

Real time monitoring and enhancing the patient practitioner relationship

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27th November, 2014

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HEALTH SCIENCES

Safe Harbor Statement

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Explosive Data Growth

Harnessing insight from Big Data provides an opportunity to improve operational efficiency and effectiveness

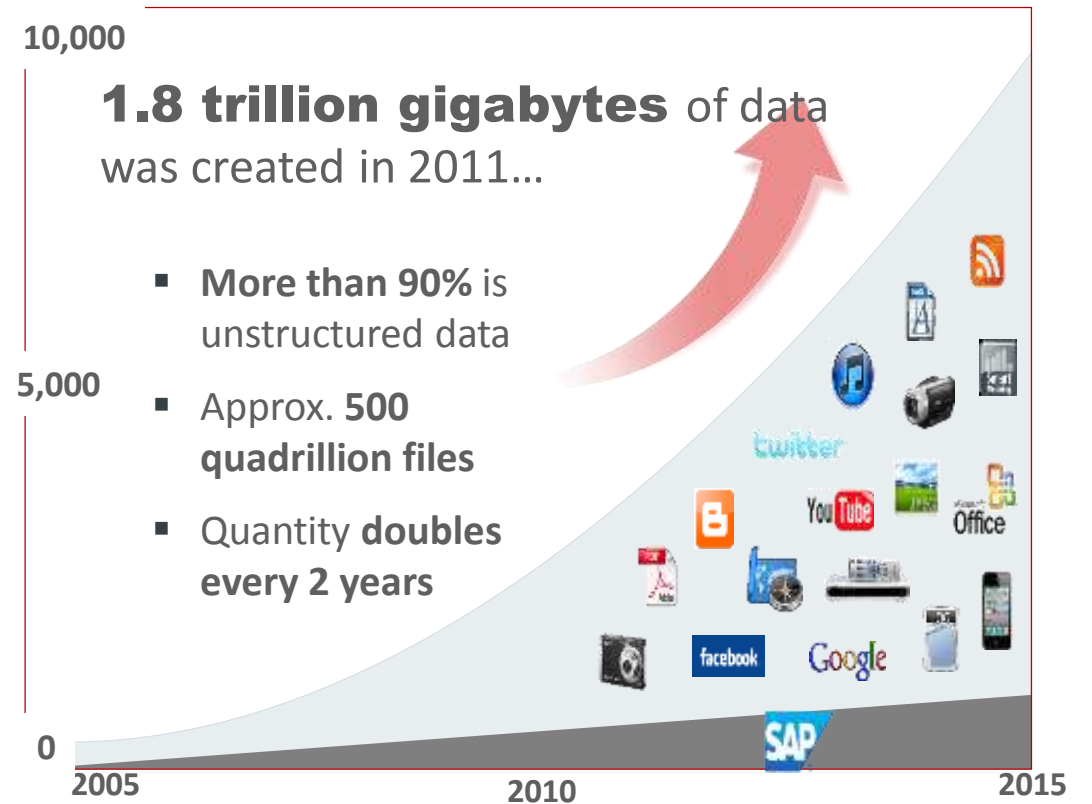
GIGABYTES OF DATA CREATED
(IN BILLIONS)

Requires capability to rapidly:

✓ **Collect**

✓ **Understand**

✓ **Respond/Act**



Content Provided By Cloudera.

Source: IDC 2011

STRUCTURED DATA

UNSTRUCTURED DATA

Healthcare Data will be Big

Data explosion in coming decade will answer the hard questions

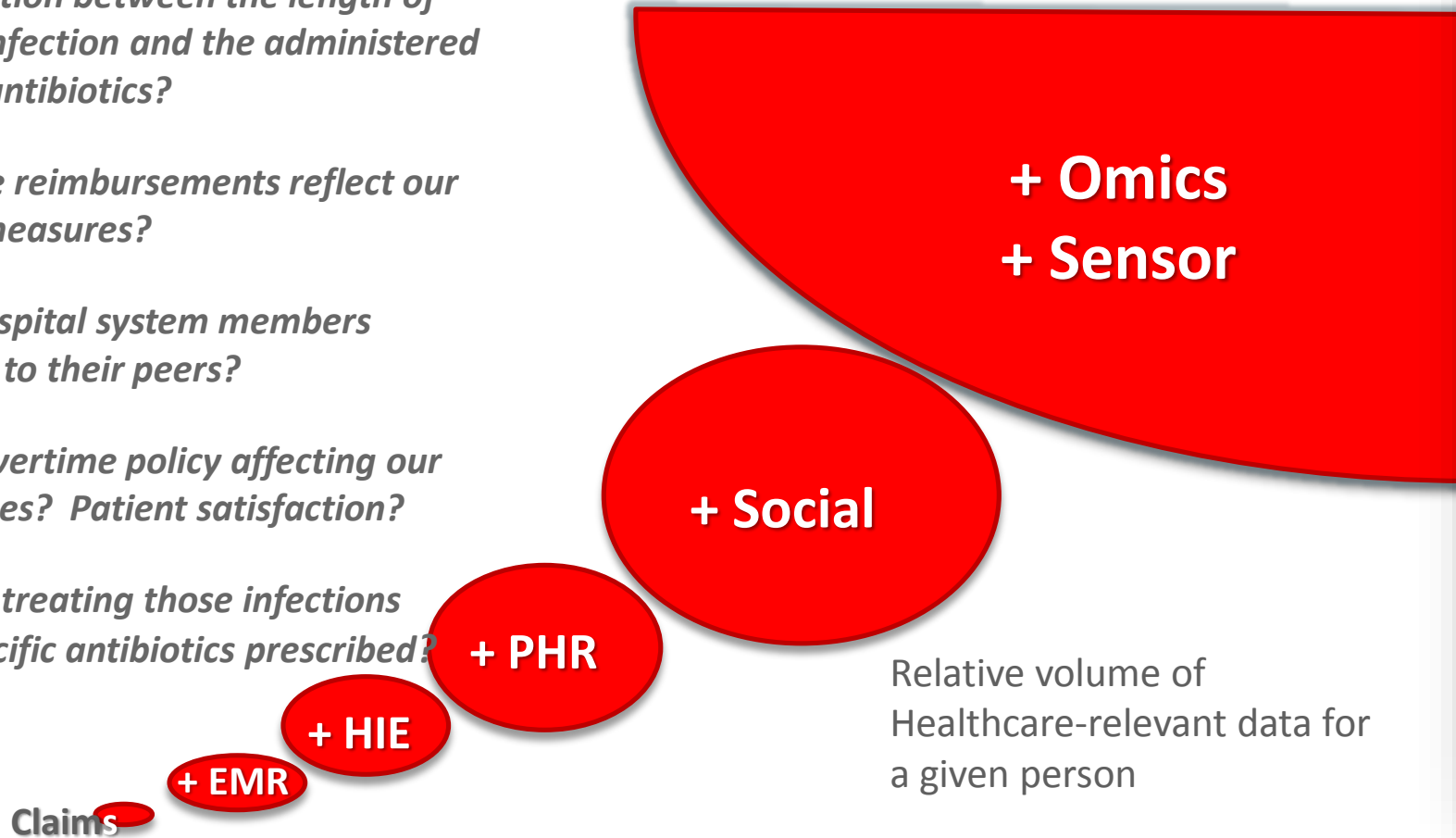
What is the correlation between the length of acute respiratory infection and the administered doses of different antibiotics?

Do our cardiac care reimbursements reflect our improved quality measures?

How do specific Hospital system members perform compared to their peers?

How is our nurse overtime policy affecting our ICU quality measures? Patient satisfaction?

What is the cost of treating those infections relative to the specific antibiotics prescribed?



WHY Big Data?

INSIGHTS

Mine disparate data sources for actionable insights

Costs

Drug efficacy

Compliance Rates

Risk

Utilization Rates

Comparative Effectiveness

Caregiver Performance

Care Outcomes

Patients

Behaviour

Populations

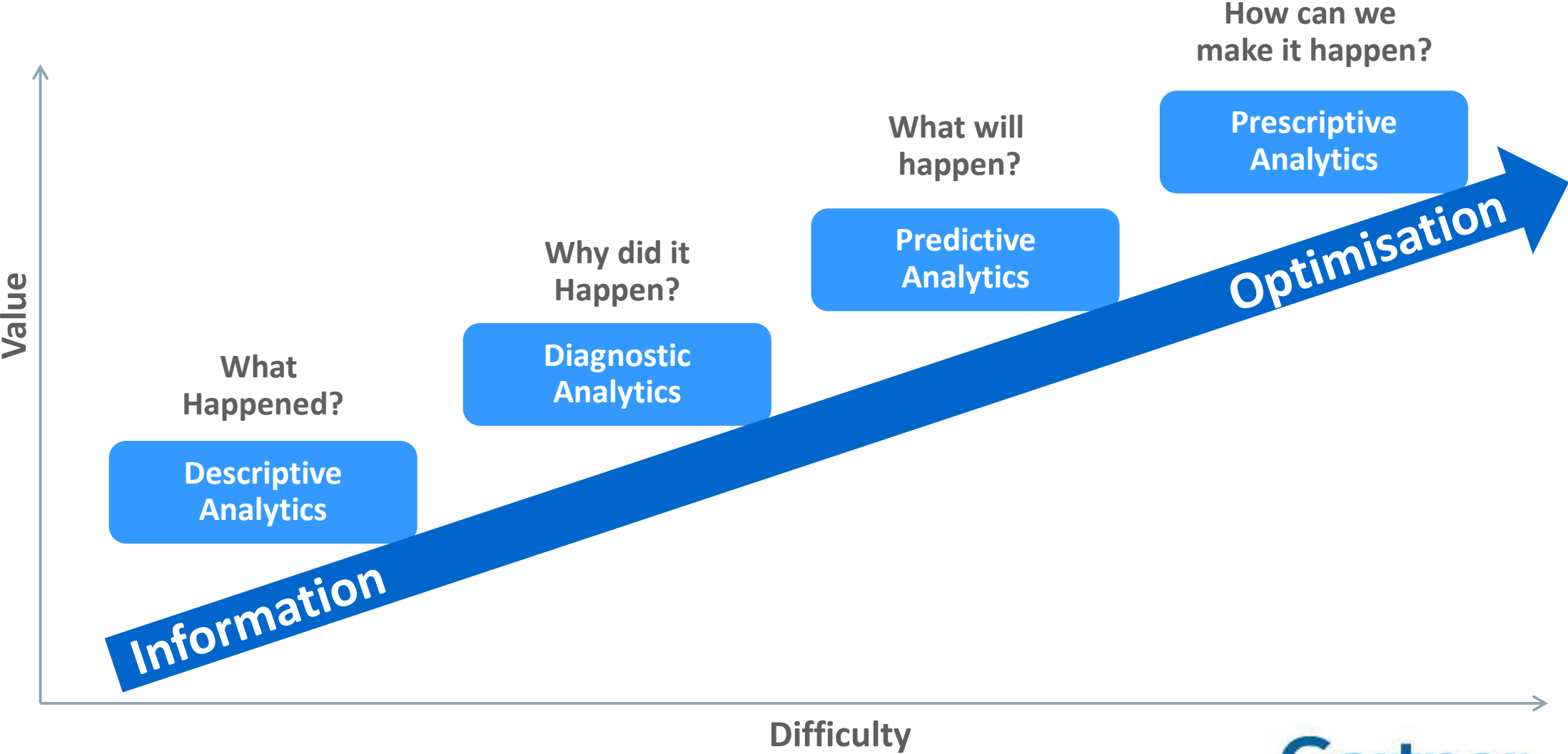
Social Trends

Outcomes Matter

“The biggest influence of health reform is that there is no new money for health care delivery. There is money only for improved outcomes. You can explain it in four words: no outcome, no income. It’s that simple”

- David B Nash, Founding Dean of Thomas Jefferson School of Population Health

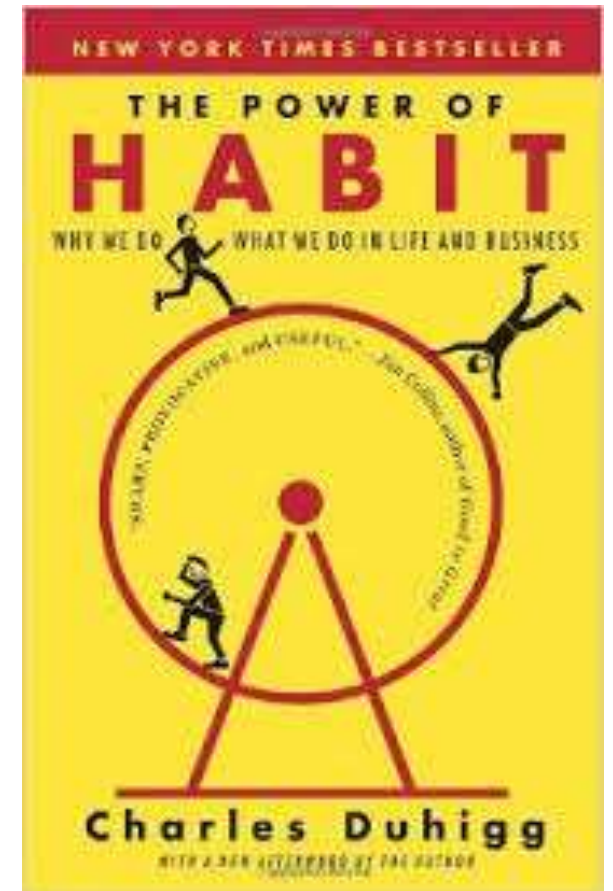
Where Do You See the HSCIC and the NHS Today?



The Power of Habit:

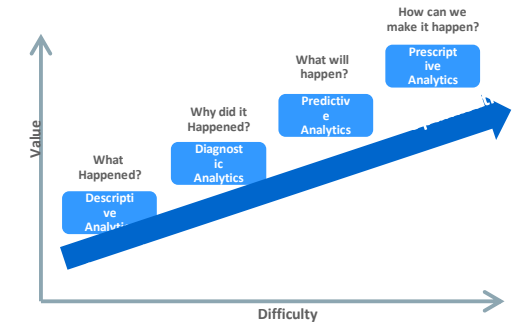
It's not enough just to put the patient at the centre

- “When a habit emerges, the brain stops fully participating in the decision making.... So unless you deliberately fight a habit- unless you find a new routines- the pattern will unfold automatically”
- “Change might not be fast and it isn't always easy. But with time and effort, almost any habit can be reshaped.”
- “Rather, to change a habit, you must keep the old cue, and deliver the old reward, but insert a new routine.”
- “It is facile to imply that smoking, alcoholism, overeating, or other ingrained patterns can be upended without real effort. Genuine change requires work and self-understanding of the cravings driving behaviours.”



Patient Engagement - Lead by Example

Improve health outcomes for citizens with asthma



Today – Descriptive Analytics

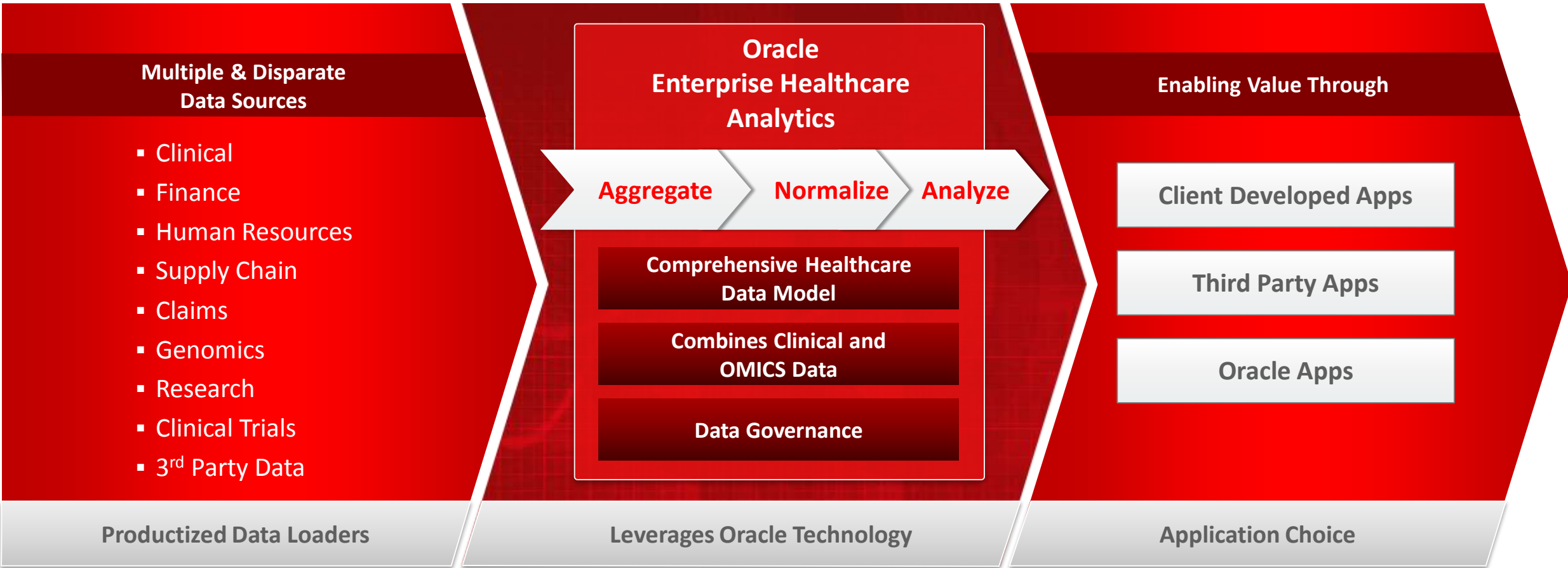
- Hospital admissions for allergies up nearly eight per cent in a year (<http://www.hscic.gov.uk/article/4764/Hospital-admissions-for-allergies-up-nearly-eight-per-cent-in-a-year>)
- There were over 79,800 emergency hospital admissions for asthma in the UK in 2008-2009. Of these, 30,740 were children aged 14 years or under. (Asthma UK)
- There were 1,131 deaths from asthma in the UK in 2009 (12 were children aged 14 years or under). Asthma UK)
- An estimated 75% of admissions for asthma are avoidable and as many as 90% of the deaths from asthma are thought to be preventable. (Asthma UK)

Asthma UK via www.patient.co.uk/doctor/acute-severe-asthma-and-status-asthmaticus#ref-7

Tomorrow – Prescriptive Analytics

1. Integrated Big Data:
 - A citizens healthcare data
 - Daily Pollen count data
 - Daily Pollution data
2. Change the Behaviour:
 - Notify patients and family members to take their inhalers, allergy medicine, etc on high risk days
3. Report & Review
 - Produce current statistics
 - Measure impact of change of behavior

Powering Enterprise Healthcare Analytics



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