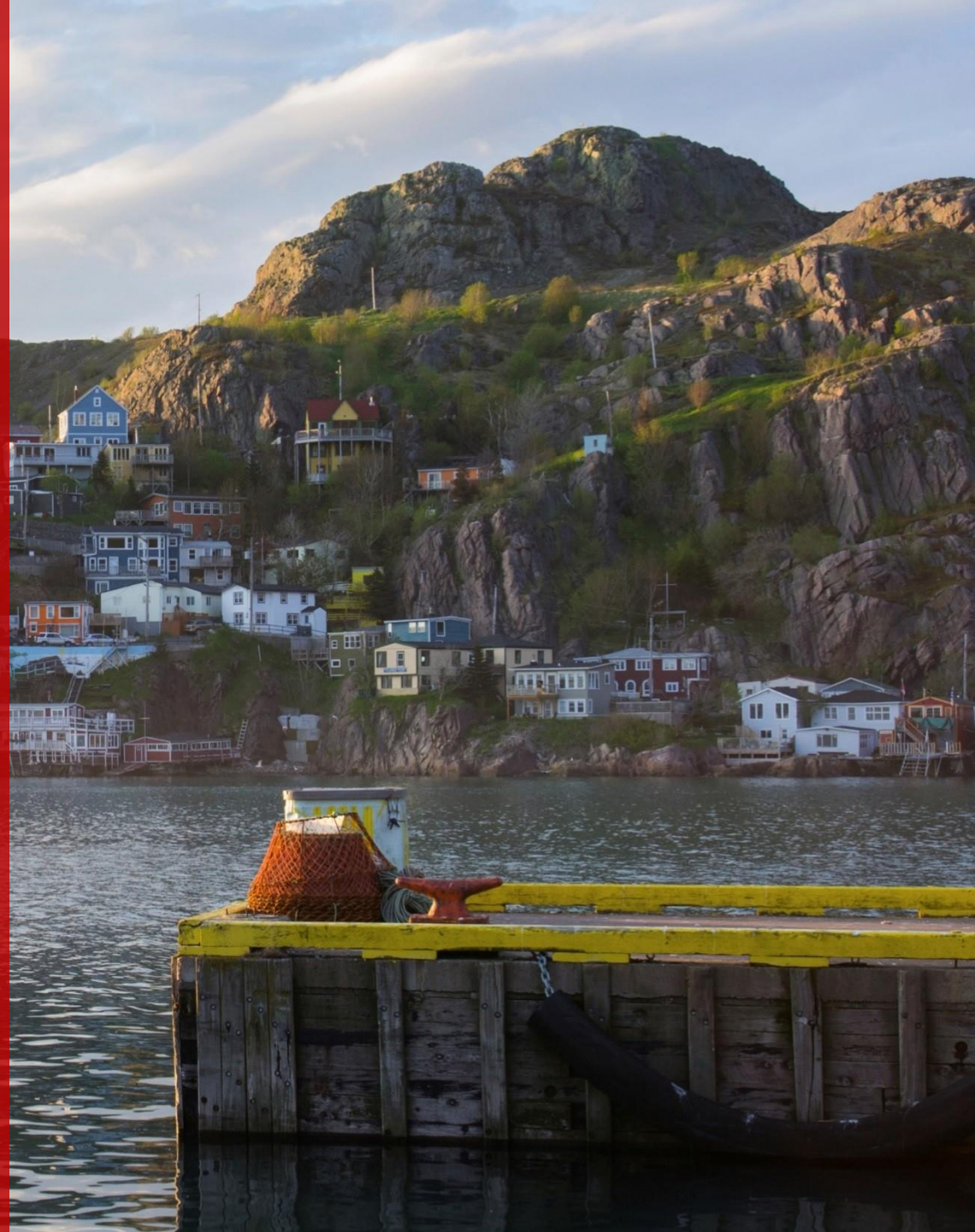
ST. JOHN'S COLLOQUIUM

JUNE 27-29, 2016

IPEBLA IACA IAAHS PBSS Canadian Institute of Actuaries Institut canadien des actuaires



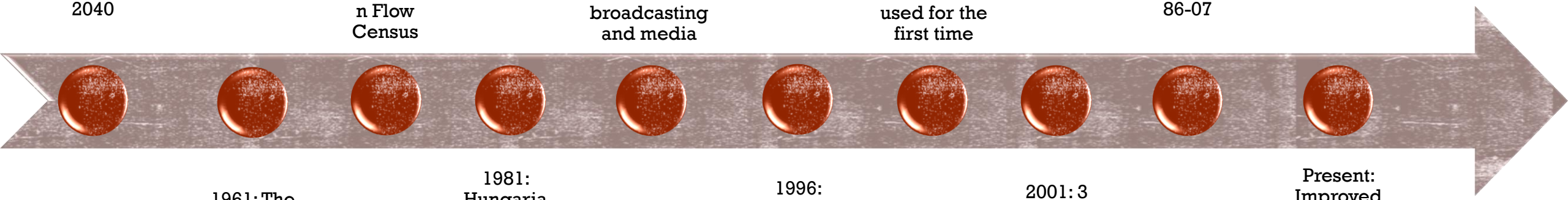
THE EVOLUTION OF BIG DATA IN HEALTHCARE AND ITS USES IN AFRICA

By Fatima Badat and Kudzai Chigiji

AGENDA

- The Global Evolution of Big Data
- Big Data in Healthcare
- A Trip Around in Africa
- What Next for Africa and Healthcare Data?
- Questions

THE GLOBAL EVOLUTION OF BIG DATA



1944: The acknowledgement of big data was identified by Fremont Rider.by 2040

1961: The "Law of exponential increase"

1975: Japan's Ministry of Posts and Telecommunications began conducting the Information Flow Census

1981: Hungarian Central Statistics office began to measure data volume in bits

1983: Exponential growth in information flow due to broadcasting and media

1996: Digital storage became more cost effective than paper

1997: The term "Big Data" was used for the first time

2001: 3 V's became the defining dimensions of Big Data

2011: Research showed that storage capacity grew by 25% from 86-07

Present: Improved technology increasing the ability to analyse and optimise mass quantities of Big Data

Source: HCL Technologies

BIG DATA IN HEALTHCARE

4.9 million patients worldwide will use remote monitoring devices by 2016

16000 hospitals worldwide collect data on patients

80% of health data is unstructured *and stored in* hundreds of forms such as labs, results, images and medical transcripts.

An 18% annual compound growth rate is anticipated between 2010 and 2016 for patients that will use **remote monitoring devices**

Patient monitoring equipment pumps an average of 1000 readings per second or 86400 readings in a day

Source: http://www.designinfographics.com/health-infographics/why-americas-healthcare-sucks

USES OF BIG DATA IN HEALTHCARE

Personal Health Record

Electronic Health Record

Health Information Exchange

National and International Health Analytics

Quality measure

Public health

Clinical research

Patient

Practise

Population

Public

Clinical decision support

Public health policy

Clinical guidelines

Source: Office of the National Coordinator

A Trip Around Africa

RWANDA

" We have said it time and again: the role of ICTs in national, regional, and continental development and, specifically, in wealth creation, employment generation, and poverty reduction, cannot be over-emphasized…

- President Kagame

RWANDA: THE HEALTHCARE DATA JOURNEY

Rwandan Ministry of Health

Integrated Health Systems Strengthening Project (IHSSP)

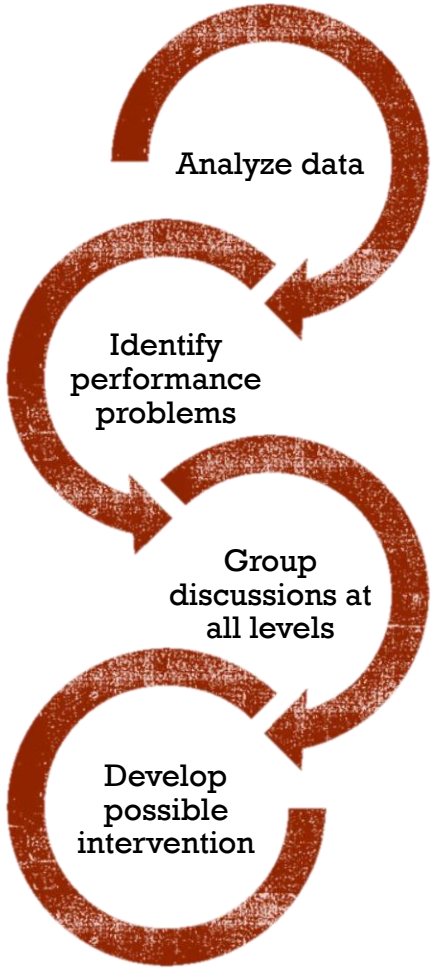
Simplified the data collection process

Rwandan Health Management Information System (R-HMIS) rolled out nationally in 2012.

A web-based software platform to enter their information directly into the national database and to view real-time analyses

RWANDA: CULTIVATING A CULTURE OF DATA USE AND INFORMED DECISION-MAKING

Emmanuel Dumishana, Mayange Health Center's Data Manager



Source: Rwanda HMIS

GHANA

SMS for Life

2011

NHIS biometric registration and cards

2014

Bio-informatics

2014

Sources: E.Quaye, ISPOR Ghana; HealthWorks Collective, 2012

NIGERIA: THE CONTRADICTION

- Manual –paper based hospital & pharmacy records
- Multiple data sets that are not linked
- Not easily accessible for research
- No infrastructure to monitor data and evaluate it hence can't measure burden of ill-health in real time
- Data protection and ownership issues

SOUTH AFRICA

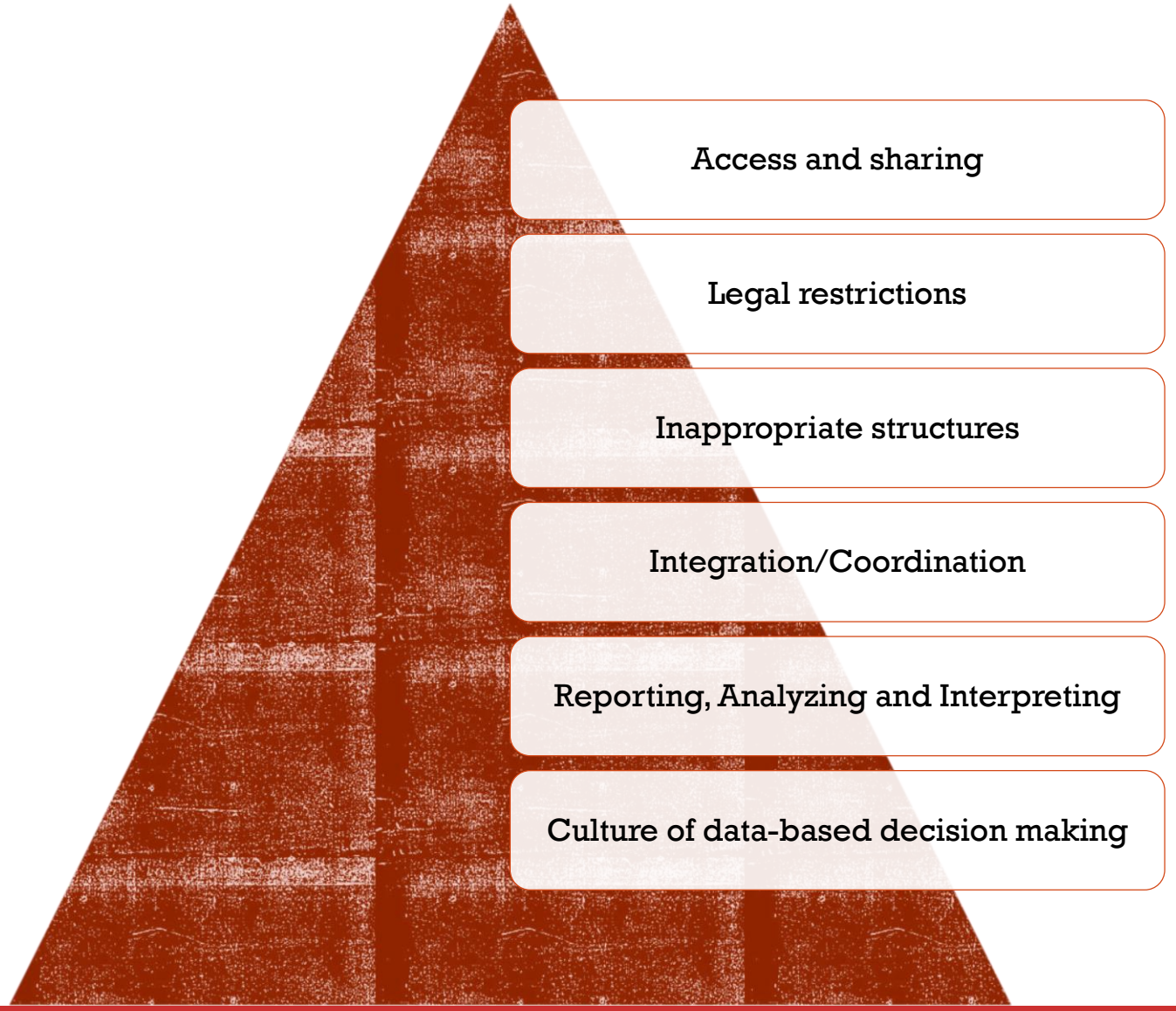
Public Sector

- Fragmented systems
- Announced implementation of EHR 9 years ago

Private Sector

- Pockets of excellence
- Discovery Health – leading best practise example

KEY COMMON CHALLENGES



Big Data and the Human Touch

WHAT NEXT FOR AFRICA AND HEALTHCARE DATA?

QUESTIONS?

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