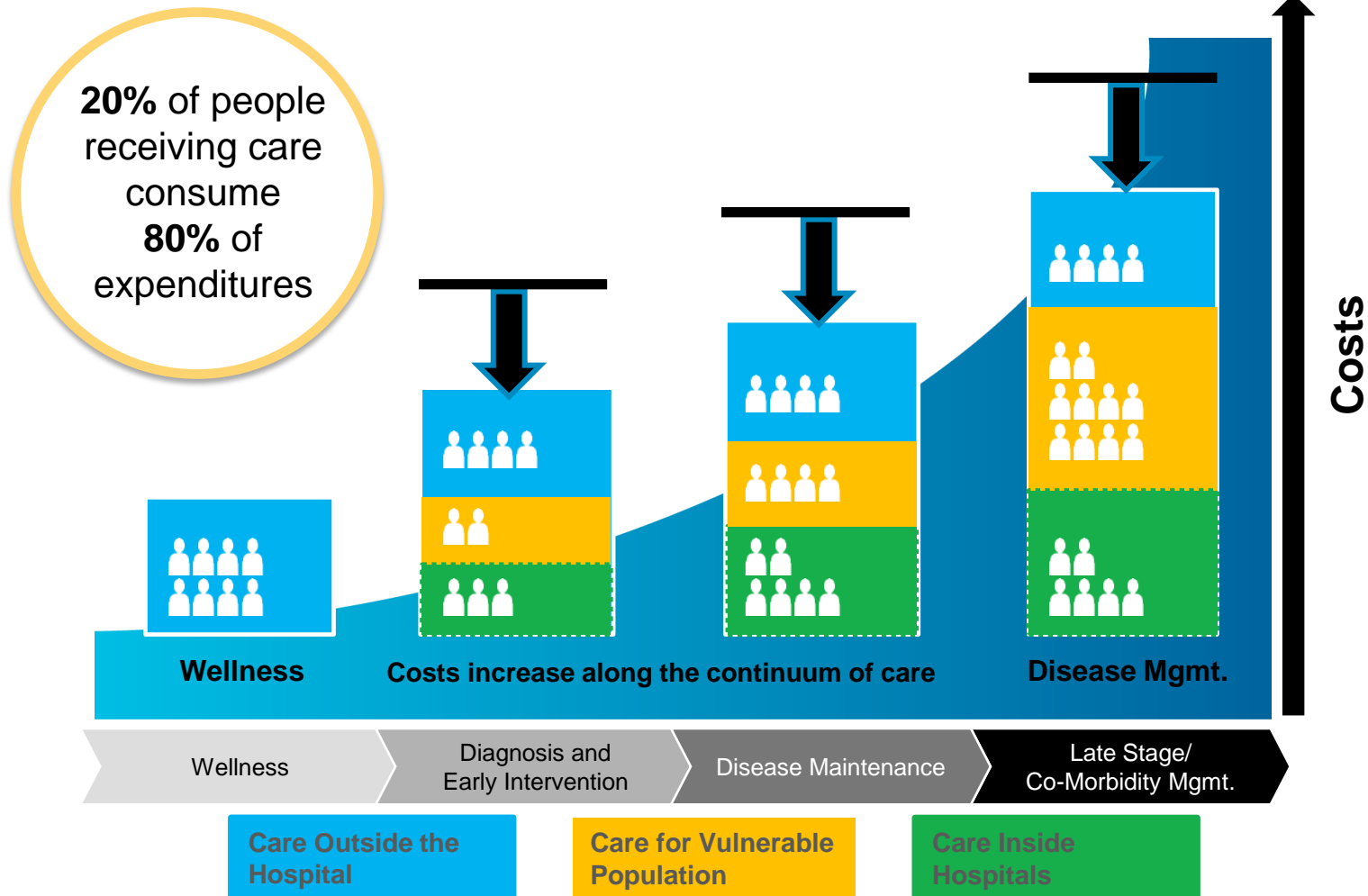
Reluctant to ask for  
assistance

# The relationship between socio-economic factors and health



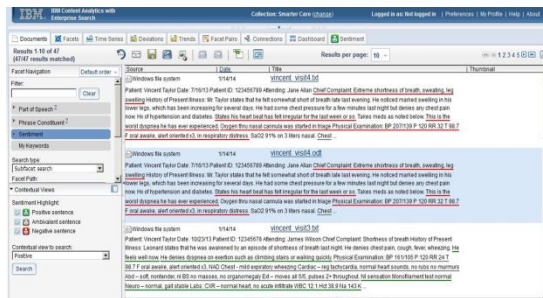


Solutions supporting holistic care management reduce costs and deliver better quality outcomes specifically for vulnerable populations





# IBM Care Management defined – How to help Mary and clients like her



Patient Centered, Team Based Care

Standards Driven Integration Support

Healthcare Facts Identification in Unstructured Data



## Patient-centered, team-based care

- Visualize client's bio-psycho-social profile in 360 degree page
- Receive referrals for high cost/need individuals leveraging configurable workflow and automatically create an outcome plan
- Use intuitive and flexible outcome planning interface to compose comprehensive care plan for Mary
- Collaborate across diverse stakeholders efficiently coordinating care, locating and referring care providers and optimizing resources

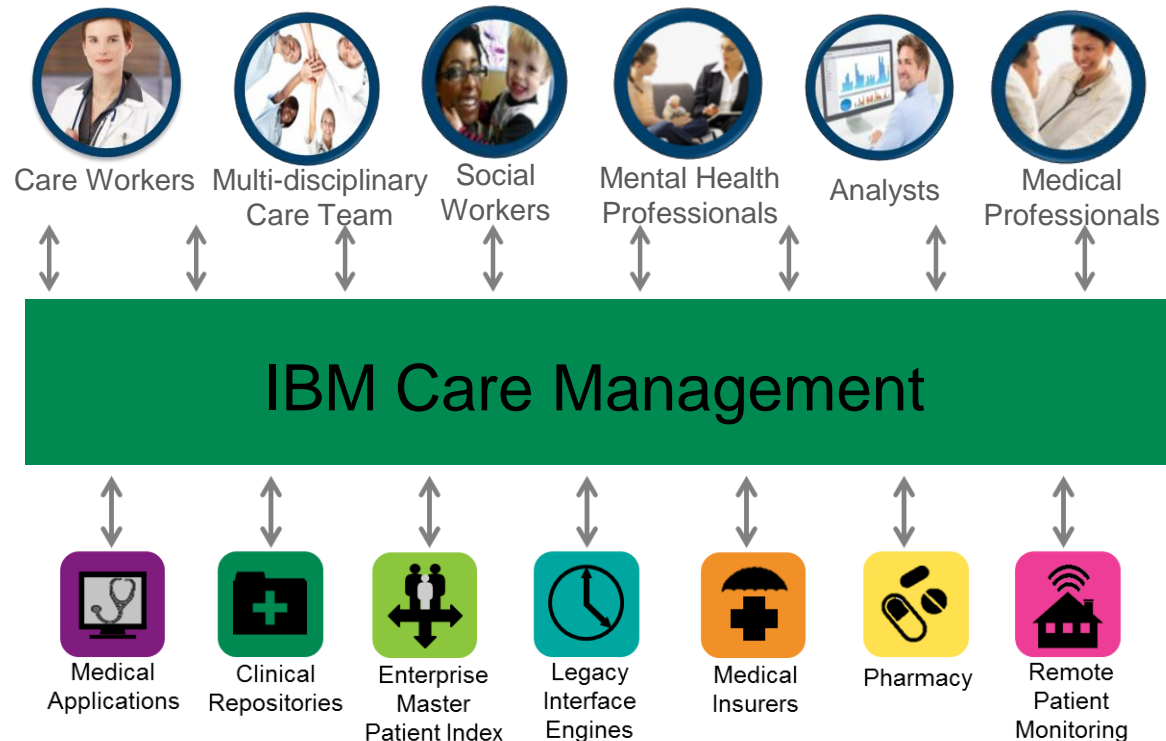
The screenshot displays the IBM Cúram Social Program Management interface for a Care Coordinator. The main view is for Vincent Taylor, showing a 360-degree profile with various sections:

- Header:** Patient name (Vincent Taylor), address (1760, N Wells St, Chicago, Illinois, 60611), birth date (Born 10/26/1966, Age 47), marital status (Divorced), phone (44 312 246 Ext 7788), and email (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.
- Vitals:**
  - BMI: 27.45 (01/02/2014, Patient Portal)
  - Blood Pressure: 125/85 mmHg (01/01/2014 09:00, Patient Portal)
  - Heart Rate: 80 bpm (01/02/2014 10:22, EMR)
  - Oxygen Saturation: 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
- 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
- Care Team:**
  - Mrs Susan Brown: Care Coordinator (sbrown@email.com, 312 902 20406)
  - Mrs Jane Smith: Counsellor (janesmith@email.com, 312 902 20406)
  - Miss Debbie Williams: Physical Therapist (dwilliams@email.com, 312 583 87004)
  - Dr. James Wilson: Primary Care Physician (jameswilson@email.com, 312 263 86885)
  - Mrs Maria Taylor: Family Member (mariataylor@email.com, 312 346 5674)
  - Mrs Lisa Johnson: Health Home Nurse (lisajohnson@email.com, 312 922 17885)
- Support Network:**
  - Betty Barnes: Personal Relationship, Neighbour (313 421 69552)
  - Fiona Jones: Personal Relationship, Unrelated friend (313 587 68854, 10 West Street, Albany, New York, NY 22235)
  - Shelly Smith: Caregiver, Sister (313 421 69552, 101 Main Street, Albany, New York, NY 22235)
  - Frank Hanks: Personal Relationship, Unrelated friend (312 346 5674, 1 West, Albany, New York, NY 22235)

360 Degree View - Visualization of  
bio-psycho-social profile

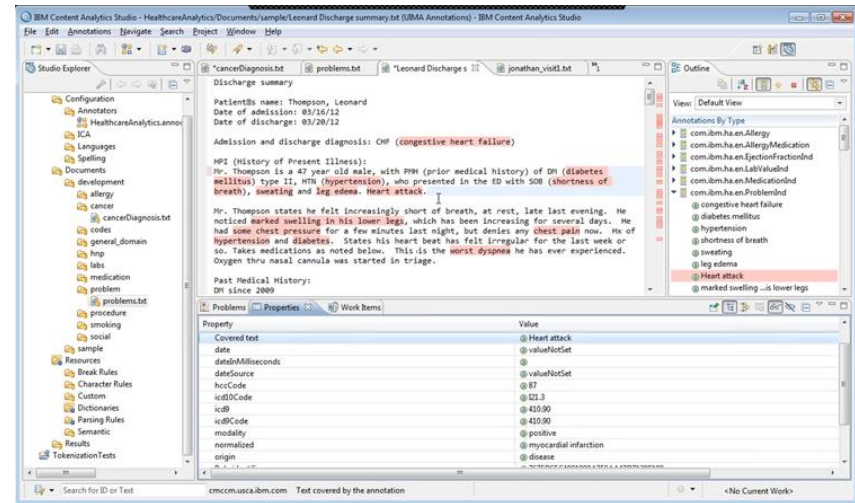
## Standards-driven integration support

- Support bi-directional integration with EMRs and other source systems following health care standards for data exchange
- Leverage graphical mapping tooling, connectors (nodes), IHE, HL7, and Continua schemas and development pattern for easy integration
- Unify and synchronize fragmented clinical, social and behavioral health information to create Mary's personalized care plan



# Healthcare fact identification in unstructured data

- Mine unstructured information that accounts for 80% of health and social care data and convert to structured data for an enriched understanding of Mary
- Parse unstructured data to bring insights to the point of care where needed most
- More than 100 dictionaries and 800 parsing rules extract & map to diagnoses, procedures, labs and medications using industry standards like ICD-10, CPT, SNOMED, RXNORM



Accurately identify and extract facts from text including negation

I reviewed **Elizabeth** at our clinic today. **She** was referred to us by **Professor Q'Mahony** for further evaluation. **She** complains of **breathlessness with exertion** and **decreased exercise tolerance with intermittent palpitations**. **She** did not have any **cough** or **sputum production**, also no **orthopnea** or **paroxysmal nocturnal dyspnea**, or **angina**. **She** had a suspected **myocardial infarction** in 2001, echocardiography showed good left ventricular systolic function and normal valves. There is no history of **hypertension**, **diabetes** or **hyperlipidaemia**. Her current medications include **Eltroxin 50 ugs daily**, **Nu-Seals Aspirin 75 mgs daily**, **Lanoxin PG 0.25 mgs daily**, **Salbutamol inhaler 2 puffs pm** and **Beclazone 250 mgs two puffs twice daily**.

Elizabeth "is the" patient

0.25 mgs daily "dosage of" Lanoxin

Prof. Q'Mahony "is the doctor of" Elizabeth.

Elizabeth "does not suffer from" hypertension

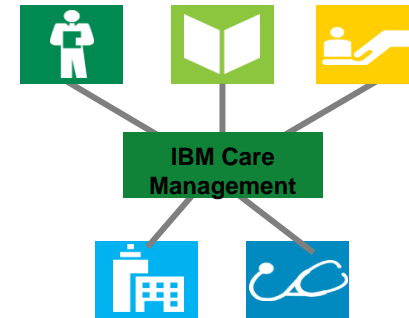
Elizabeth "does suffer from" myocardial infarction

→ English ←

Accurately interpret and assign values to ambiguous statements

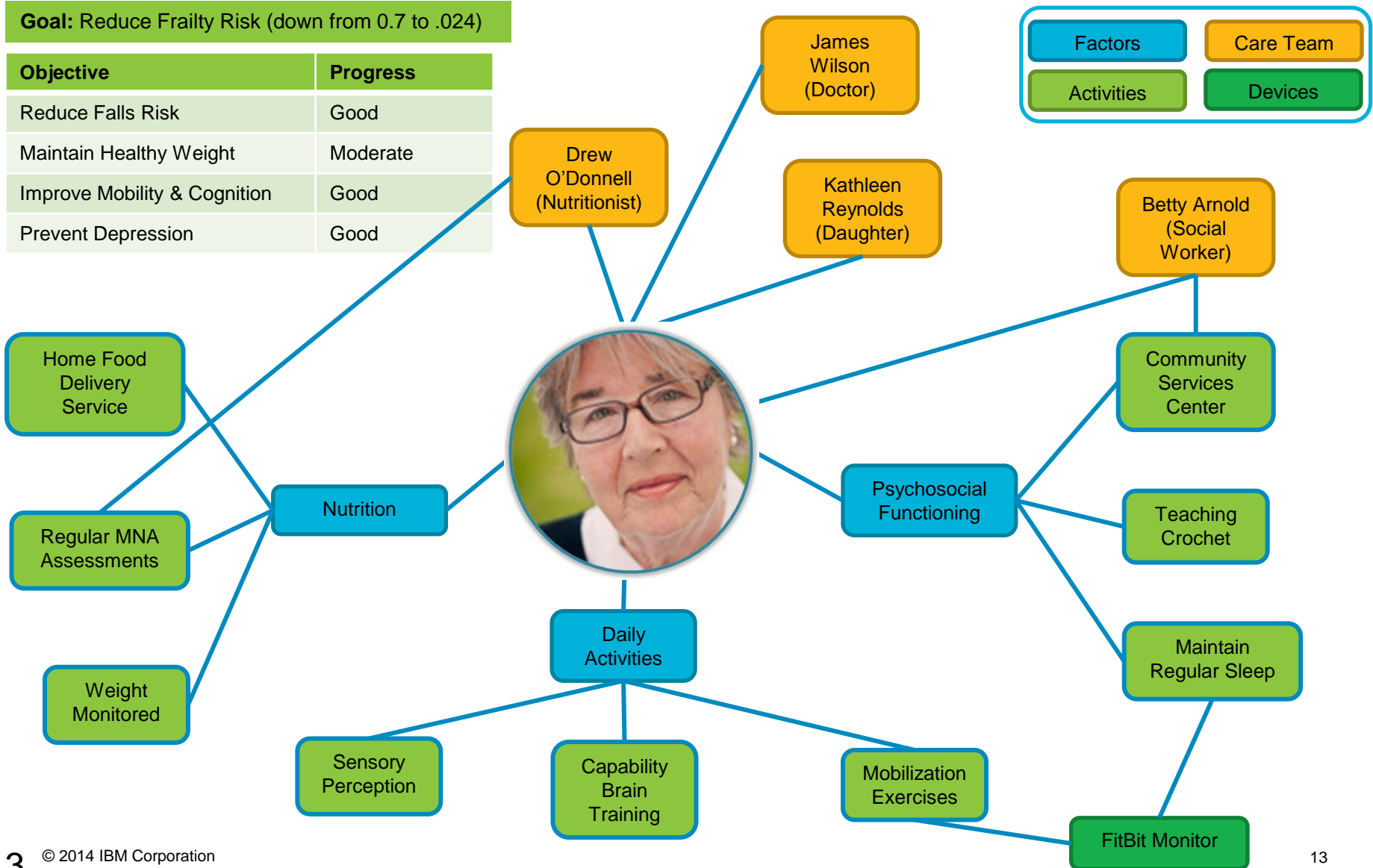
How does this solution help Mary?

IBM Care Management provides care givers with a business solution that:



- **Helps them look beyond clinical determinants and incorporate social and psychological determinants to create a person-centric, holistic plan that support the complex needs of Mary**
- **Allows them to collaborate with a cross-organizational team of social workers, physicians, and therapists to help Mary achieve her goals**
- **Includes insights from unstructured content, such as case notes in Mary's record when making decisions**
- **Provides a unified 360 degree view of Mary by bringing together information from multiple sources like EMR and other systems**

# Now back to Mary and a view of her personalized care management





# A client study: New York State Department of Health *Medicaid Redesign: Health Homes to improve care, quality & bend the cost curve*

## CLIENT NEED:

**5 million**

Medicaid citizens served

**>35%**

Of state budget

**\$30 billion**

Spent on 20% vulnerable clients

## SOLUTION: IBM Smarter Care – based on advanced analytics, mobile and social technologies

**Person-centered, team based approach to assessment, care planning and delivery**

**Seamless information exchange and interoperability**

**Efficient program enrollment**

## KEY BENEFITS:

**Holistic**

understanding of the client

**Multidisciplinary**

teams that are more effective

**Adaptive**

response to the context



## New York State Department of Health

*Medicaid Redesign: Health Homes to improve care, quality & bend the cost curve*



### OUTCOME:

*“New York has emerged as a national leader in the development of Health Homes... Unlike most states... New York took a much bolder approach... Health Homes are envisioned as a permanent part of the state’s considerable efforts to coordinate care for high need and high cost populations, consistent with the MRT’s ‘care management for all’ objective.”*

**- New York State Medicaid Redesign Team (MRT)**

To learn more...

- Learn more at our web site <http://www-03.ibm.com/software/products/en/care-management>
- Explore current topics with research from the IBM Curam Research Institute @ <http://www-01.ibm.com/software/city-operations/curam-research-institute/>
- Please visit and download sessions from the IBM Health and Social Programs Summit @ [ibm.com/ibmhsp](http://ibm.com/ibmhsp)
- Join us for further discussion on LinkedIn <https://www.linkedin.com/groups/IBM-Curam-Research-Institute-Group-6784056>
- Follow us on Twitter @IBMSmrtCare and tweet using #smartercare

Thank you!

Farhana Alarakhiya

Twitter: @Falarakhiya

LinkedIn: [Farhana Alarakhiya](#)

Abha Keshava

Twitter: @akeshava4

LinkedIn: [Abha Keshava](#)

