



BuddhiMed Technologies

BuddhiMed Technologies

Merging Computer Science with Modern Medicine

Dr. Ajay Bakshi – Co-Founder & CEO

ICMR-NICF SYMPOSIUM ON AI FOR HEALTH

November 12th 2019

AI needs LOTS of data



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EXPERT OPINION

Contact Editor: **Brian Brannon**, bbrannon@computer.org

The Unreasonable Effectiveness of Data

Alon Halevy, Peter Norvig, and Fernando Pereira, Google

Alon Halevy is a research scientist at Google. Contact him at halevy@google.com.

Peter Norvig is a research director at Google. Contact him at pnorvig@google.com.

Fernando Pereira is a research director at Google. Contact him at pereira@google.com.

IEEE INTELLIGENT SYSTEMS

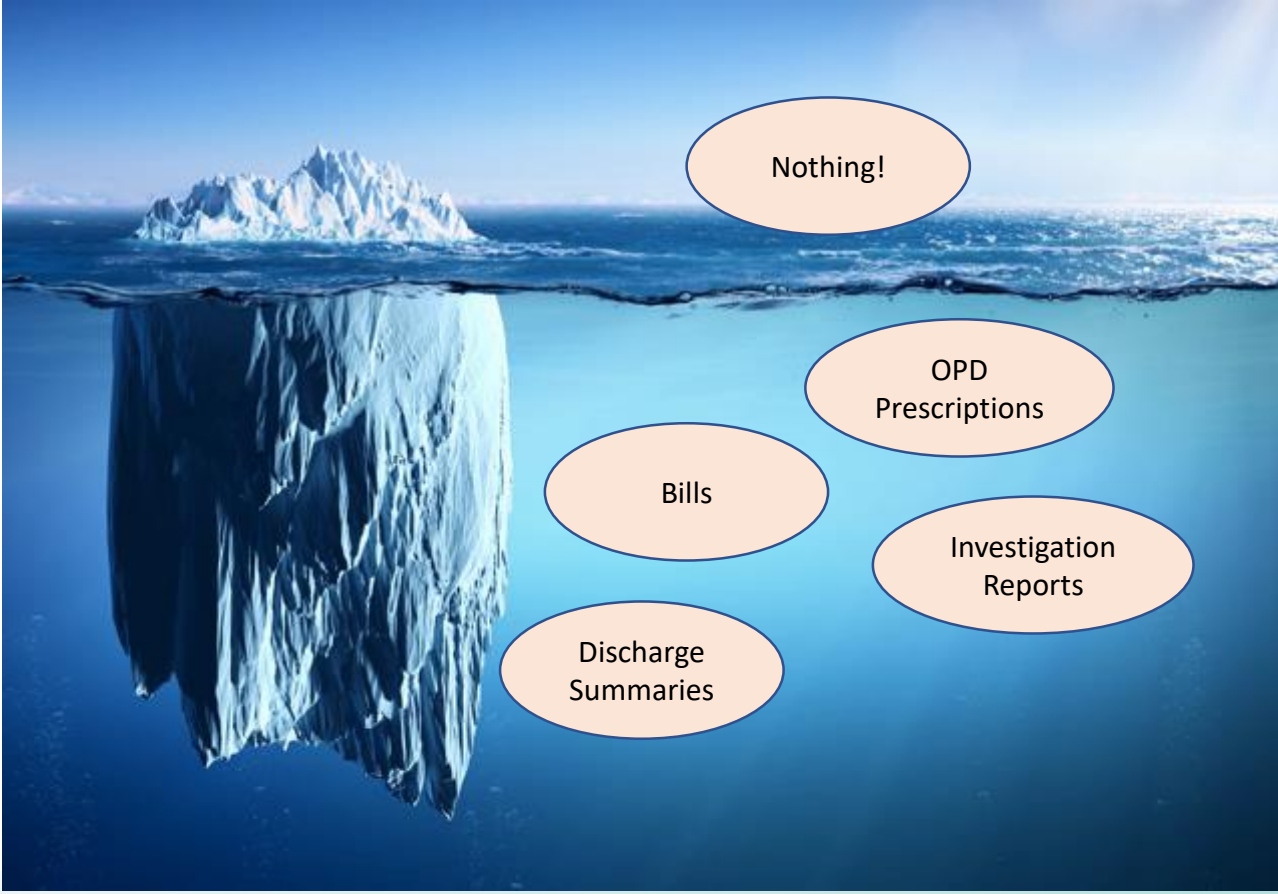
“But invariably, simple models and a lot of data trump more elaborate models with less data”

“Now go out and gather some data, and see what it can do!”



Indian Healthcare is drowning in 'dark' data

Dark data is **data** which is acquired through various **computer network operations** but not used in any manner to derive insights or for decision making...**Wikipedia**



Rough Estimates of Indian Healthcare Data Size (2013-2018)

Hospital Discharges ~ 100 million

OPD Consults ~ 1,000 million

Investigation Reports ~ 3,000 million

Available Data in Structured & Portable format ~ NIL



Introductions

“BuddhiMed develops Machine learning solutions and analytics tools using very large sets of Indian healthcare data to improve decision making in clinical medicine and healthcare delivery systems”



Dr. Ajay Bakshi: CoFounder & CEO

Dr. Bakshi is a veteran of the healthcare industry having been a neurosurgeon (from AIIMS), a neuroscientist (@Drexel University, a McKinsey consultant and former CEO of Max Healthcare, Manipal Hospitals & Parkway Healthcare India.

Deeply passionate about applying technology to streamline delivery of healthcare services and to improve decision making in clinical medicine



Dr. Rohit Gupta: CoFounder & Chief AI Officer

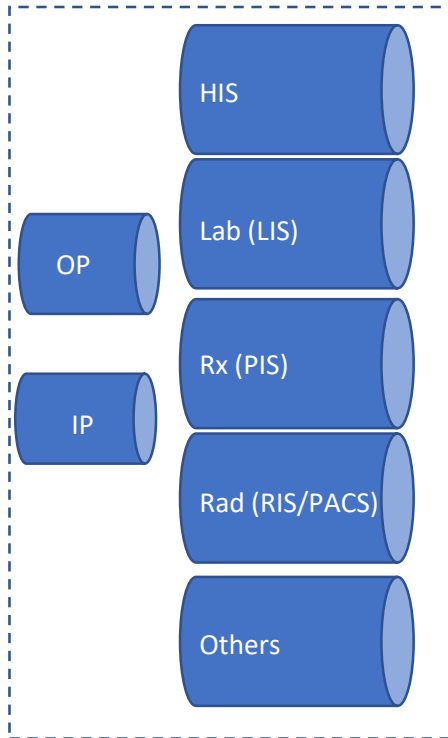
Dr. Gupta is a Ph.D. in Computer Science with deep interest and experience in applying data mining, machine learning and big data analytics to many novel scientific and commercial applications, with recent focus on healthcare, medicine, genomics and drug discovery research.

Also Adjunct Faculty at IIT-Madras and IIIT-Delhi.
Ex-Mayo Clinic, Genentech, Strand Life Sciences and MedGenome

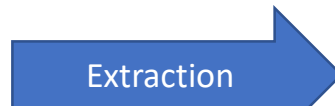
Team of 9 Data Scientists, Data Engineers, UI/UX experts – growing rapidly!



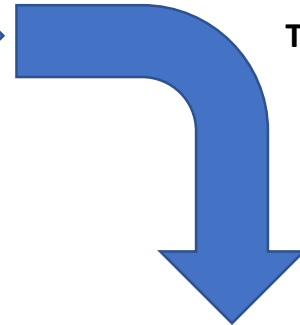
BuddhiMed is bringing this 'dark data' to light



Typical fragmented Provider IT systems

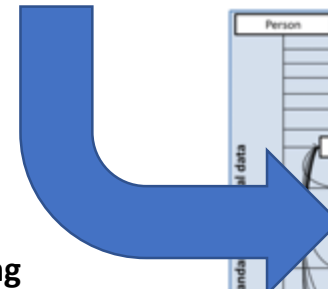


- Relevant medical concepts (e.g., diagnosis, labs, pharma etc.) need to be identified and extracted
- Advanced NLP techniques generally needed



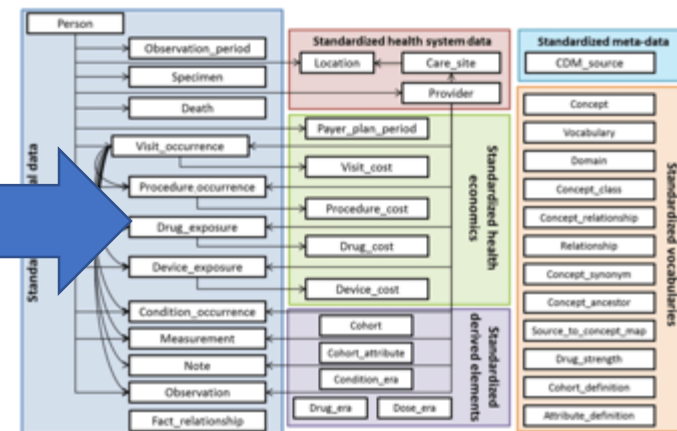
Transformation

- Concepts are transformed into standardized codes like ICD, SNOMED, LOINC etc.
- AI algorithms help automate this process



Loading

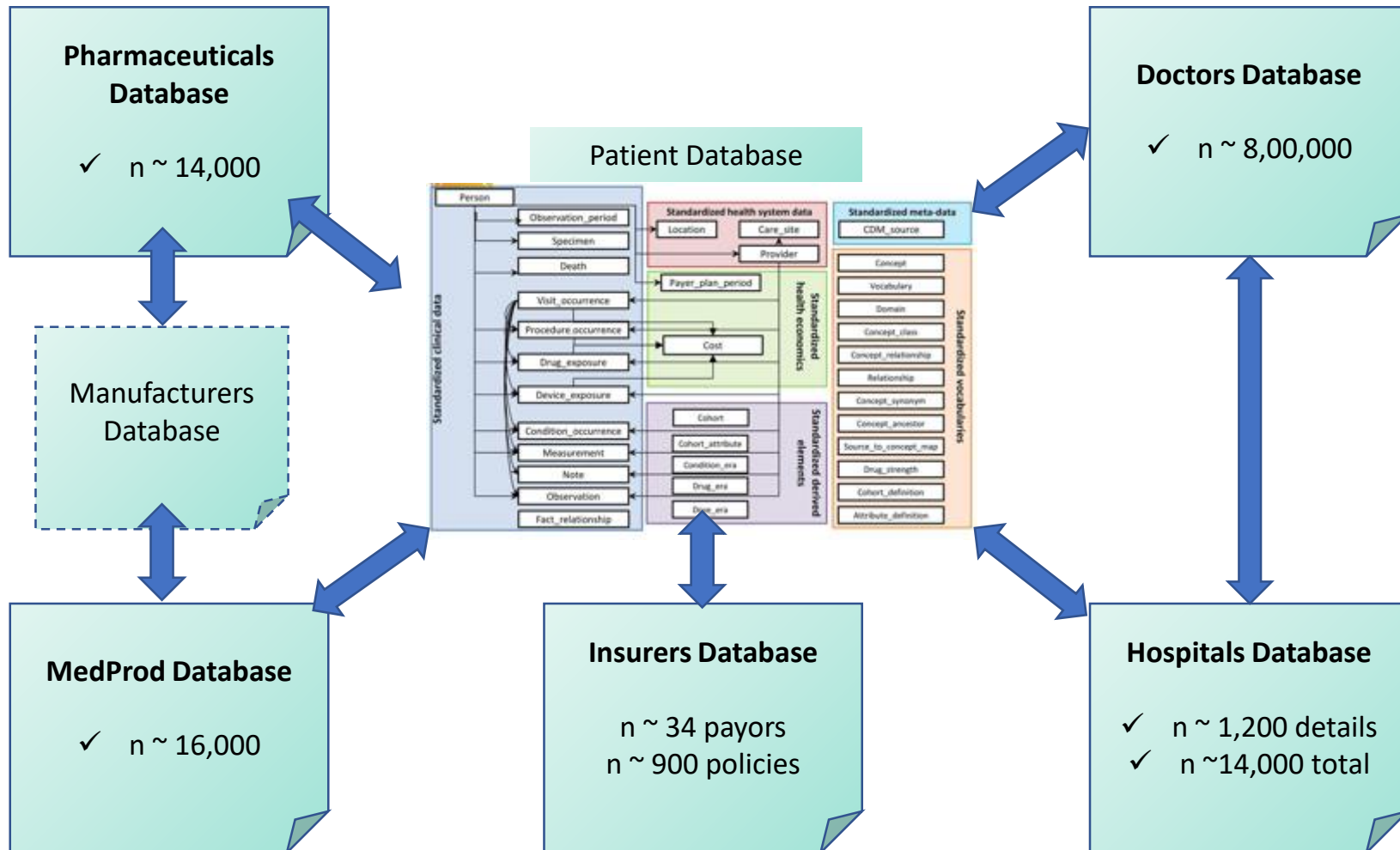
- Codes are loaded into a time-stamped longitudinal model of the patient/guest



OMOP CDM model



BuddhiMed is also building a comprehensive database of the health ecosystem



Research focused use cases of BuddhiMed's Indian Health Data Digital Ecosystem



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Health Economics

- Growth & usage of Health Insurance in India
- Consumption models
- Cost models
- Geographic variations
- Policy impact – e.g., price controls

Medical Research

- Medical Practice patterns – usage of best practices
- Outcomes analysis
- Similarity algorithms
- Predictive trajectories & interventions

Real World Evidence

- Comparative Effectiveness studies of various drugs & medical products

We invite collaborations & partnerships
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