Big Data

Kan het echt iets voor de informatieprofessional betekenen?

Dr N.S. Hekster

26 maart 2015

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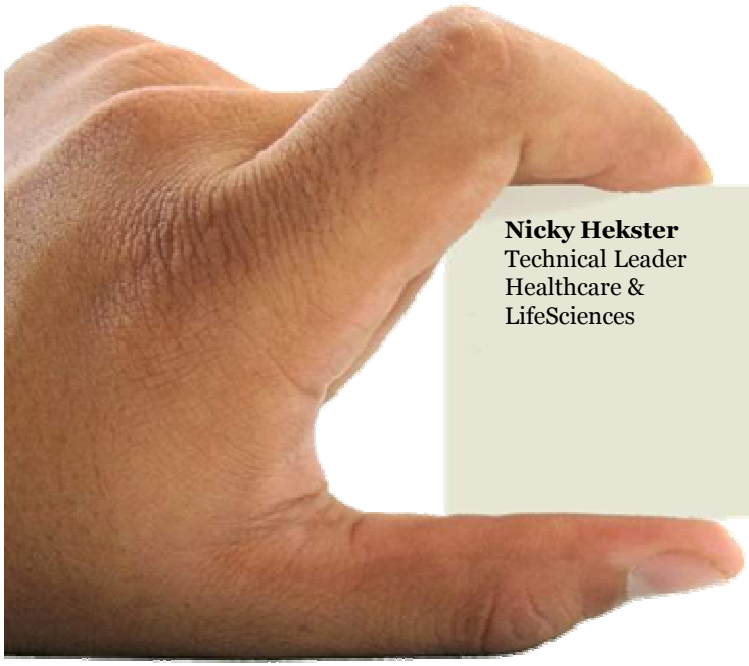
Introductie Spreker



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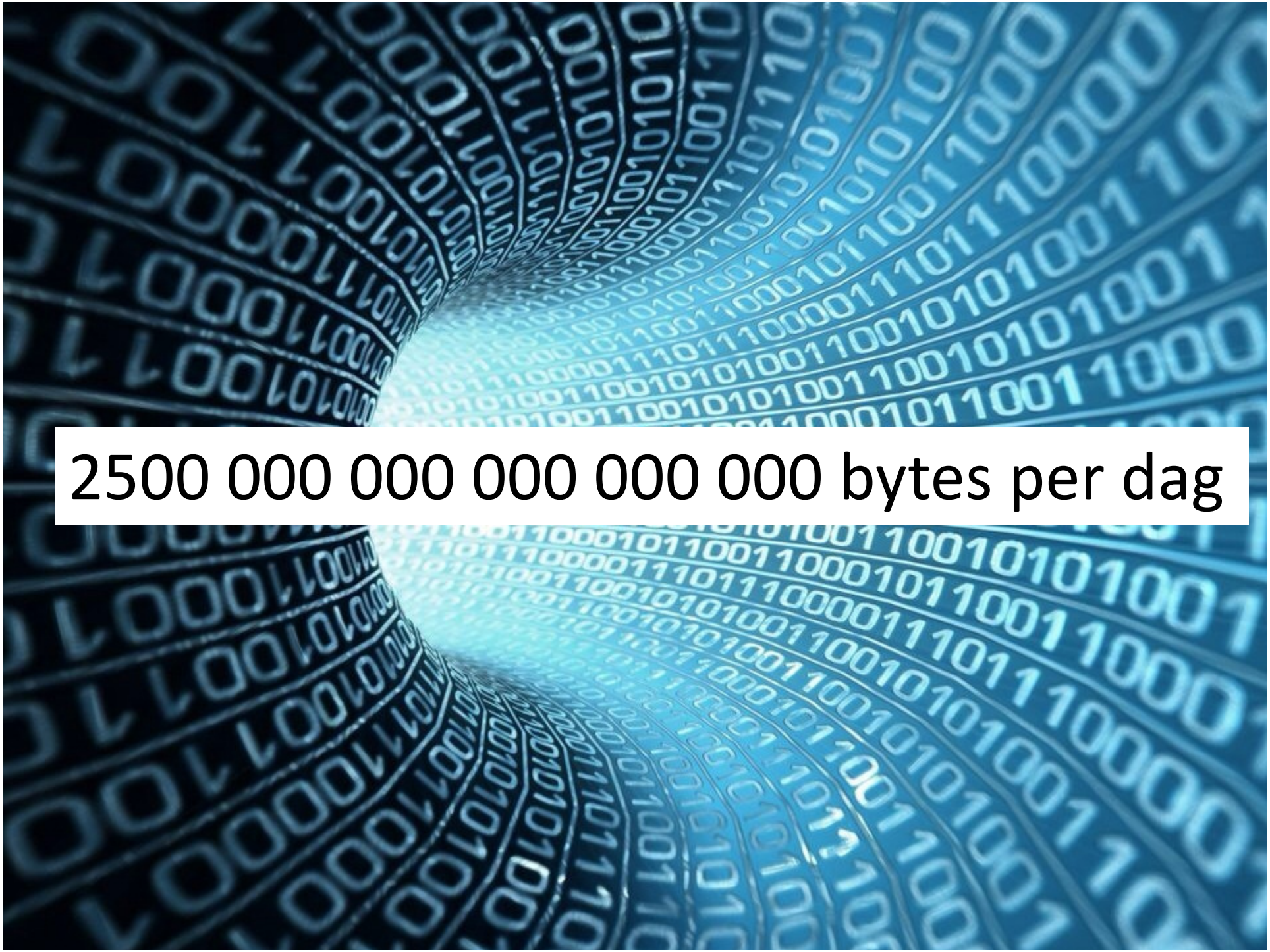
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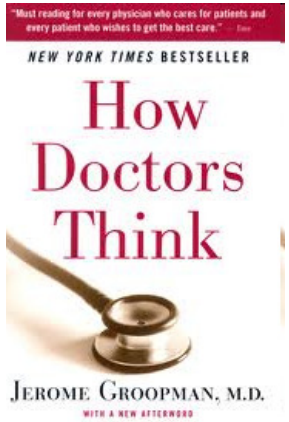

- Medische informatie verdubbelt **elke 5 jaar**.
- 80% van de zorgprofessionals besteedt ten hoogste **5 uur/maand om bij te blijven**.
- Slechts 20% van de kennis die artsen/behandelaren gebruiken is *evidence based*: **1 op de 5 diagnosen zijn niet correct of incompleet** .

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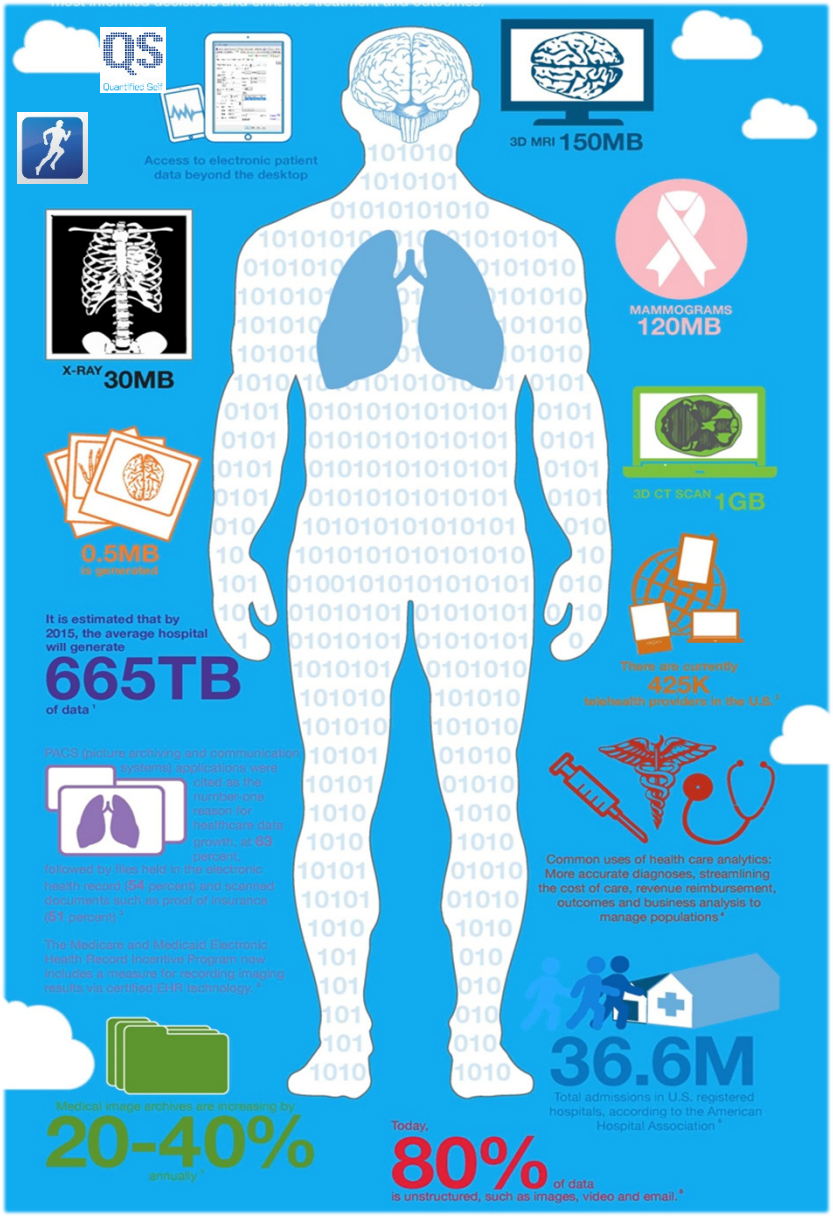

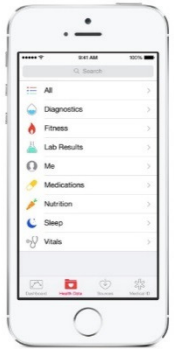

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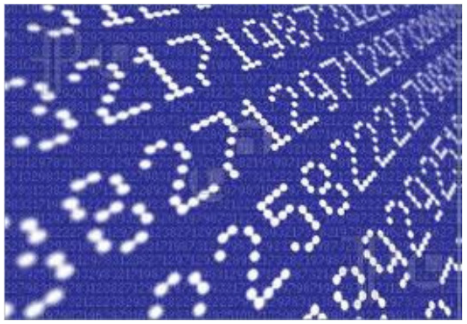
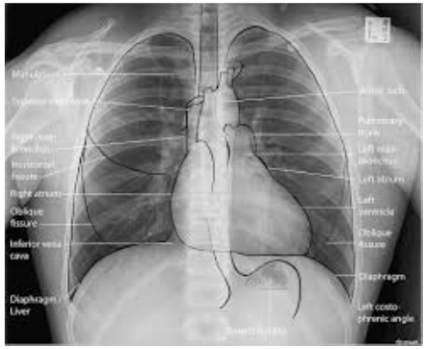
Big Medical Data

Echt meer dan de traditionele datatypes

- Transactionele - en applicatiedata
- Medische techniek
- Social media data
- Institutionele data
- Wetenschappelijke artikelen
- Geannoteerde medische beelden, metadata uit VNA's
- Klinische rapporten en verslagen





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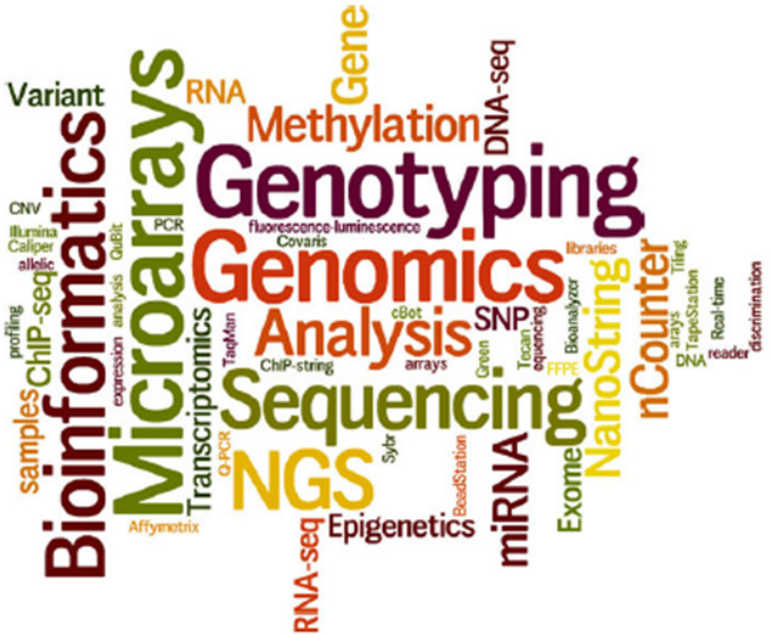

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NIH National Institute of Neurological Disorders and Stroke

Journal of Clinical Psychology in Medical Settings, Vol. 3, No. 3, 1996

UpToDate®

Addressing Women's Breast Cancer Risk and Perceptions of Control in Medical Settings

Renee Royak-Schaler,[1] Brian Cheuvront,[2] Kenneth R. Wilson,[3] and Claudia M. Williams[3]

Many women with family histories of breast cancer deal with two distinct but related issues: their objective physical risk and the emotions this risk engenders. Studies indicate that approximately 70% of African American and white women are concerned about their chances of developing breast cancer someday and perceive themselves to be at risk. Health care providers, including psychologists, need to be aware of the special needs and psychosocial concerns of high-risk women with family histories of breast cancer, since perceptions of breast cancer risk influence screening practices. Providers need training in understanding the significance of specific family patterns of breast cancer, screening guidelines appropriate for women at risk, and the benefits and risks of available prevention options, including genetic screening. Delivering accurate information about both established risk factors known to elevate personal risk, such as age and family history, and factors which women associate with breast cancer, such as bumping and bruising a breast, smoking, and oral contraceptive use, is essential for promoting accurate risk perceptions and appropriate screening schedules.

KEY WORDS: breast cancer; family history; risk perception; cancer concern; screening practices.

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[3]Survey Research Laboratory, East Carolina University, Greenville, North Carolina.

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ISSUE HIGHLIGHTS

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Translating Heart Failure Guidelines into Clinical Practice: Clinical Science and the Art of Medicine

Kirkwood F. Adams, Jr., MD

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The rapid growth of medical knowledge during the past few decades has created many potential advances in the therapeutics of chronic disease, and cardiovascular disease has been at the center of this phenomenon. Translation of these advances into everyday care of patients with chronic disease continues to be problematic. Guideline development has emerged as a major strategy to improve utilization of new and existing therapeutic modalities of proven benefit. To be effective, practice guidelines must not only clearly delineate which therapies are efficacious, but also consider the many practical aspects necessary for implementation of specific therapeutics in the actual care of patients. In this way, both the art and the science of medicine can be employed to obtain better patient outcomes in cardiovascular diseases long associated with severe mortality, morbidity, and poor quality of life. This review examines the difficulties inherent in translating new advances into standards of care. The recent guideline process for a specific chronic cardiovascular disease, heart

disease states and results from clinical trials often have a more limited ability to improve disease outcomes than initially perceived. Second, medical practitioners appear inherently resistant to change. Given that most new approaches to disease management are incorrect, a conservative approach has been adopted by many. Third, new treatments often require new methods of care for a particular disease state that may or may not be easy to adapt to outpatient or inpatient practice and are frequently expensive to implement. Some new therapeutics require fundamental changes in physician perception of disease processes that are simply hard to accept. β-Blockade for heart failure is a striking example of a therapy once contraindicated that is now indicated. Many strategies are being developed to overcome these latter barriers to translation of new advances into clinical practice. Creation of practice guidelines has emerged as one of the principal strategies and one that is a seemingly effective approach [1].

Many rationales can be presented to justify the development of clinical practice guidelines. Frequently, guidelines are used as standards for quality or process control, an application that has been controversial for many health care providers. A more universally accepted rationale is that health care delivery and outcomes will be improved if application of advances in medical care can be accelerated and made more uniform in the community by a practice guideline. That

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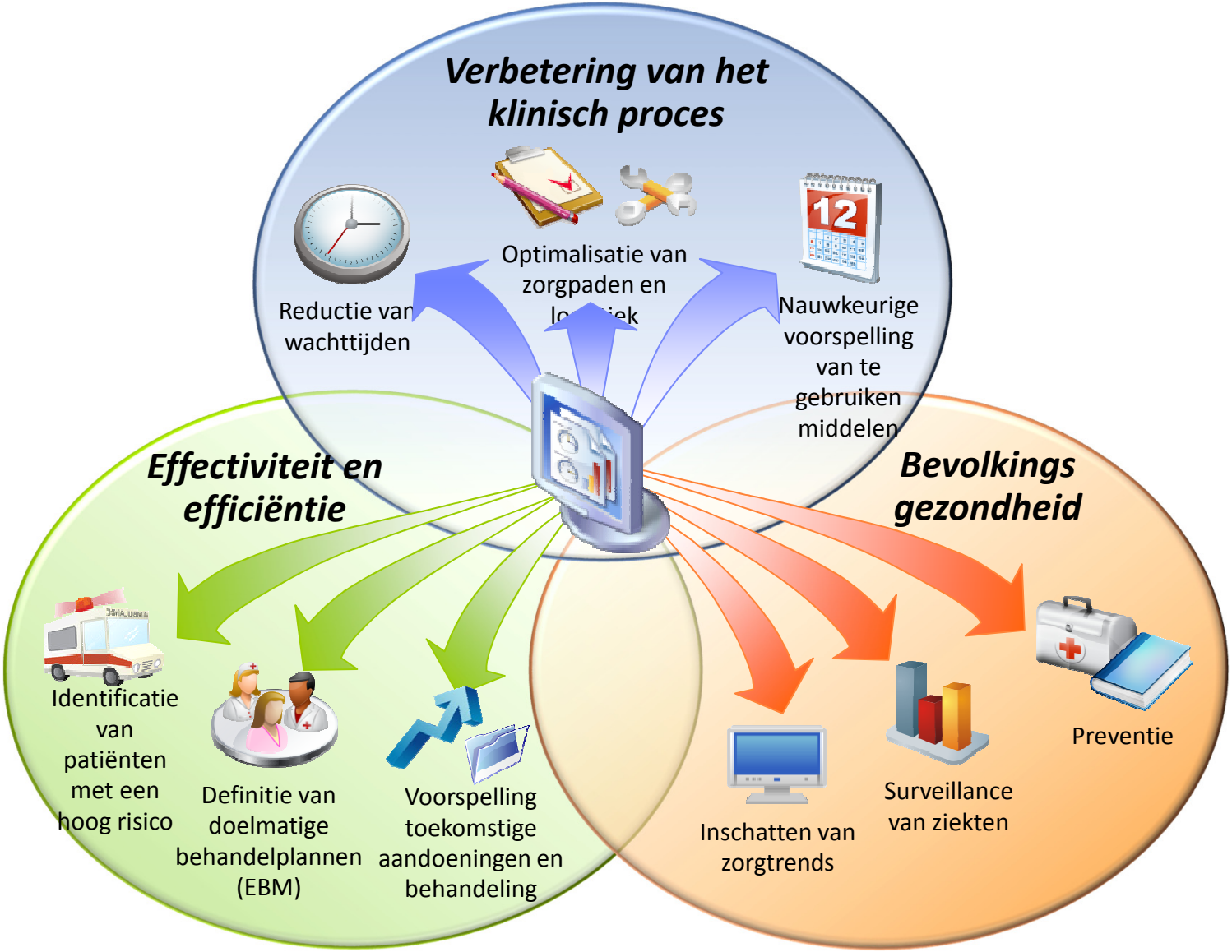
Van *Gegevens* naar *Inzichten* m.b.v. *Healthcare Analytics*



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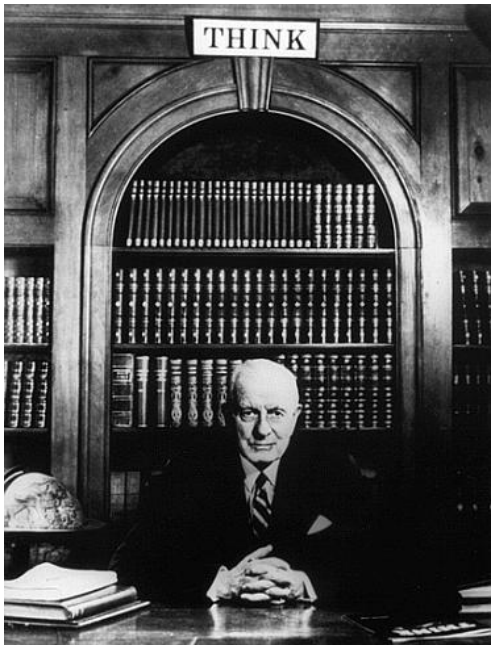
Watson



Thomas J. Watson
(1874 – 1956)

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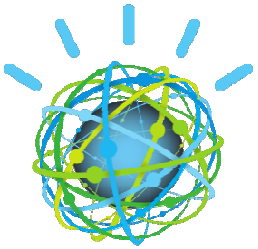

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MAYO CLINIC

Mayo Clinic

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Department of Veterans Affairs

Selected Watson to analyze EMRs in a demo project

MAYO CLINIC

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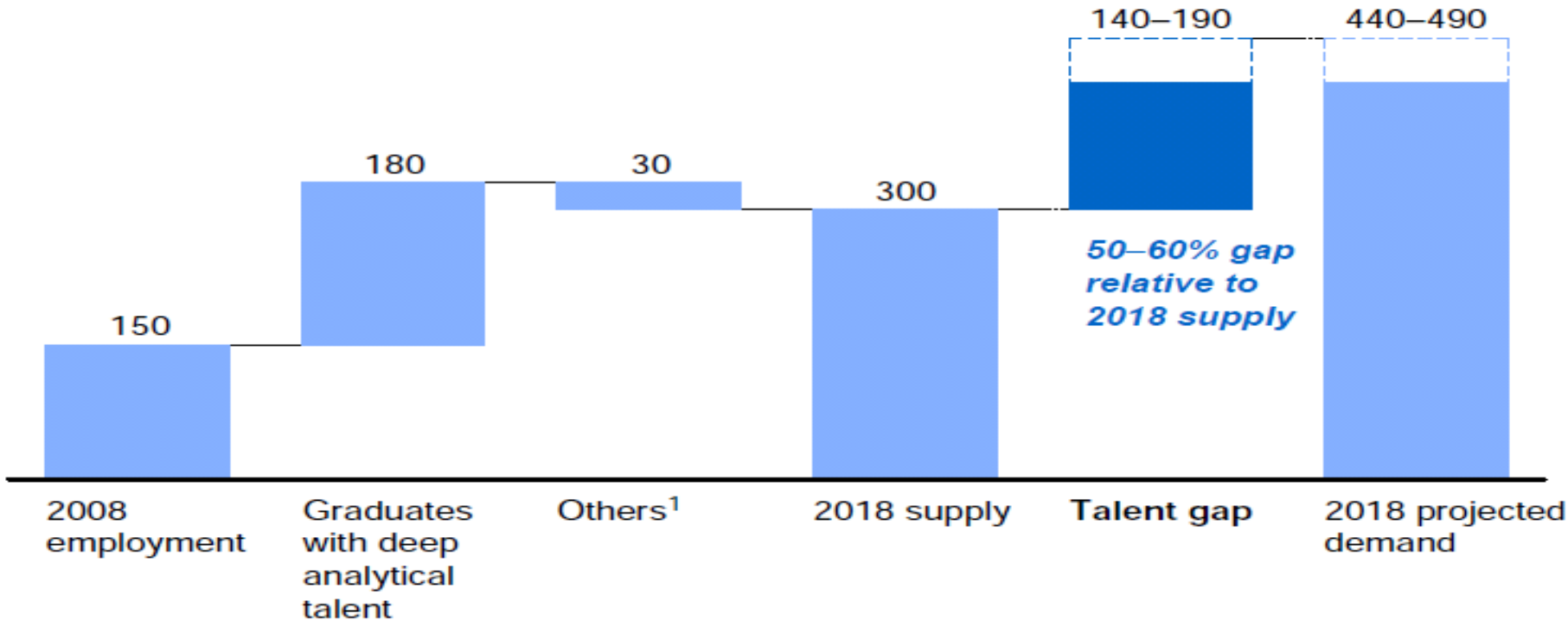
McKinsey Institute over banen in Big Data



- Er zal een **tekort aan talent ontstaan, nodig voor organisaties om te profiteren van big data** . In de V.S. alleen al dreigt in 2018 een tekort van 140.000 tot 190.000 mensen met diep analytische vaardigheden, evenals 1.5 miljoen managers en analisten, die hebben geleerd om met big data analyses effectieve beslissingen te kunnen nemen.

http://www.mckinsey.com/mgi/publications/big_data/index.asp.13

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Randvoorwaarden

- Is men bereid tot een cultuurverandering?
  - Data-driven regievoering en besluitvorming
  - Geïntegreerde en schaalbare bedrijfsaanpak
  - Angst voor reputatieschade vanwege transparantie?
  - Financiering

- Randvoorwaarden
  - Is er genoeg talent?
  - Data scientist – een factotum?
  - Clinical Librarian 2.0

  - “Geneeskunde” met minor big data
  - Big data met minor “Geneeskunde”
  - Clinical Data Scientist

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Dank voor uw aandacht!