

# DATA & OUTCOME DRIVEN HEALTHCARE

## FROM THEORY TO IMPLEMENTATION

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**Medtronic**  
Further, Together

# DATA DRIVEN HEALTHCARE WHAT IS FIRST

**SOLUTIONS MUST BE BUILT ON EFFECTIVE DATA ANALYTICS AND CHANGE MANAGEMENT, WHICH IN TURN LIVE OR DIE BASED ON THEIR SOLID ALIGNMENT AMONG ALL STAKEHOLDERS.**

# HEALTHCARE DATA BASIC STRUCTURE

## ADMINISTRATIVE DATA

### POSITIVES

- Excellent for Healthcare planning
- No lost follow-ups
- No selections bias (population vs samples)
- Cost analysis
- Deaths

### NEGATIVES

- Lack of clinical information  
Diagnoses, Indications, Severity
- Linkage pitfalls
- Questionable comparative effectiveness research

## CLINICAL DATA

### POSITIVES

- Clinical information
- Diagnosis validation, Indications, Severity
- Patient is patient before becoming code
- Comparative effectiveness research

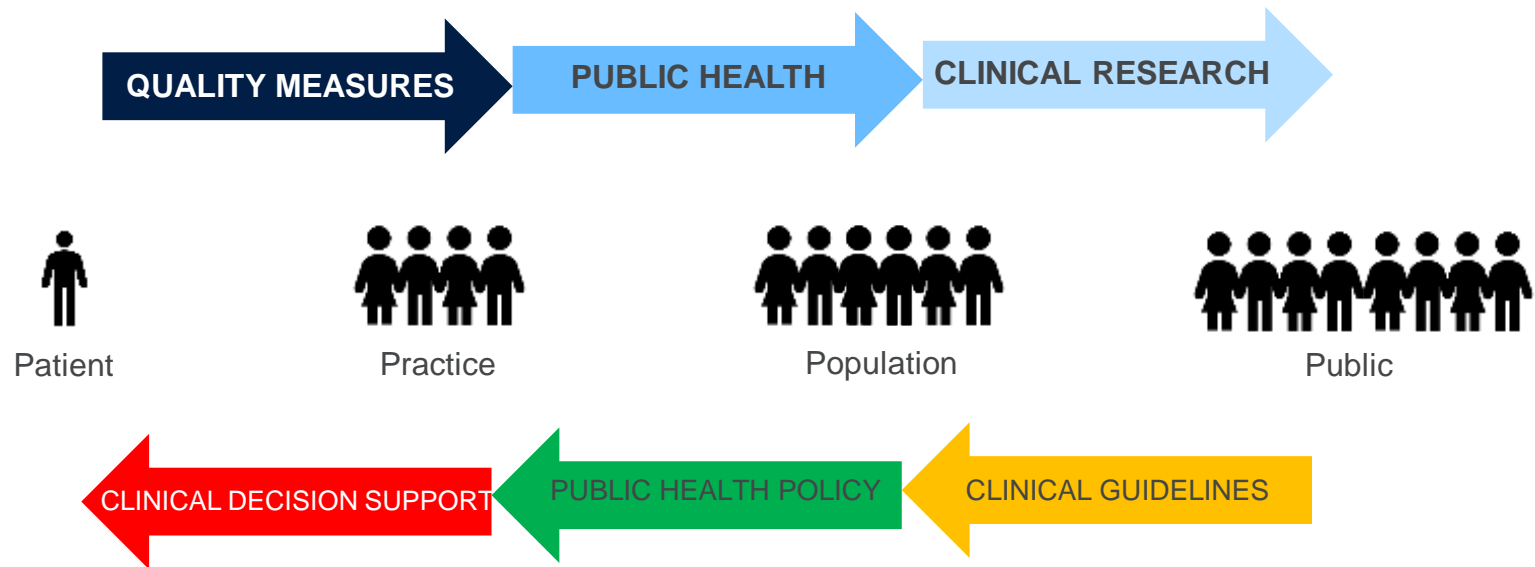
### NEGATIVES

- Patient lost in the database
- Missing information
- Accuracy on cost / events

Source: Prof. Lorenzo Mantovani

# DATA INTEROPERABILITY ULTIMATE KEY FOR CORRECT INTERPRETATION

Personal Health Record   Electronic Health Record   Health Information Exchange   National and International Healthcare Analytics



**FIXED HEALTHCARE DATA STRUCTURE IS CRUCIAL AND MANDATORY TO ALL ELEMENT**

# PATIENT REGISTRIES ARE KEY FOR MEASUREMENT OF THE OUTCOMES

ROLE OF MEDICAL SOCIETIES IS CRUCIAL TO SETUP CORRECT METHODOLOGY

## E-HEALTH AS RESOURCE



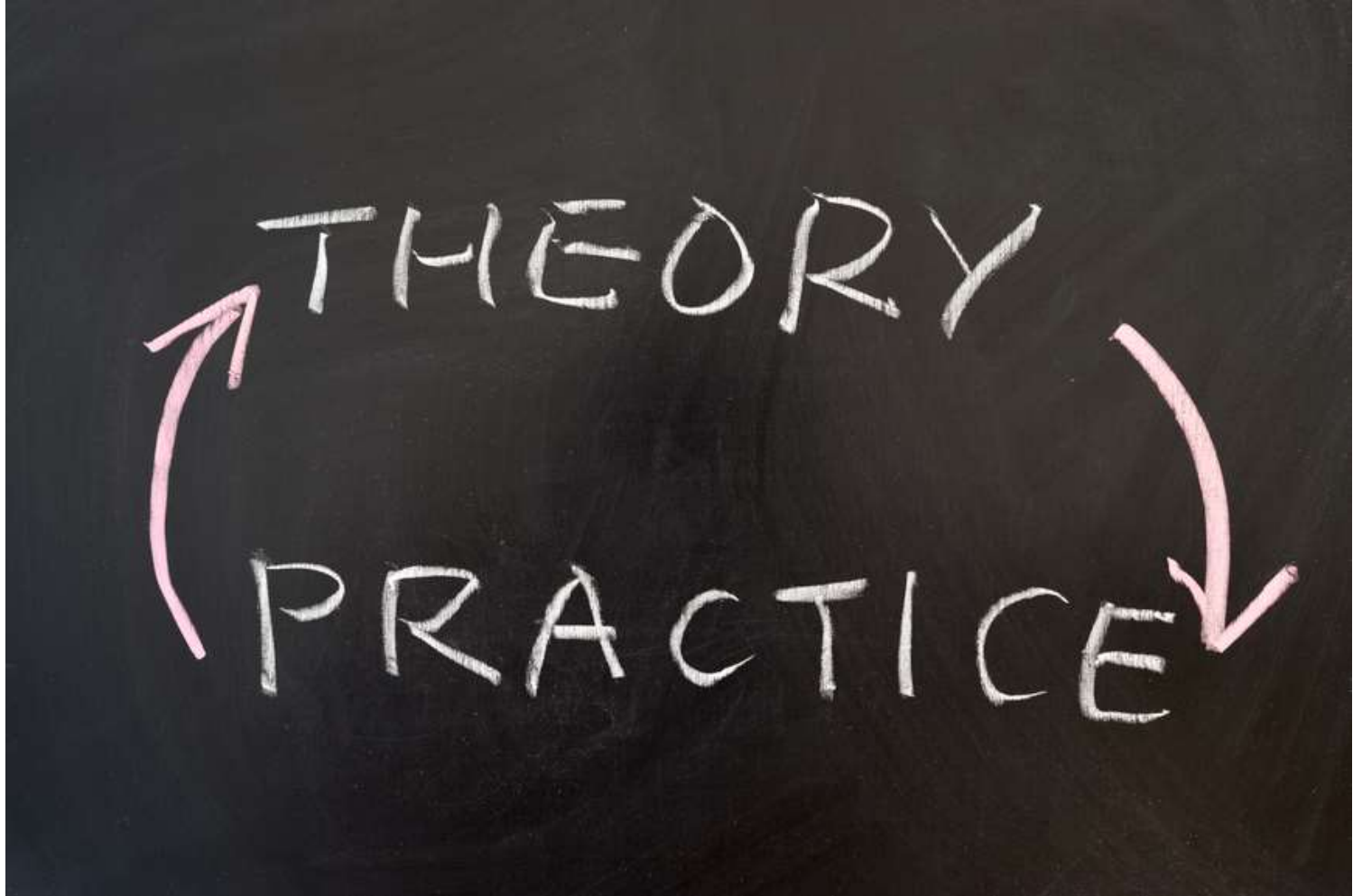
Patient data  
from  
Administrative  
Database

Therapy  
Recorded  
From  
Medical Record

Therapy  
Follow-up  
According  
Latest Guidelines

**DRG data  
need to include  
all details on therapy**

# PRACTICAL EXAMPLES TO FOLLOW



# FOCUSING ON COST DRIVERS SHOW IMPACT

## THE PROBLEM

**60%** OF DEATHS GLOBALLY ARE FROM  
CARDIOVASCULAR DISEASE & DIABETES



# SLOVAKIA: DIABETES AND HOSPITAL CARE

## A FEW NUMBERS ON DIABETES ONLY W/O COMPLICATIONS

**DIABETES  
IS ONE OF THE MOST  
FREQUENT CAUSES  
OF HOSPITALIZATION  
IN SLOVAKIA**

RANK 25

**8 667  
HOSPITALIZATIONS**  
77 776  
CARE DAYS  
**196  
DEATHS**

**AVERAGE STAY  
IN HOSPITAL DUE  
DIABETES**

**9,0 DAYS**

**ESTIMATED COST OF CARE FOR HOSPITALIZATIONS DUE DIABETES  
5,3 MILLION EUROS\***

*\*Based on est cost 68EUR / care day*

**COULDN'T WE IMPROVE CARE AND TAKE OUT THESE PATIENTS FROM HOSPITALS**

*Source: NCZI 2017*



# SOLUTION: CGM AND IMPROVED PATIENT MANAGEMENT

IMPROVE MEASUREMENT OF PATIENT OUTCOMES

USE GAINED DATA TO EDUCATE PATIENT MANAGING HIS DISEASE

USE DATA TO ASSURE ACCURATE THERAPY INTERVENTION



Assess results quickly

- Simple visuals
- Most important metrics — all on one page!

Identify priority issues

- Top three issues prioritized
- Visuals of meal times and daily glucose values

Educate and coach patients

- Details of each priority issue
- Possible causes for each pattern



# FOCUSING ON COST DRIVERS SHOW IMPACT

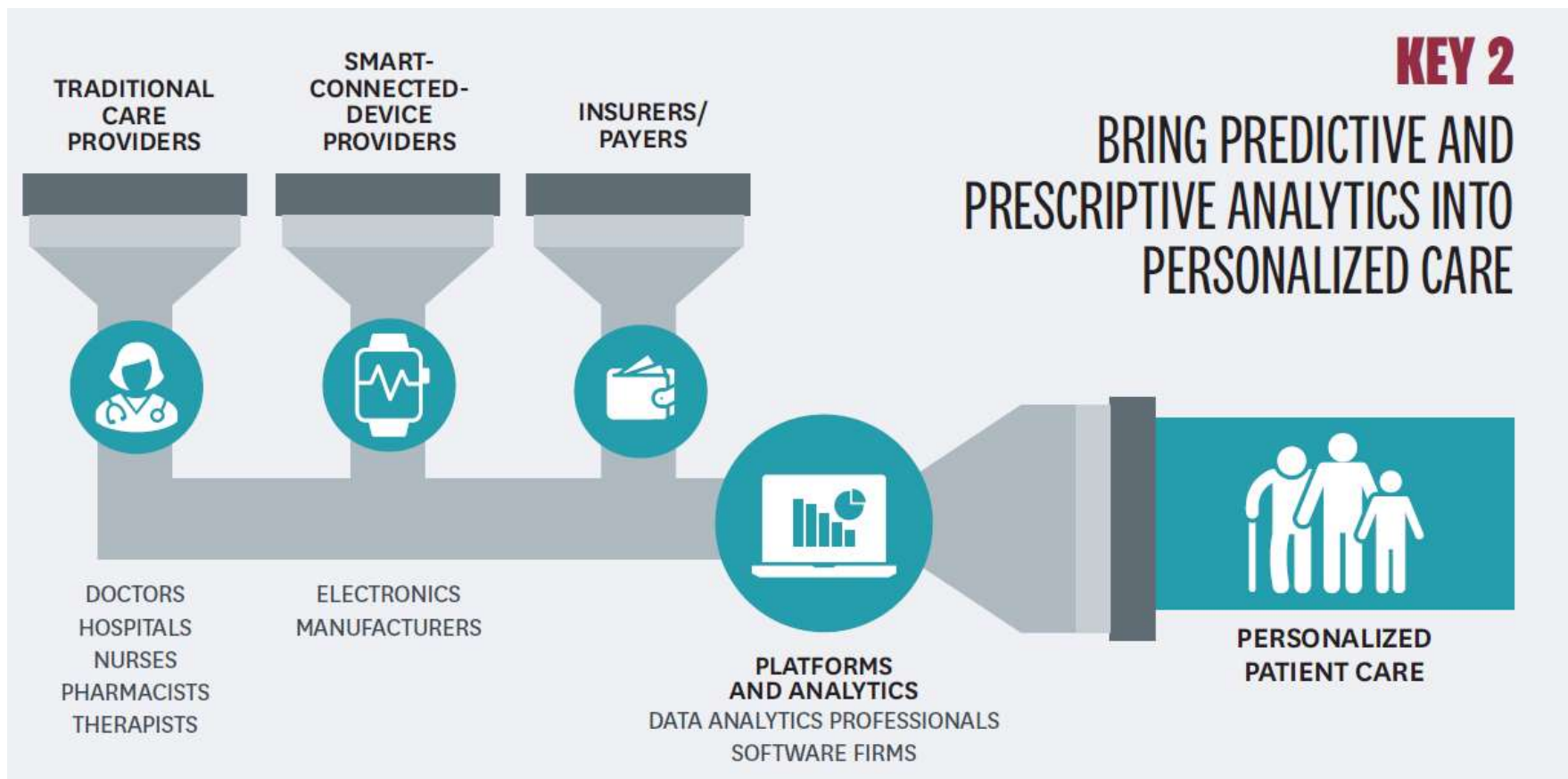
## THE SOLUTION

### KEY 1

ALIGN STAKEHOLDERS  
ON VALUE



# FOCUSING ON COST DRIVERS SHOW IMPACT



# FOCUSING ON COST DRIVERS SHOW IMPACT

## KEY 3

FURTHER ENGAGE AND EDUCATE PATIENTS IN THEIR OWN CARE



MEDICATION  
TRACKING



FITNESS  
TRACKING



SMART  
LENSES



SMART PATCHES/  
PILLS



“Without data  
you’re just  
another person  
with an opinion.”

- W. Edwards Deming,  
Data Scientist