

Empowering Heroes, Transforming Health

Introduction to Watson
Health

IBM



Watson Health™

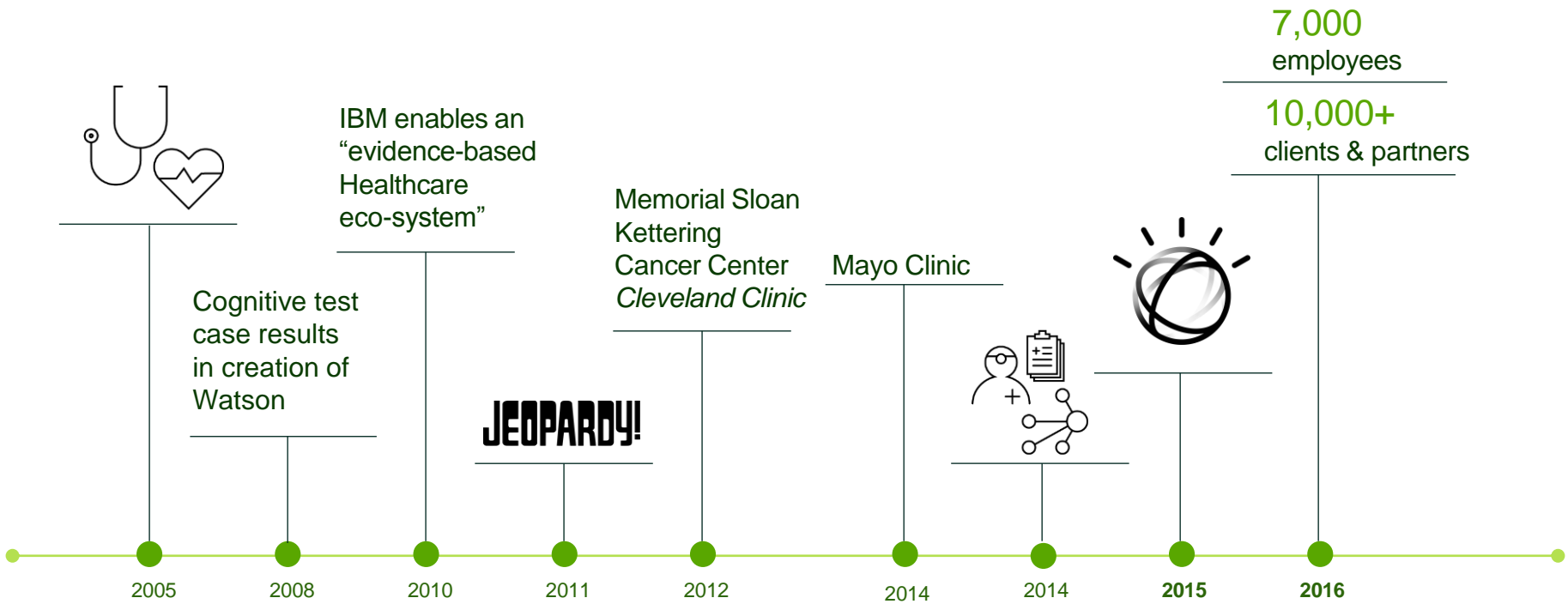
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Time matters in
healthcare,
cognitive
technologies, and
machine learning.

IBM Leadership in Augmented Intelligence and Health: Over a Decade in Development



Global Shifts Drive Momentum R&D, Access, Delivery & Engagement

Data Explosion

150+ exabytes

of healthcare
data today¹

Over 230K

active clinical trials²

80%

of healthcare data coming from
unstructured sources³

Dynamic Delivery

50%

Expected alternative payments
from Centers of Medicare &
Medicaid by 2018⁴

75%+

of patients expected to use
digital health services⁵

60-90K

Expected shortage of
physicians by 2025⁶

Value vs Volume

\$47 trillion

Estimated global economic
impact of chronic disease by
2030⁷

\$3 trillion

Estimated U.S. healthcare
spending⁸

100's

Number of decisions a
person with Type 1 Diabetes
makes a day⁹

Efficient, Effective R&D

1 in 10

clinical Trials in cancer
are shut down from lack of
participation¹⁰

\$2B

Average costs to develop a new
pharma drug¹¹

< 10%

drugs currently in development
that make it to market¹²

Sources: 1: NCBJ. Big data analytics in healthcare: promise and potential <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4341817/>; 2: ClinicalTrials.gov <https://clinicaltrials.gov/>; 3: NIH <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4127205/>; 4: CMS <https://innovation.cms.gov/initiatives/Health-Care-Payment-Learning-and-Action-Network/>; 5: McKinsey Healthcare's Digital Future July 2014 <http://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/healthcare-digital-future>; 6: AAMC Report The Complexities of Physician Supply and Demand: Projections from 2014 to 2025 https://www.aamc.org/download/458082/data/2016_complexities_of_supply_and_demand_projections.pdf; 7: WEF Global Economic Burden Non-Communicable Diseases http://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf; 8: CMS. Team analysis <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/downloads/highlights.pdf>; 9: OpenAps.org <https://openaps.org/2015/02/04/introducing-the-openaps-project/>; 10: Bio-Clinical Development Success Rates 2006-2015 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4843106/>; 11: Bipartisan Policy Center <https://cdn.bipartisanpolicy.org/wp-content/uploads/2016/06/BPC-Health-Innovation-Safe-Effective-Cures.pdf>; 12: Bio-Clinical Development Success Rates 2006-2015 <https://www.bio.org/sites/default/files/Clinical%20Development%20Success%20Rates%202006-2015%20-%20BIO,%20Biomedtracker,%20Amplion%202016.pdf>

At IBM Watson Health,
we believe the obstacles,
siloes, and complexities
of health and human services
should not hold back progress
to a healthier future

Empowering Heroes
Transforming Health



Oncology & Genomics

Imaging

Life Sciences

Value-Based Care

Government

Consumer Health



HEALTHCARE & LIFE SCIENCES

Innovative Cognitive Solutions with Watson APIs

Currently available
 Available, additional cognitive integration in process
 In development / **IBM Research



Oncology & Genomics

Watson for Genomics

Watson for Oncology

Clinical Trial Matching for Oncology

Adaptable Cognitive API Services



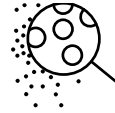
Government

Social Program Management

Health & Human Services

Next Generation Program Integrity

Deep Learning



Life sciences

Clinical trials

Watson for Drug Discovery

Watson for Patient Safety

Sequence Learning



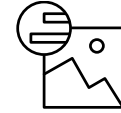
Value-Based Care

Next Generation Population Health Suite

Next Generation Payer Analytics

Next Generation Provider Portable Analytics

Natural Language Processing



Imaging

“Cardiac Advisor”**

“Voice to Report or Cardiologists and Radiologists”**

“Breast Advisor”**

Domain-specific Annotation, Curation

Collaborating Across Ecosystems to Transform Healthcare



- Quest Diagnostics (Watson Genomics from Quest Diagnostics)
- Memorial Sloan Kettering Cancer Center
- Broad Institute
- Illumina
- Celgene (Watson for Patient Safety)
- Medtronic (Sugar IQ with Watson)
- U.S. Department of Veterans Affairs
- Cleveland Clinic
- American Heart Association
- Siemens Healthineers (Population Health Management)
- Pfizer (Watson for Drug Discovery)
- Mayo Clinic
- American Cancer Society
- Welltok
- Johnson & Johnson
- Tekes
- American Diabetes Association
- Italy
- Watson Health Medical Imaging Collaborative
- Teva
- Harrow Council, London, England

Empowering Researchers to Combat ALS

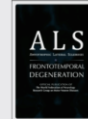


“Watson accomplished exactly what we hoped it did. It could identify and predict things that we ourselves had no idea were linked to this disease.”

Dr. Robert Bowser, Barrow Neurological Institute, as told to *Arizona Science and Innovation Magazine*

(2016) Sessions 1 - 11, Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration, 17:sup1, 1-80, DOI: 10.1080/21678421.2016.1231971
<http://www.tandfonline.com/doi/pdf/10.1080/21678421.2016.1231971?needAccess=true>

Dr. Robert Bowser Quote: <http://science.kjzz.org/content/409477/ibm%E2%80%99s-watson-computer-helps-barrow-identify-new-als-genes>



Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration



ISSN: 2167-8421 (Print) 2167-9223 (Online) journal homepage: <http://www.tandfonline.com/loi/afgd20>

Sessions 1 - 11

C4 ALS AND ARTIFICIAL INTELLIGENCE: IBM WATSON SUGGESTS NOVEL RNA BINDING PROTEINS ALTERED IN ALS

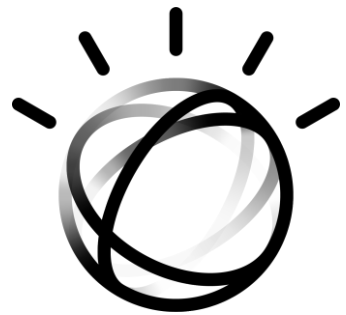
N Bakkar^{1,2}, I Lorenzini^{1,2}, A Lacoste³,
S Spangler⁴, A Boehringer^{1,2}, M Collins^{1,2},
P Ferrante^{1,2}, E Argentinis³, R Sattler^{1,2},
R Bowser^{1,2}

¹Barrow Neurological Institute, Phoenix, AZ, USA,
²St Joseph's Hospital and Medical Center, Phoenix,
AZ, USA, ³IBM Watson Health, New York, NY,
USA, ⁴IBM Research, Alameda, CA, USA

Empowering the Oncology Community for Cancer Care: 35+ Hospital Systems

Illumina
Broad Institute
Best Doctors
UNC Lineberger
U.S. Department of
Veterans Affairs
Froedtert & Medical
College of Wisconsin
Mayo Clinic

Genomics



Clinical Trial
Matching

Oncology

Quest Diagnostics
New York Genome Center
Memorial Sloan Kettering
Cancer Center
Bumrungrad
International Hospital
Manipal Hospitals
Gachon University Gil
Medical Center

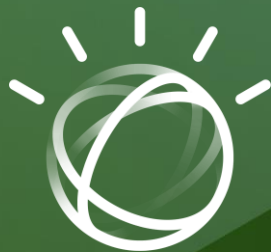
Medtronic



Our Mission

We, Watson Health, aspire to improve lives and give hope by delivering innovation to address the world's most pressing health challenges through data and cognitive insights.





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