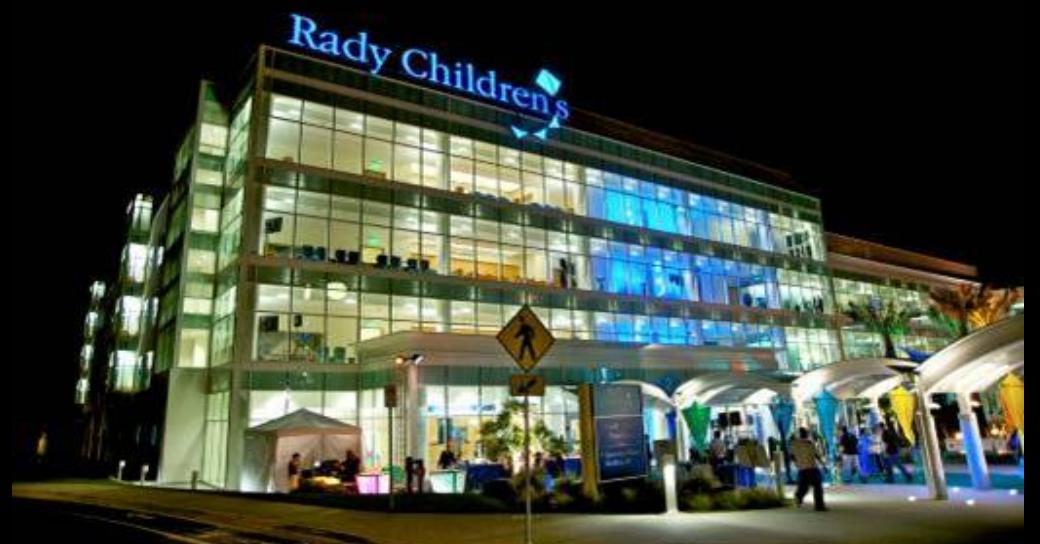


Digital Transformation

Rady Children's Hospital – San Diego

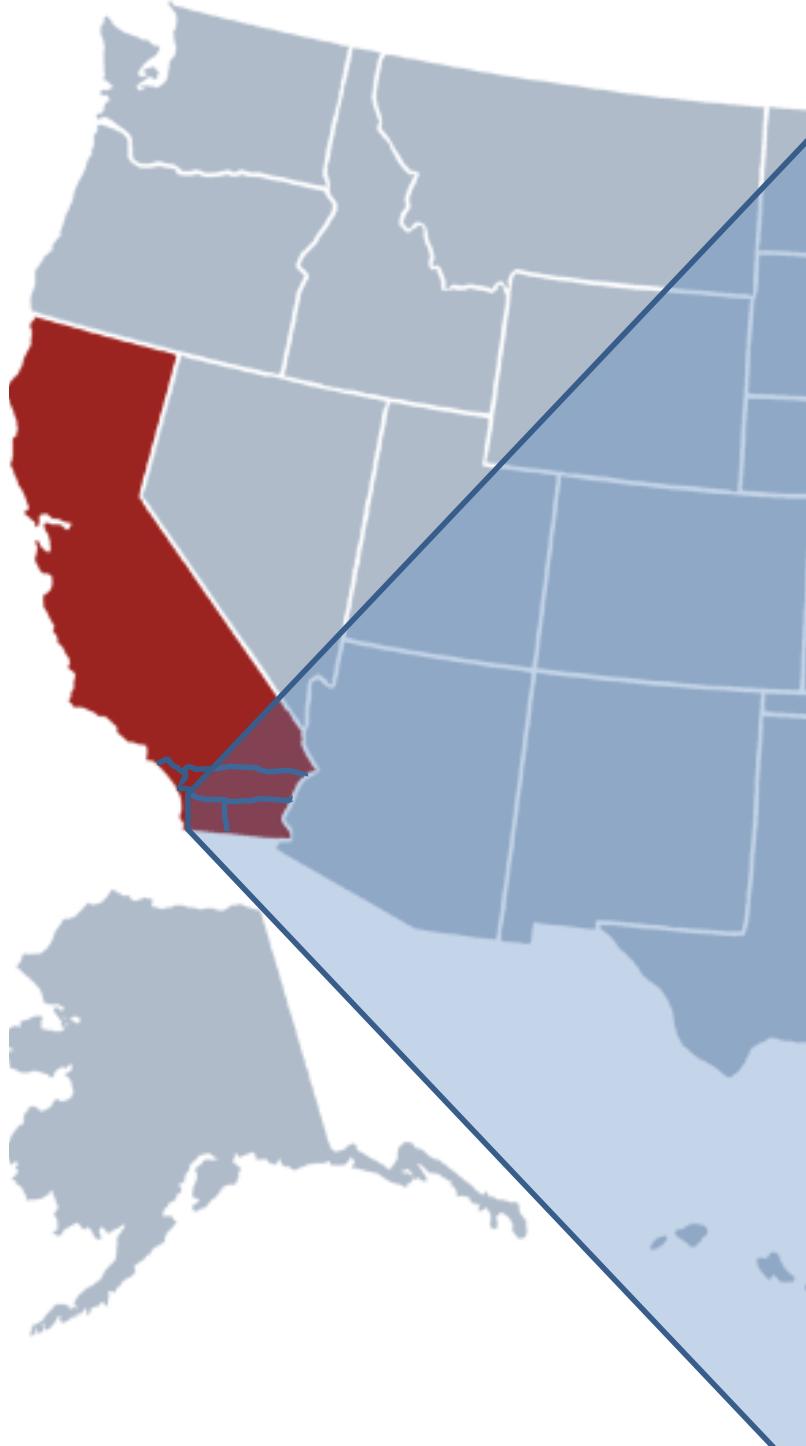


Agenda

- Context: Rady Children's
- The never-ending journey:
 - Electronic records
 - Interoperability
 - Patient engagement
 - Personalized medicine
- What's next







2017

551

beds

44

clinics

92%

population

1M

kids and adolescents

\$1,100 M
revenue

5,200
employees

816

pediatricians

1,500

nurses

1,200

volunteers

20,000

discharges

710,000
visits

95,000

emergency visits

20,000

surgeries



HealthCare's
most
wired®

Rady Children's



A photograph of a coastal road curving along a cliff edge. The road is paved with a yellow double line. To the right is a steep drop-off to the ocean, with green coastal vegetation growing on the edge. The ocean is a vibrant blue with white-capped waves crashing against the rocks below. The sky is a clear, pale blue.

The
never-ending
journey

2006

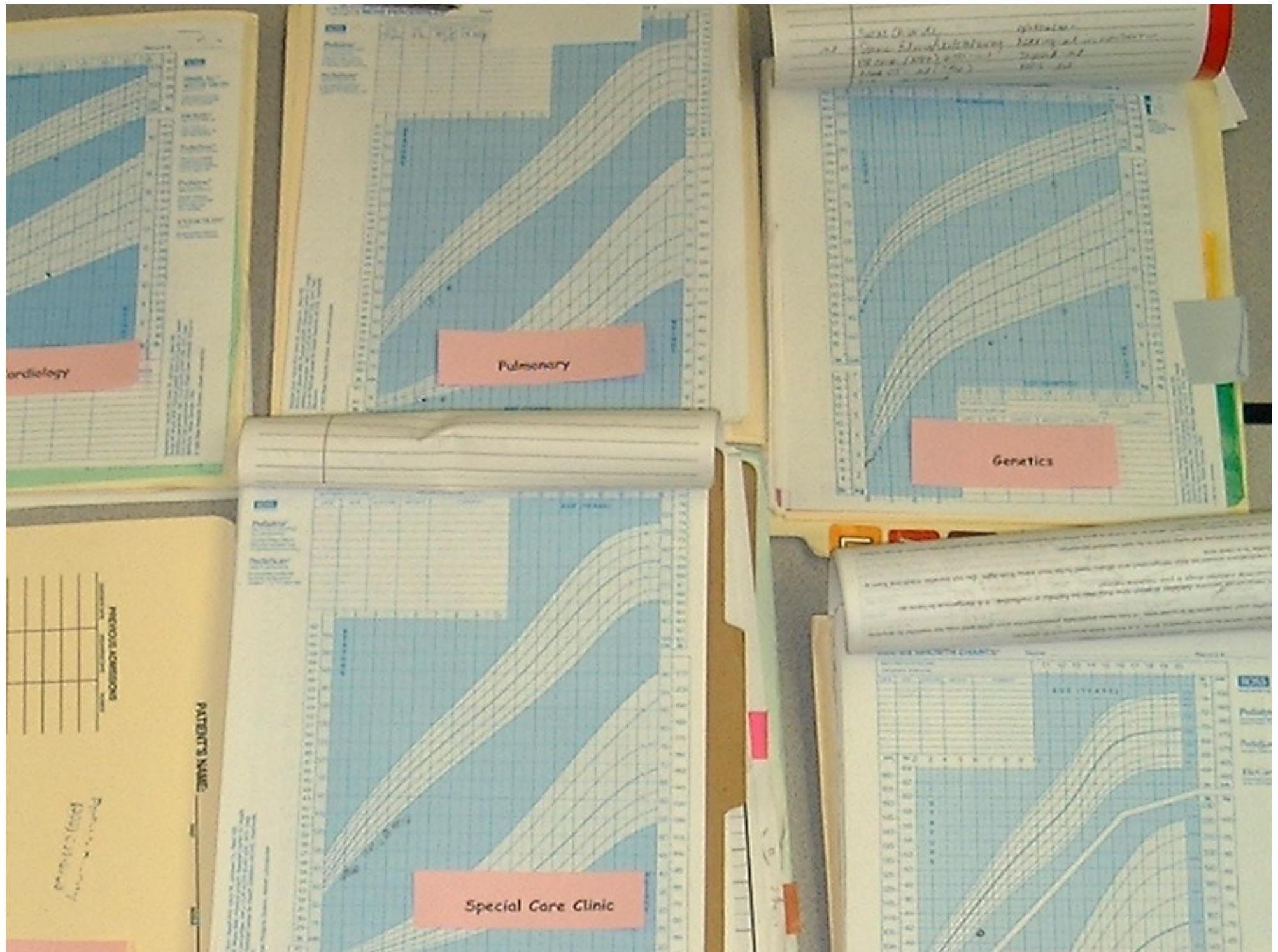


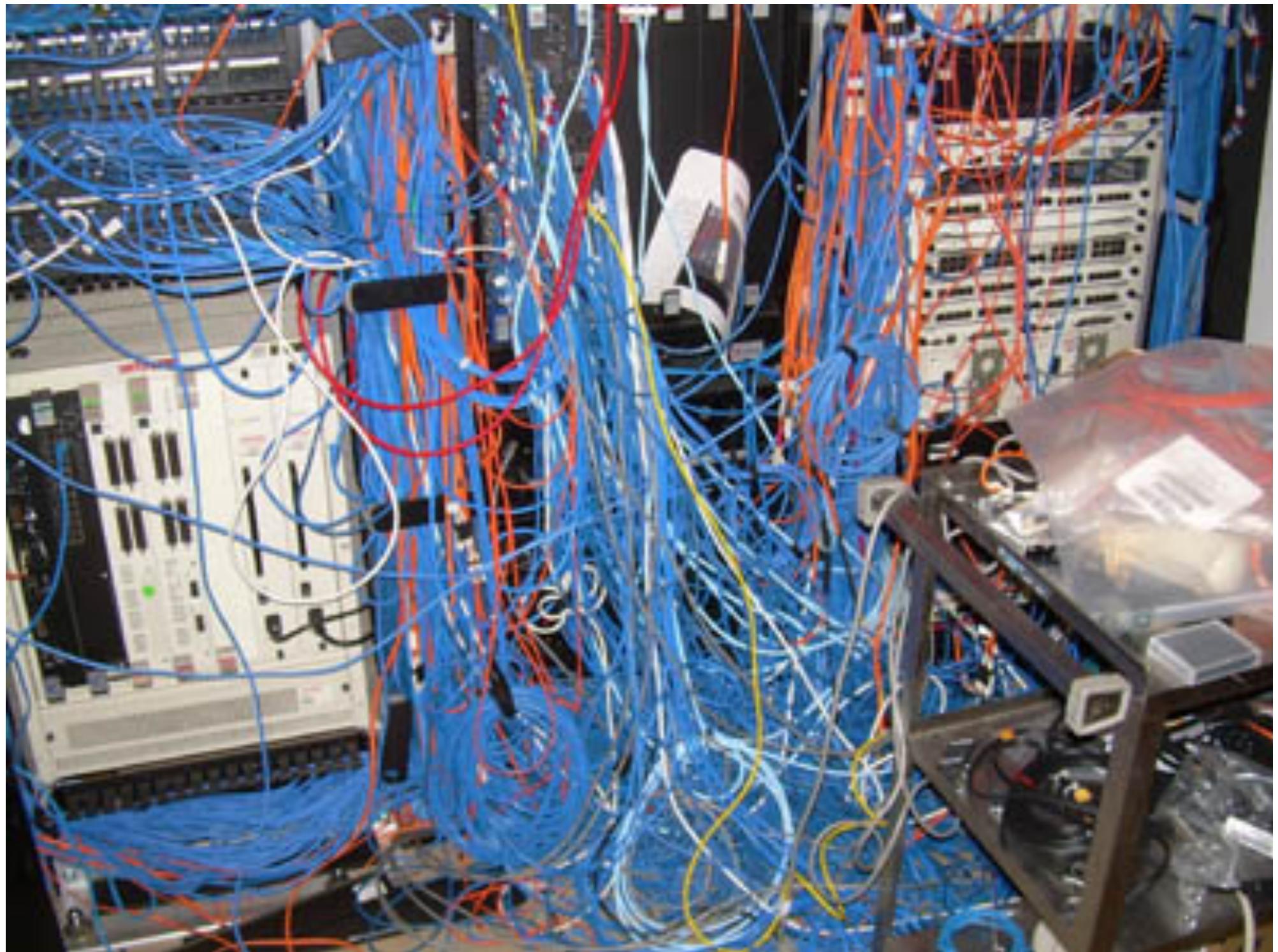




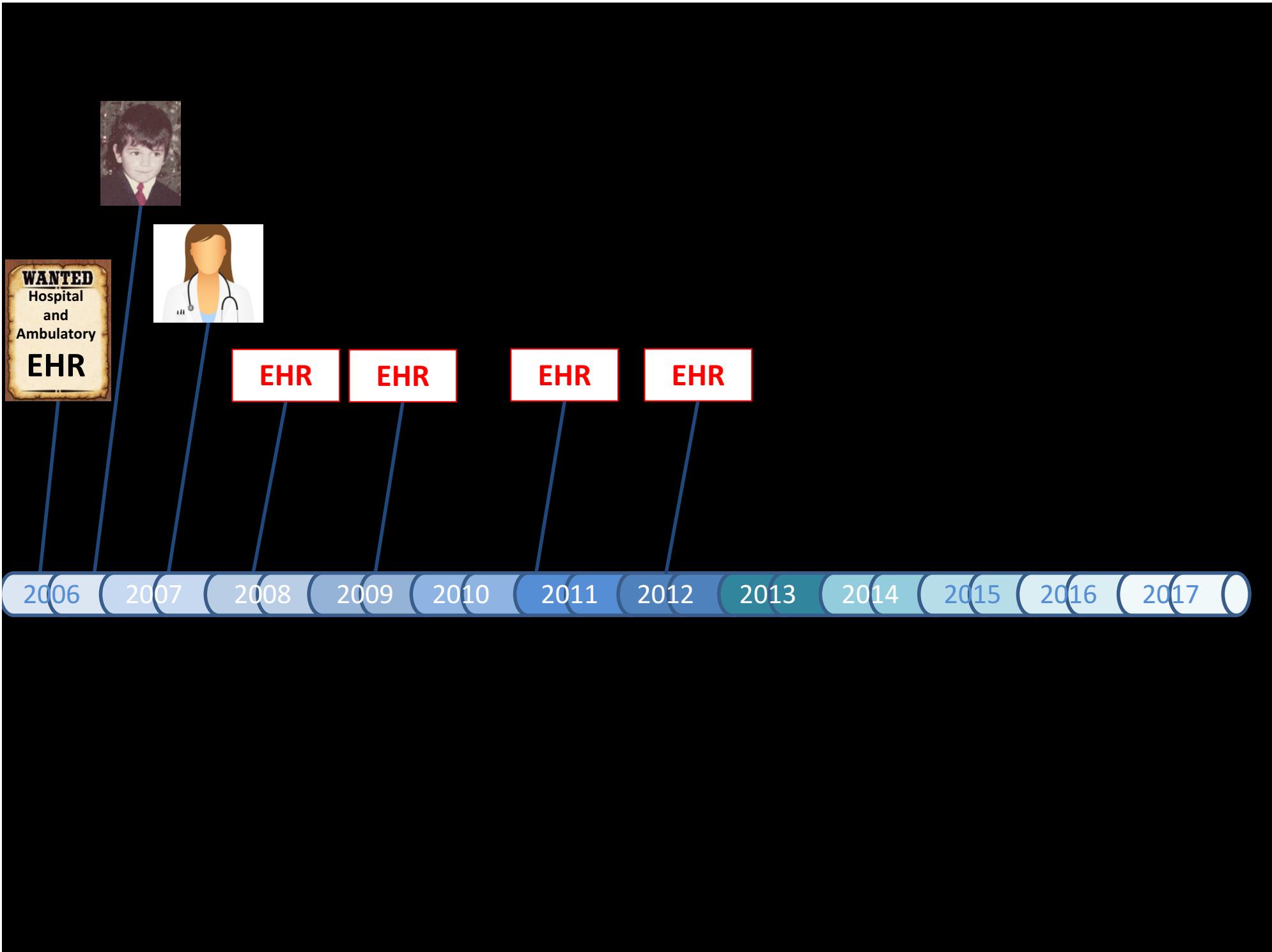














Over
5% 0.2%



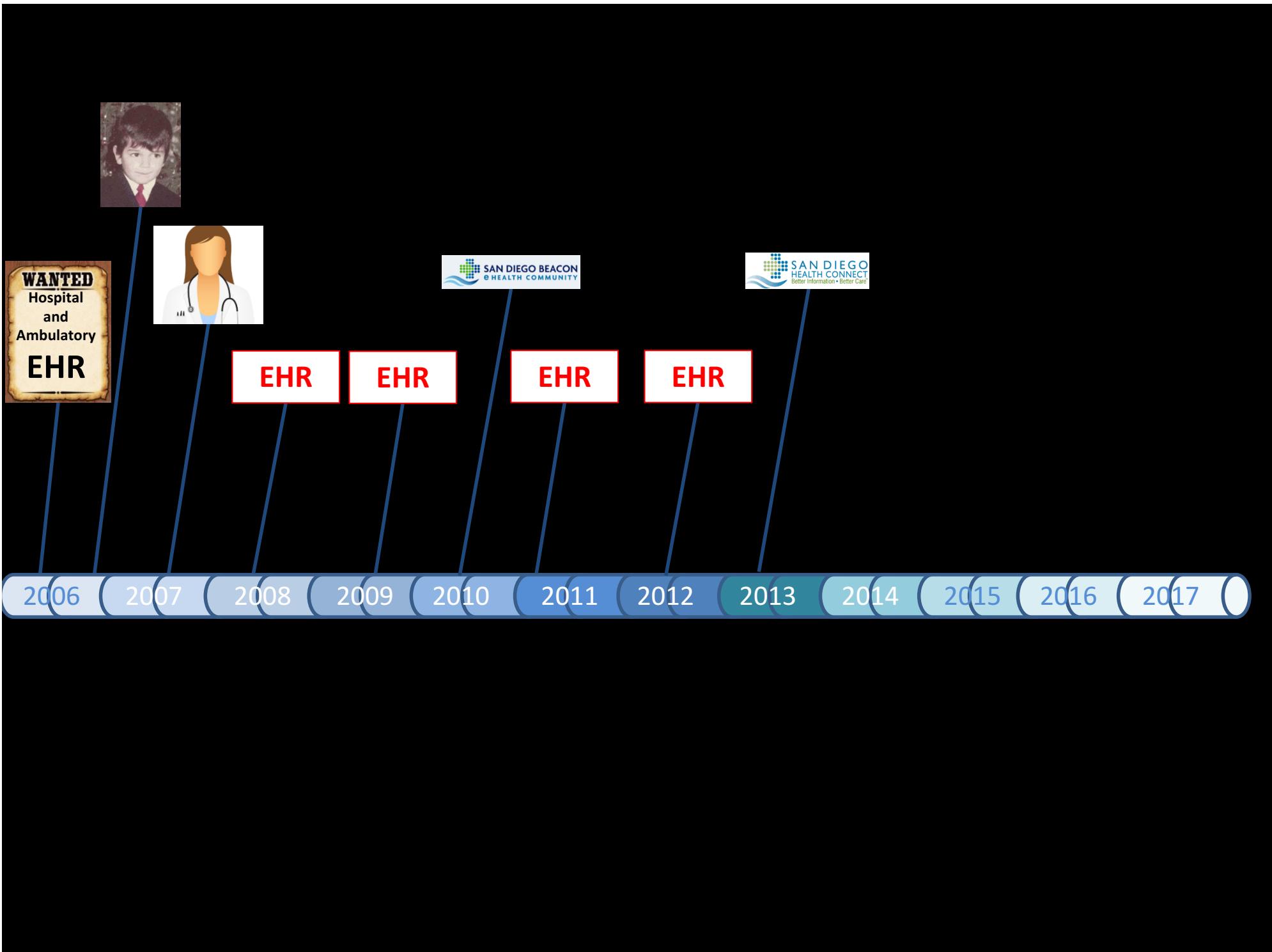
\$2M ➤➤➤ \$20K



54%

medication
administration errors





3.4M
records

1,500
hospitals

1,400

emergency departments

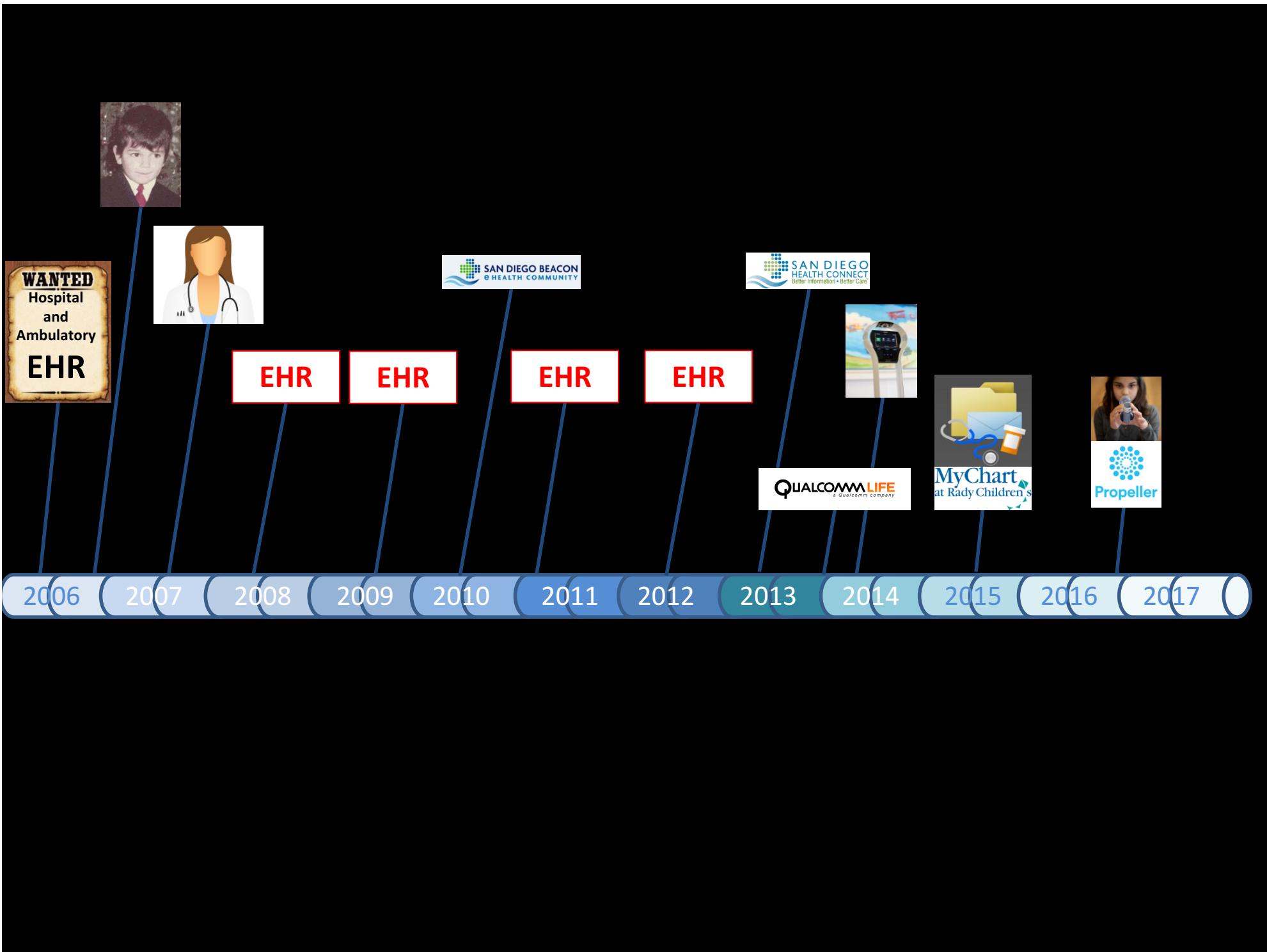
33,000

clinics

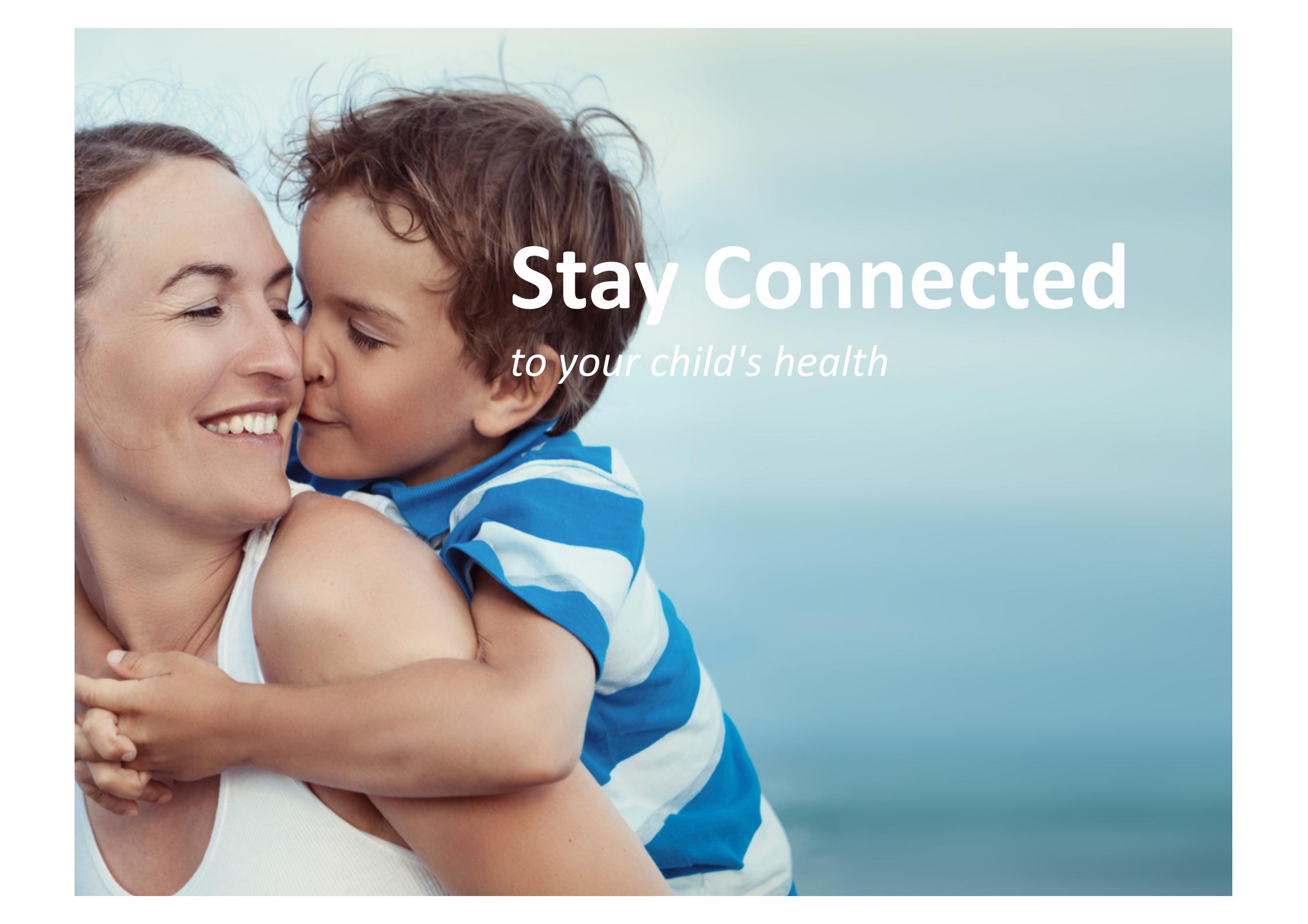
49

states







A close-up photograph of a woman with dark hair and a young boy with brown hair. The woman is smiling and holding the boy, who is wearing a blue and white striped shirt. They are set against a soft, blue-toned background.

Stay Connected

to your child's health



Visit duration

Minutes



100

90

80

70

60

50

40

30

20

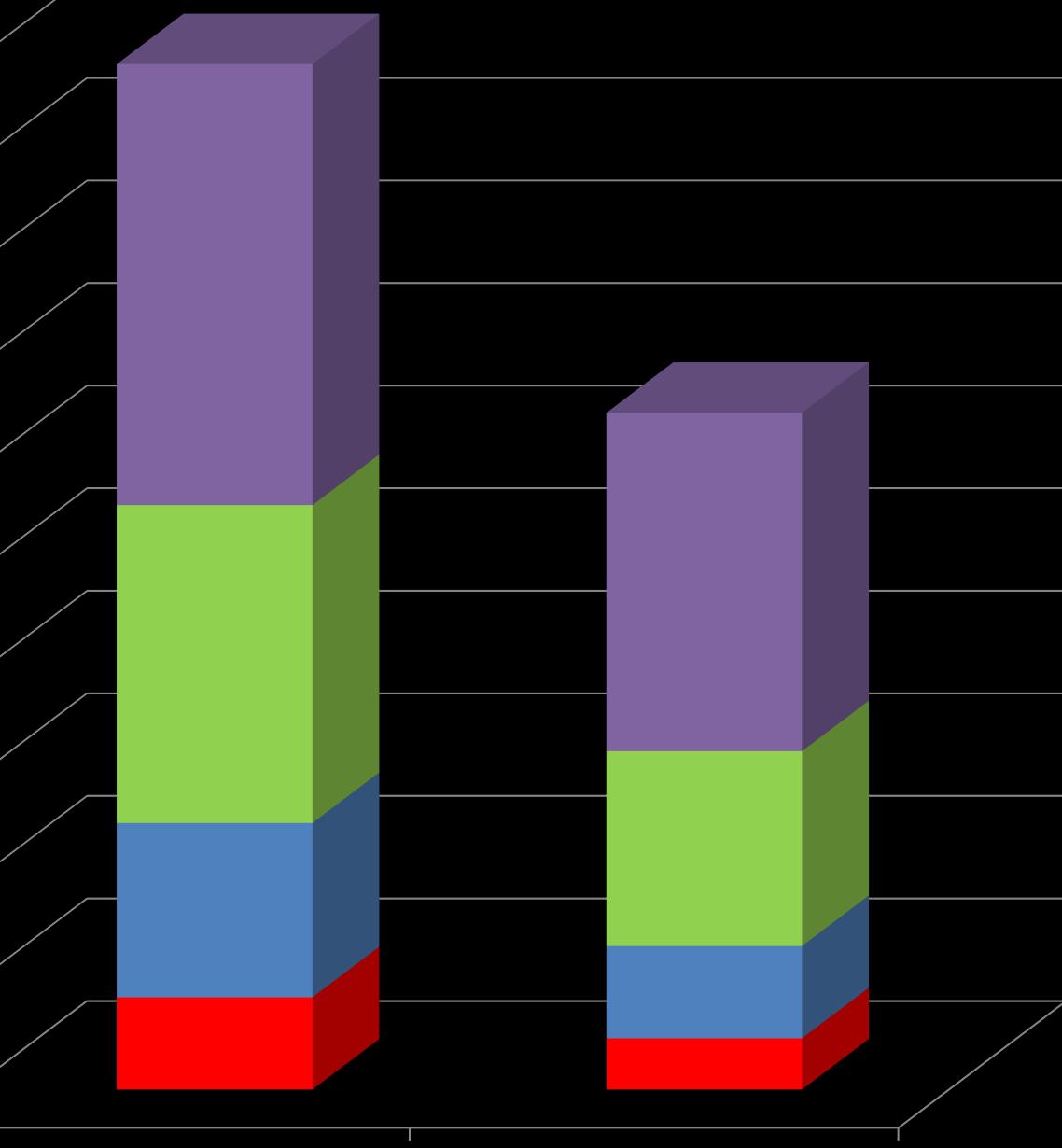
10

0

No Questionnaire

With Questionnaire

- Physician
- Wait in exam room
- Nurse
- Waiting room







Telemedicine



Peer review

Grand
rounds

Remote
monitoring

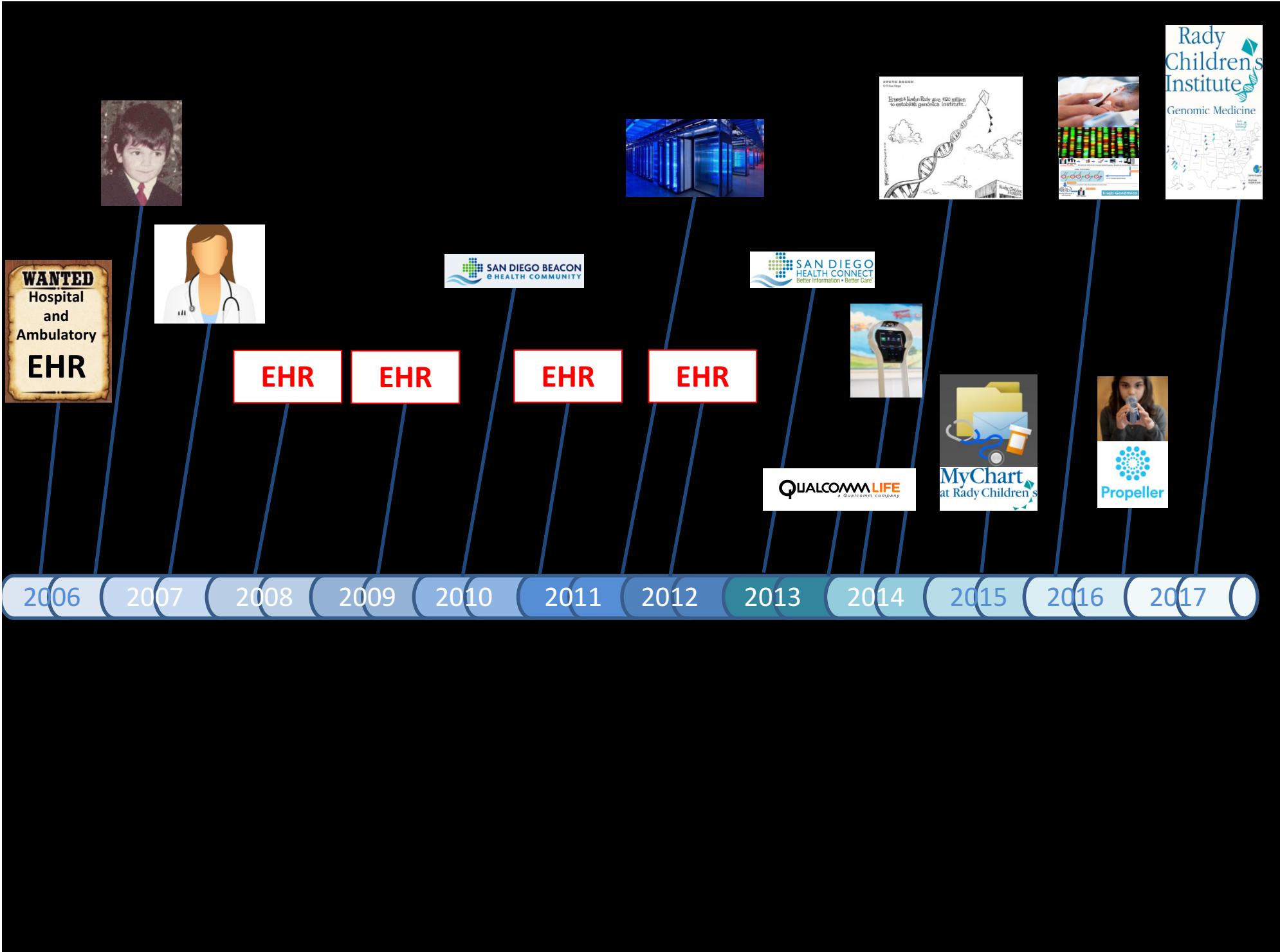
Professional
consults

eVisits

Homecare, primary
care and specialty
consultations





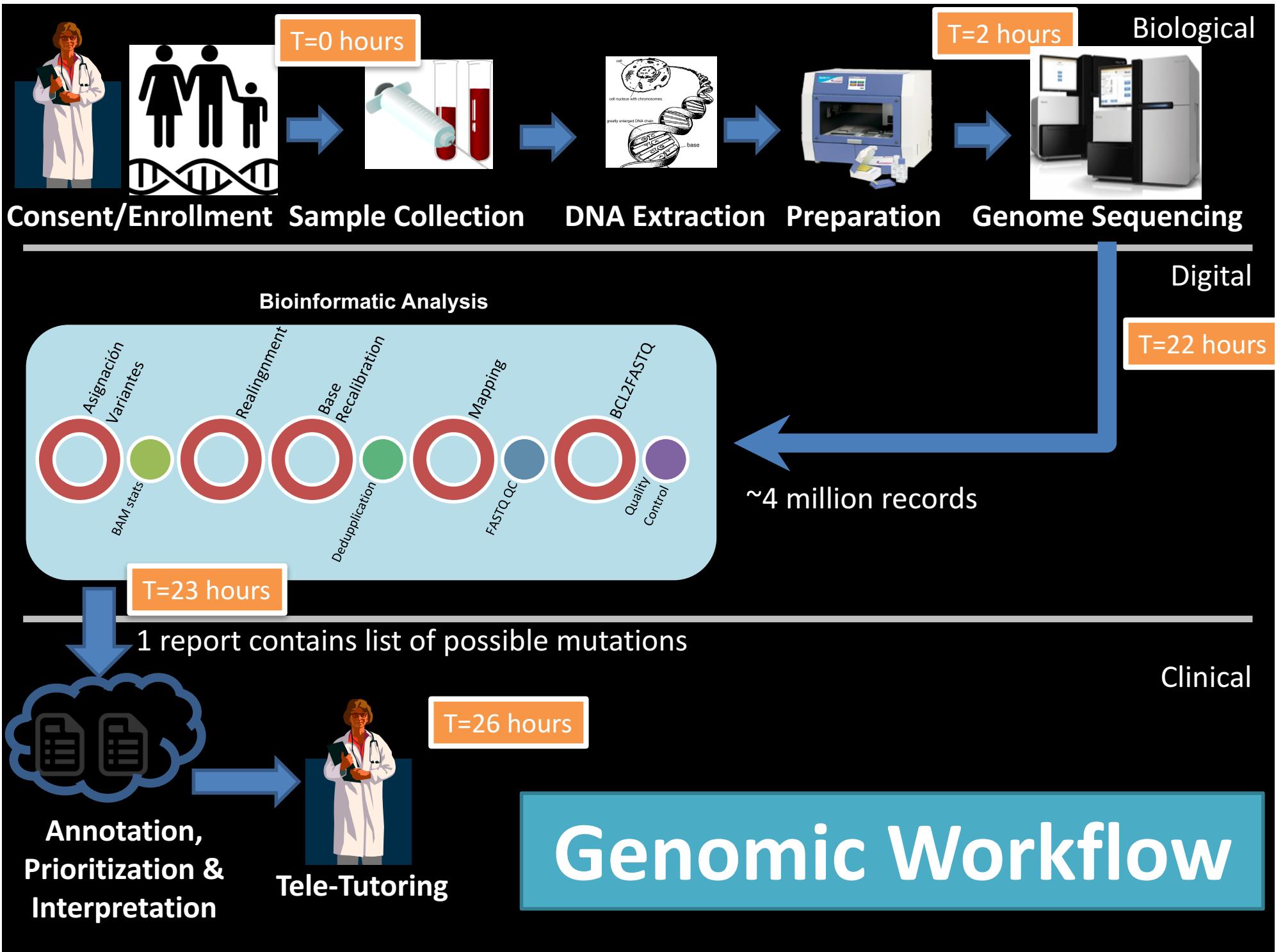


Ernest & Evelyn Rady give \$120 million
to establish genomics institute...

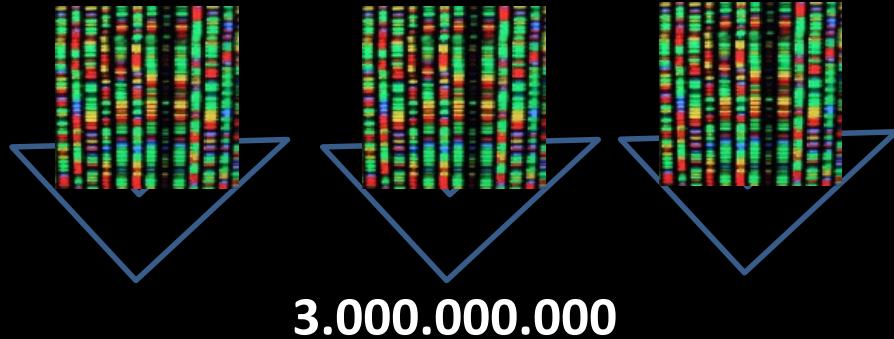
BRENN U-T San Diego © 8-5-14







Whole genome sequencing
(WGS)

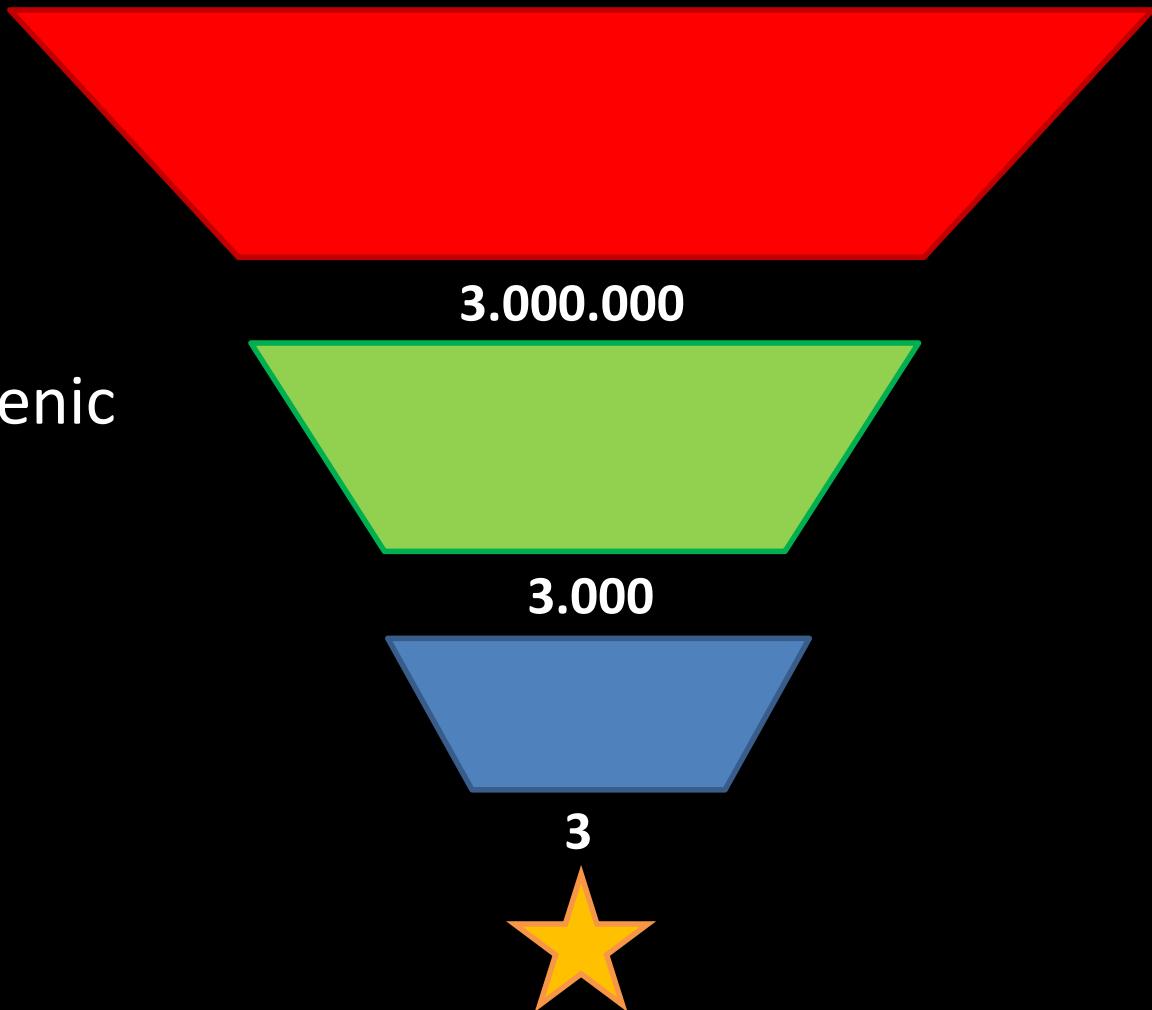


Identification of
variants from reference
genome

Exclusion of non-pathogenic
variants

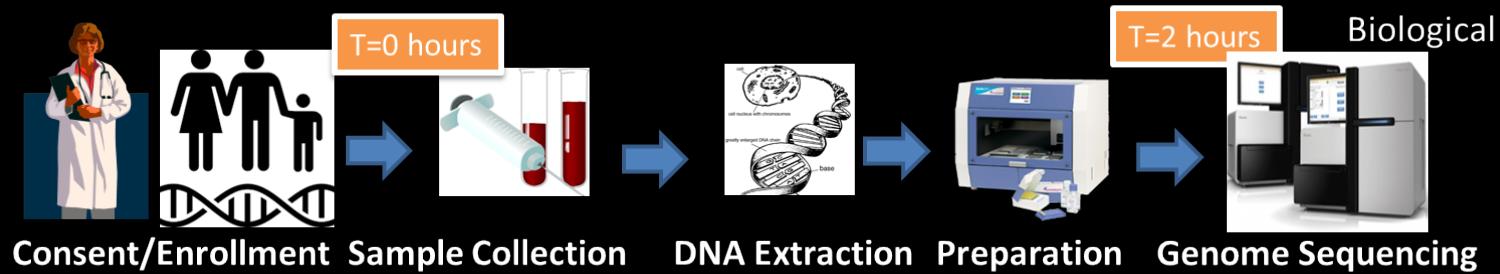
Correspondence with
phenotype

Diagnosis



Phase 2

EHR



Bioinformatic Analysis



~4 million records

T=19 hours
1 report contains list of possible mutations

Clinical

Genomic eWorkflow

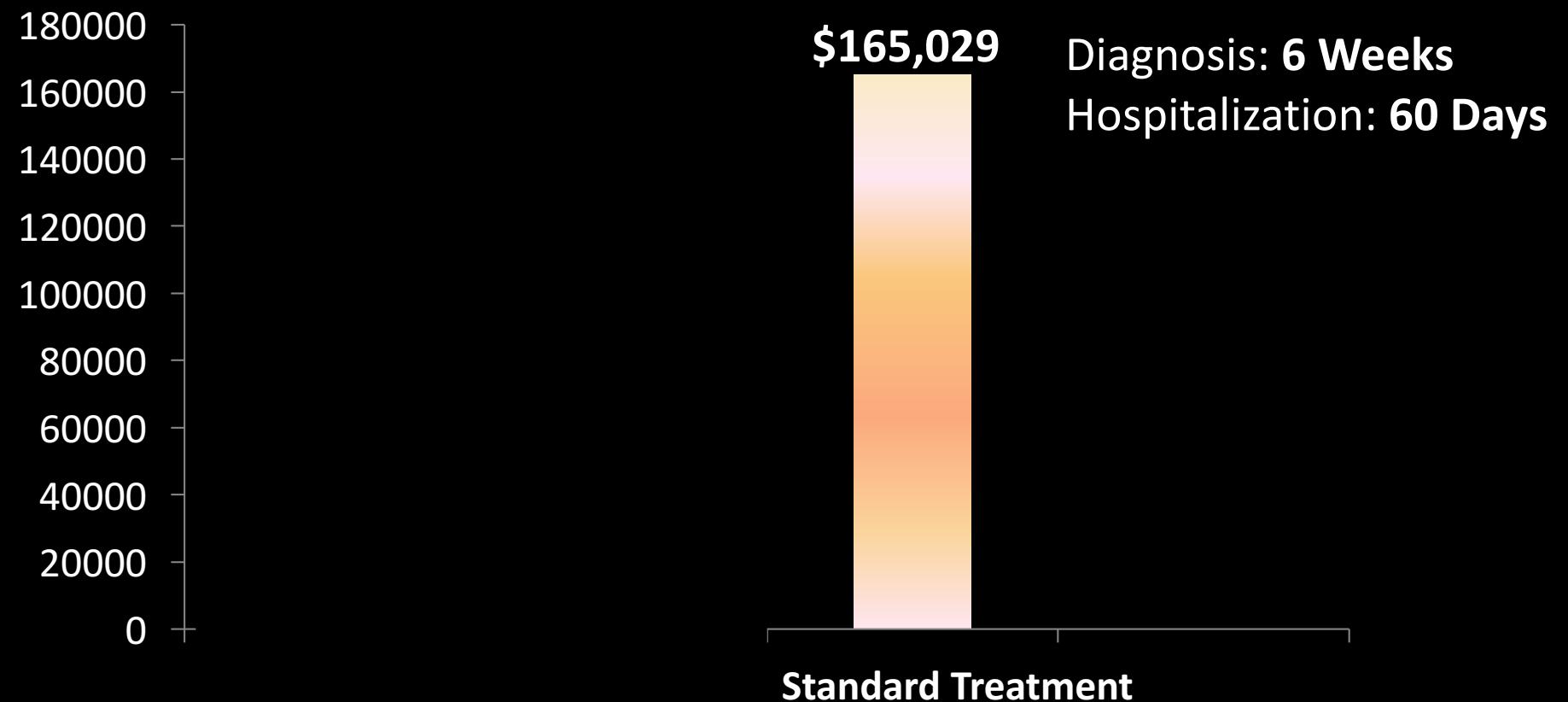
Deep Phenotype Data

Annotation, Prioritization & Interpretation



EHR

Comparison of Actual Costs Incurred



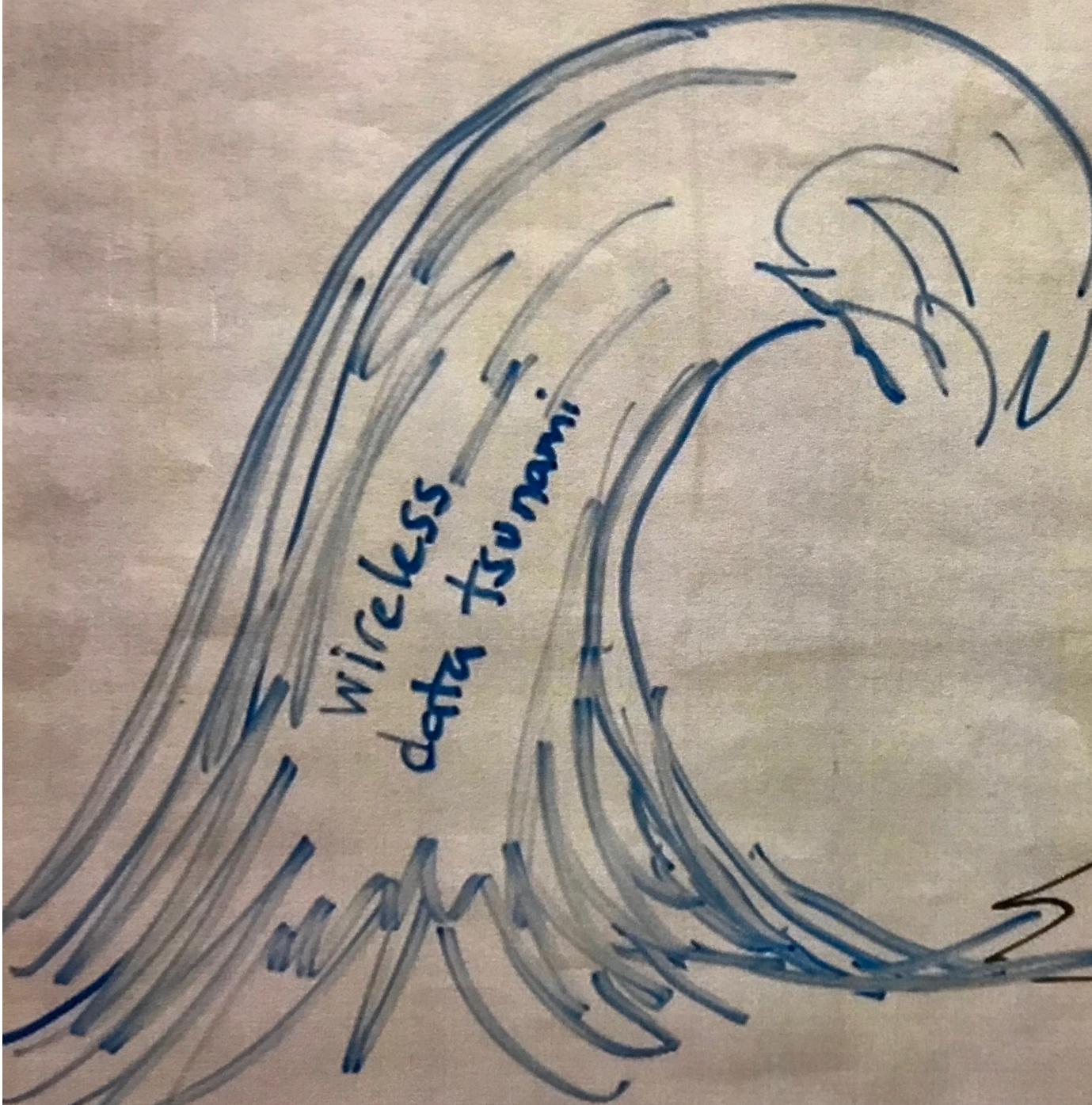


*Genome England
King Faisal*



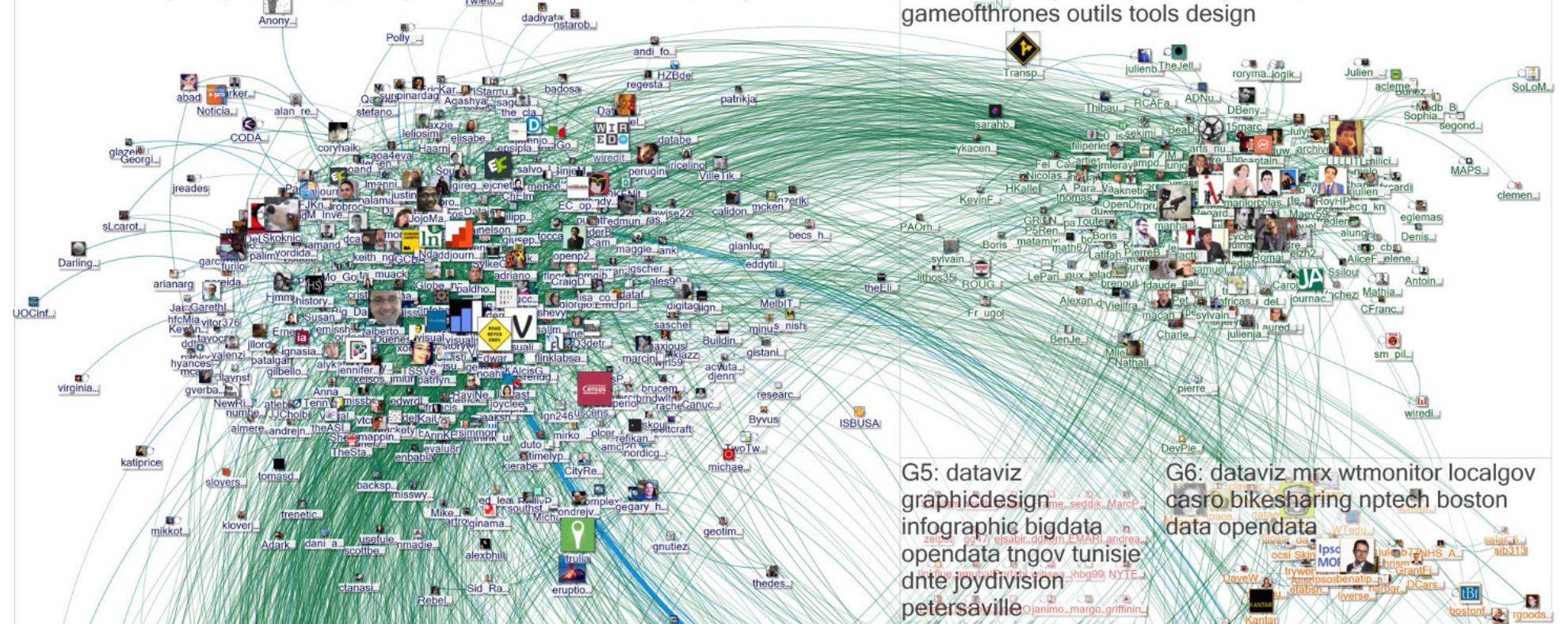
Now What?



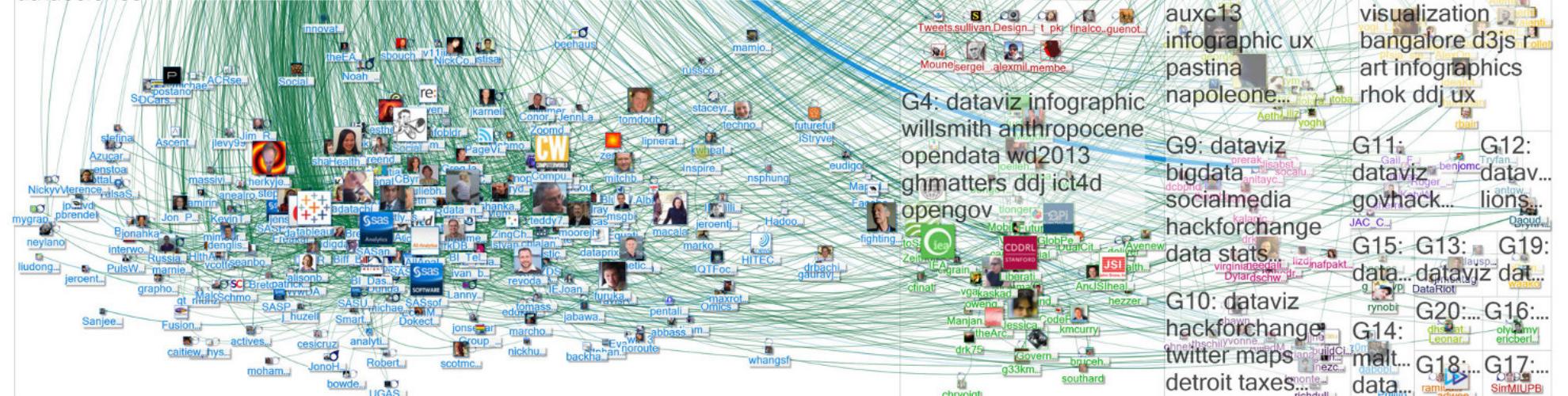


G1: dataviz ddj infographics bigdata govhack opendata data maps d3js visualization

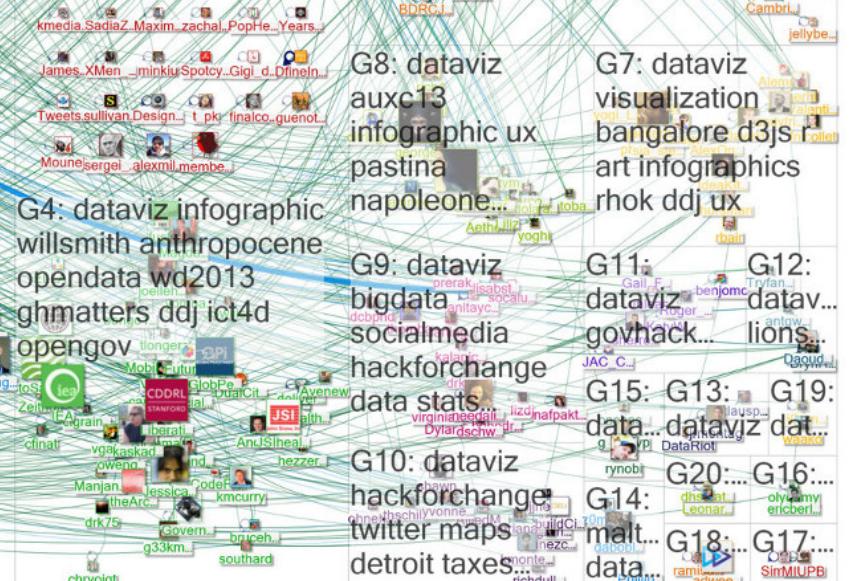
G3: dataviz ddj socialmedia bigdata opendata football gameofthrones outils tools design



G2: dataviz bigdata sas visualization analytics data infographic rstats facebook datascience



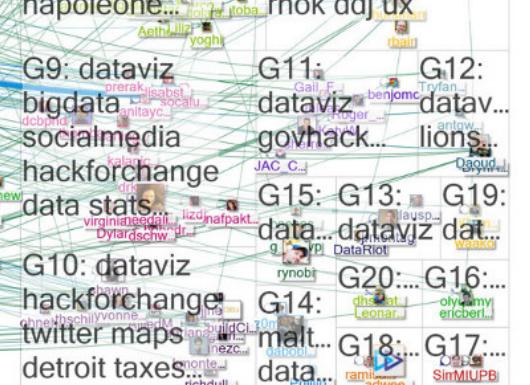
G5: dataviz graphicdesign infographic bigdata opendata tngov tunisie dnte joydivision petersaville



G4: dataviz infographic willsmith anthropocene opendata wd2013 ghmatters ddj ict4d opengov



G6: dataviz mrx wtmonitor localgov casro bikesharing nptech boston data opendata



G7: dataviz auxc13 infographic ux pastina napoleone... rhok ddj ux



G8: dataviz visualization bangalore d3js r art infographics rhok ddj ux

G9: dataviz bigdata socialmedia hackforchange data stats...

G10: dataviz hackforchange twitter maps...

G11: dataviz dat... govhack... lions...

G12: dataviz ... govhack... lions...

G13: G19: data... dataviz dat...

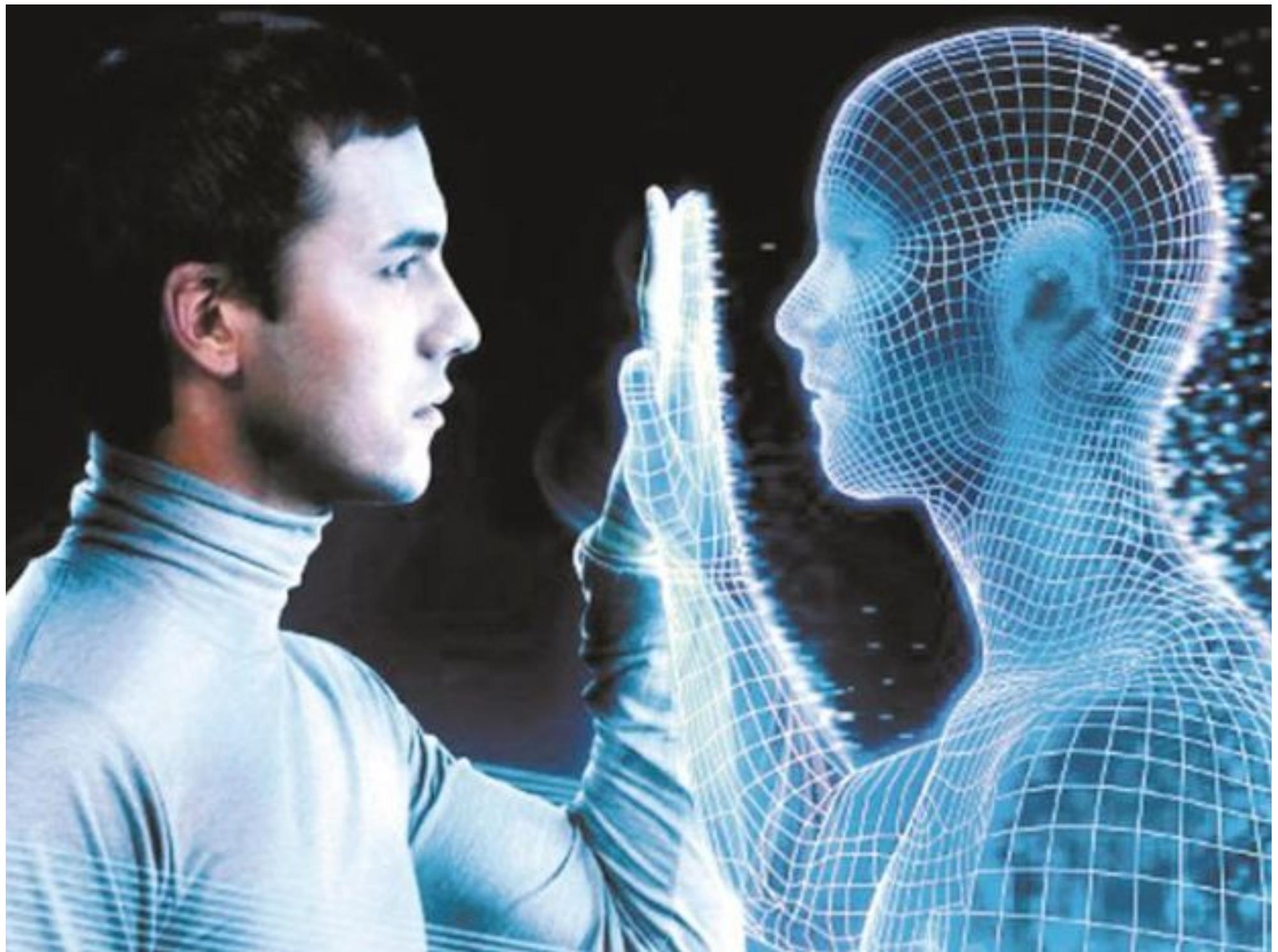
G15: G13: G19: data... dataviz dat...

G20: G16: ... data...

G14: malt... data...

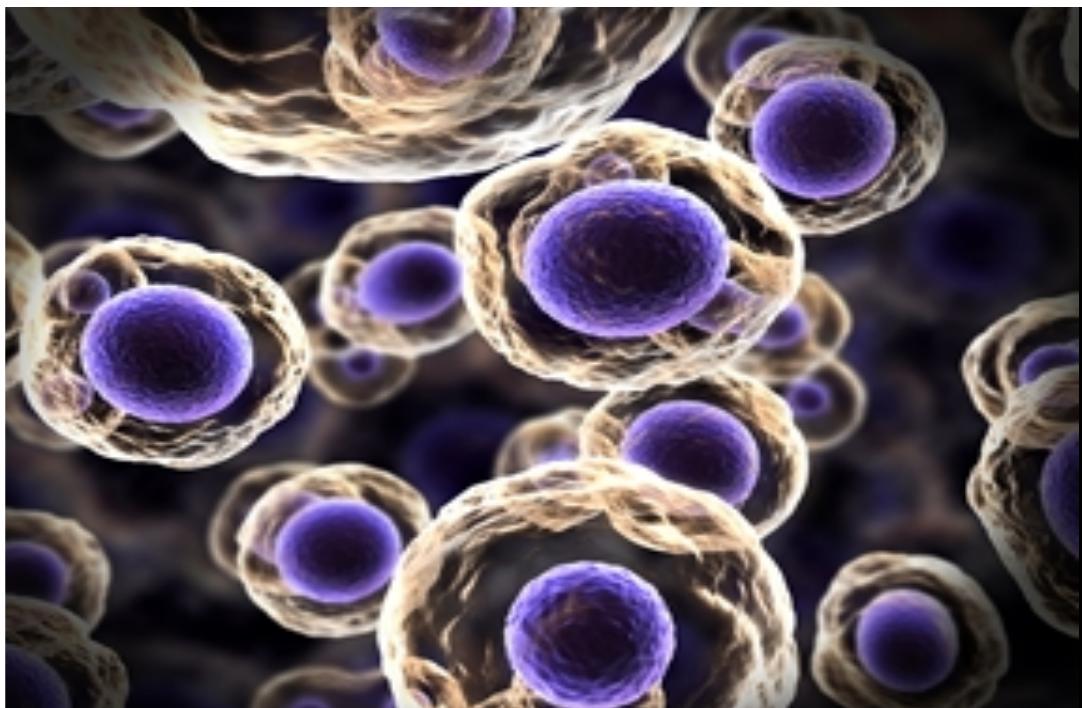
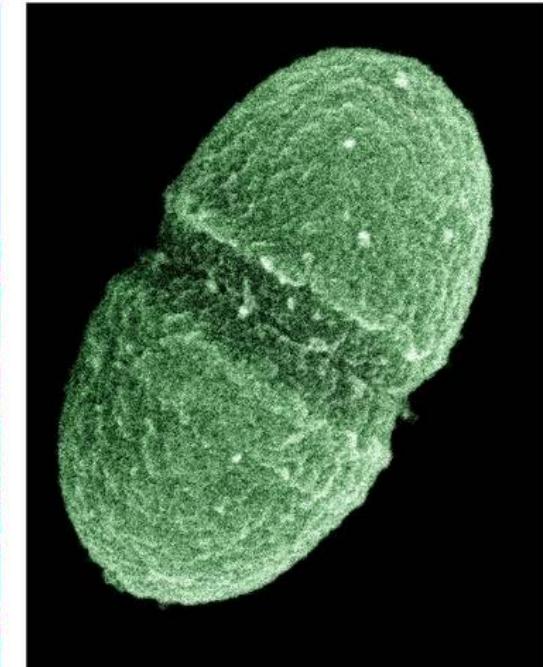
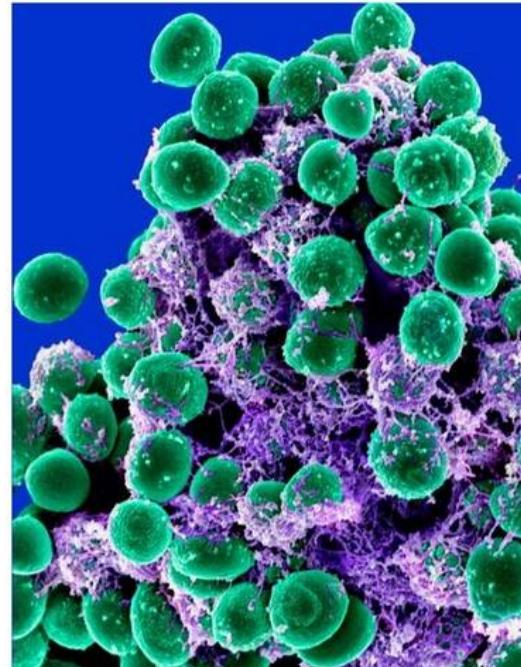
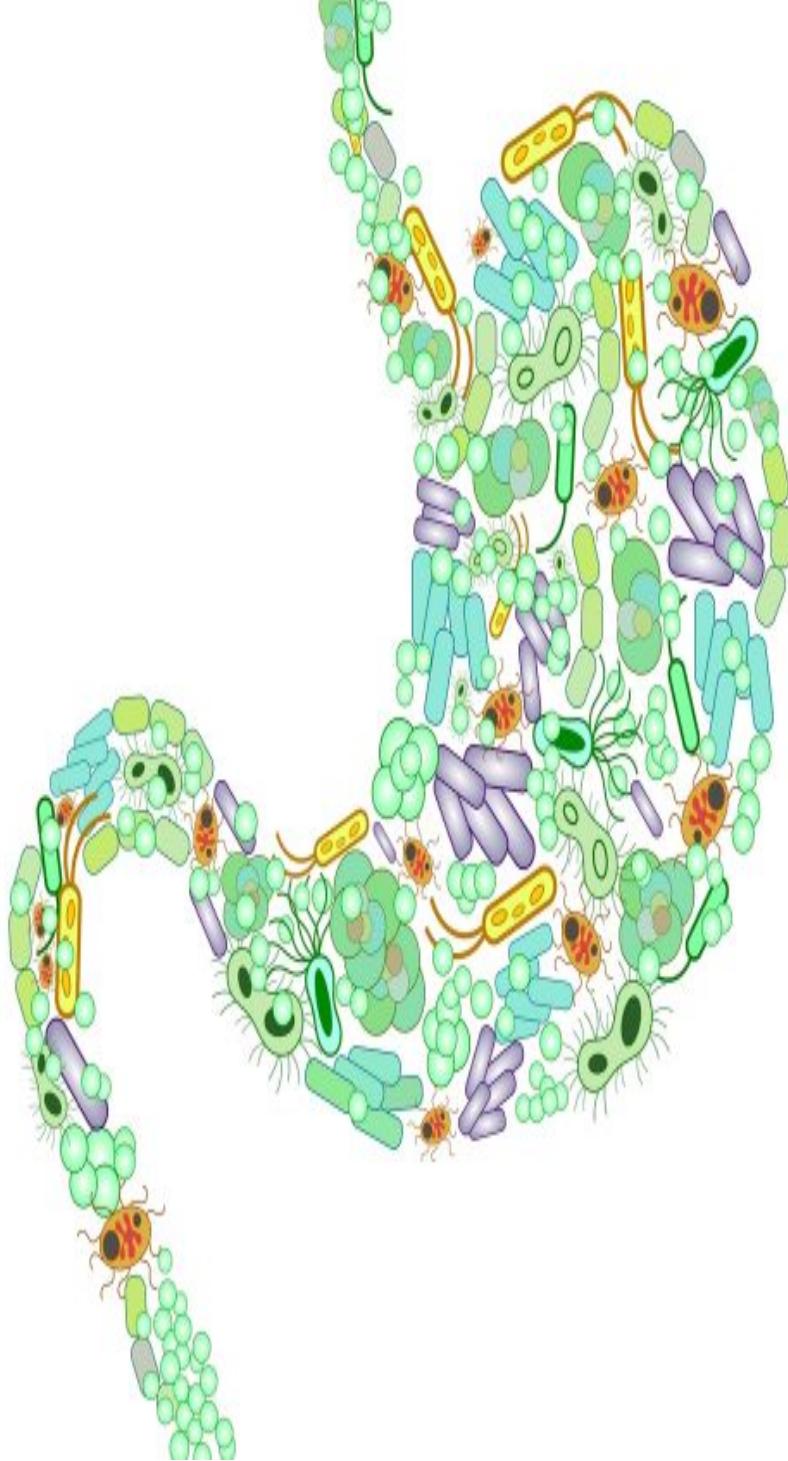
G18: G17: data...

G17: data...









Phenotype

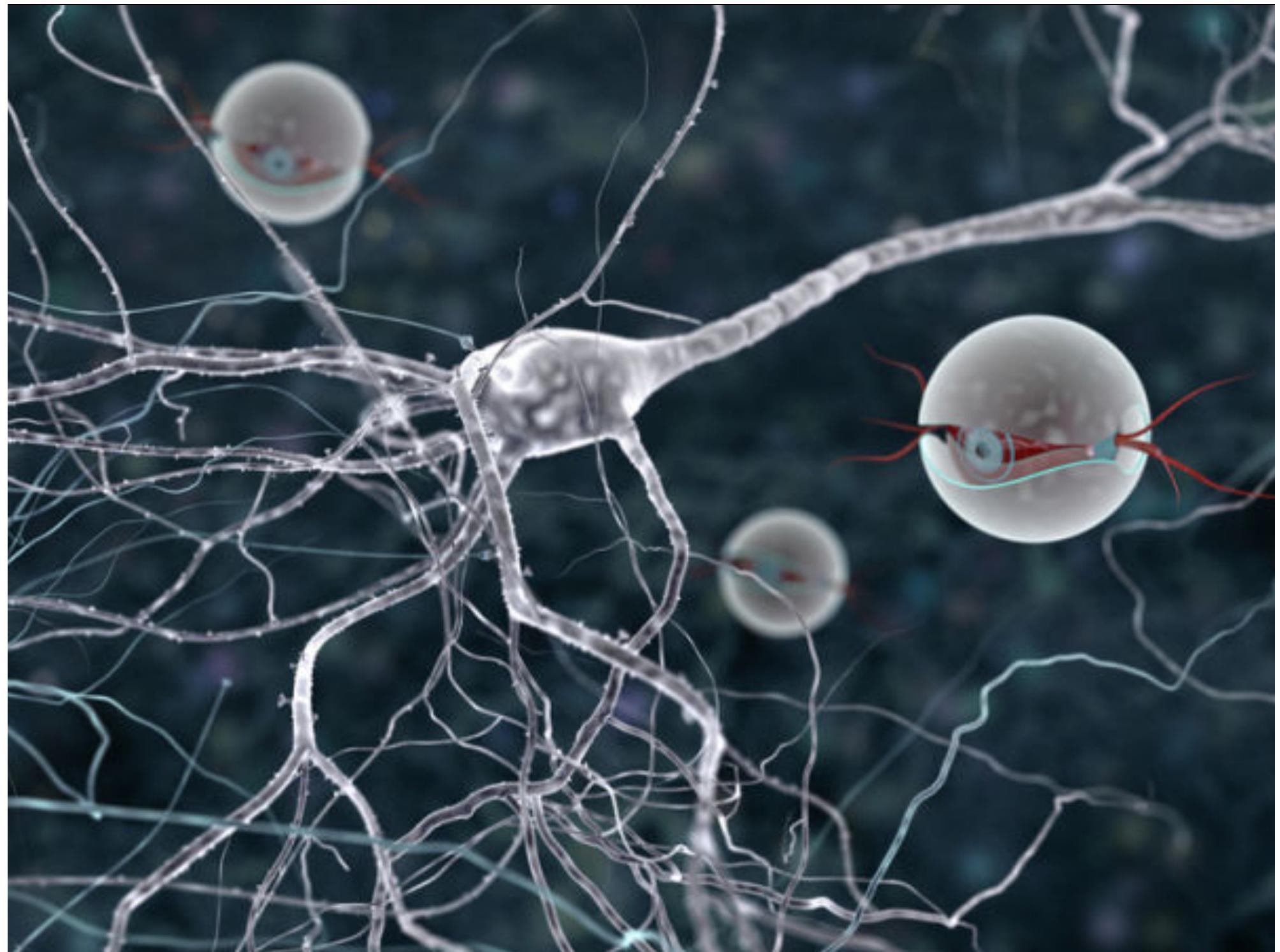
Genome

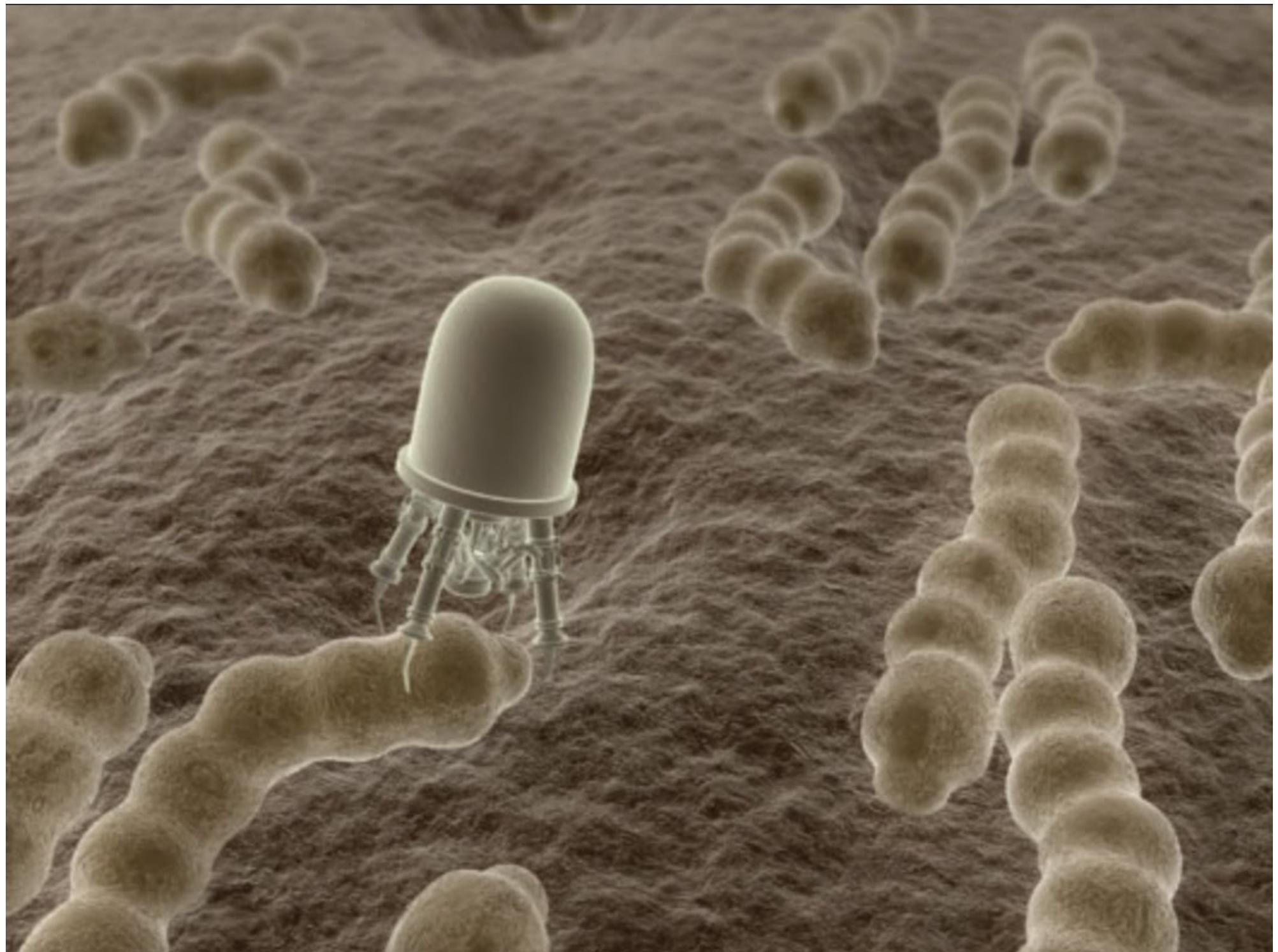
Microbiome

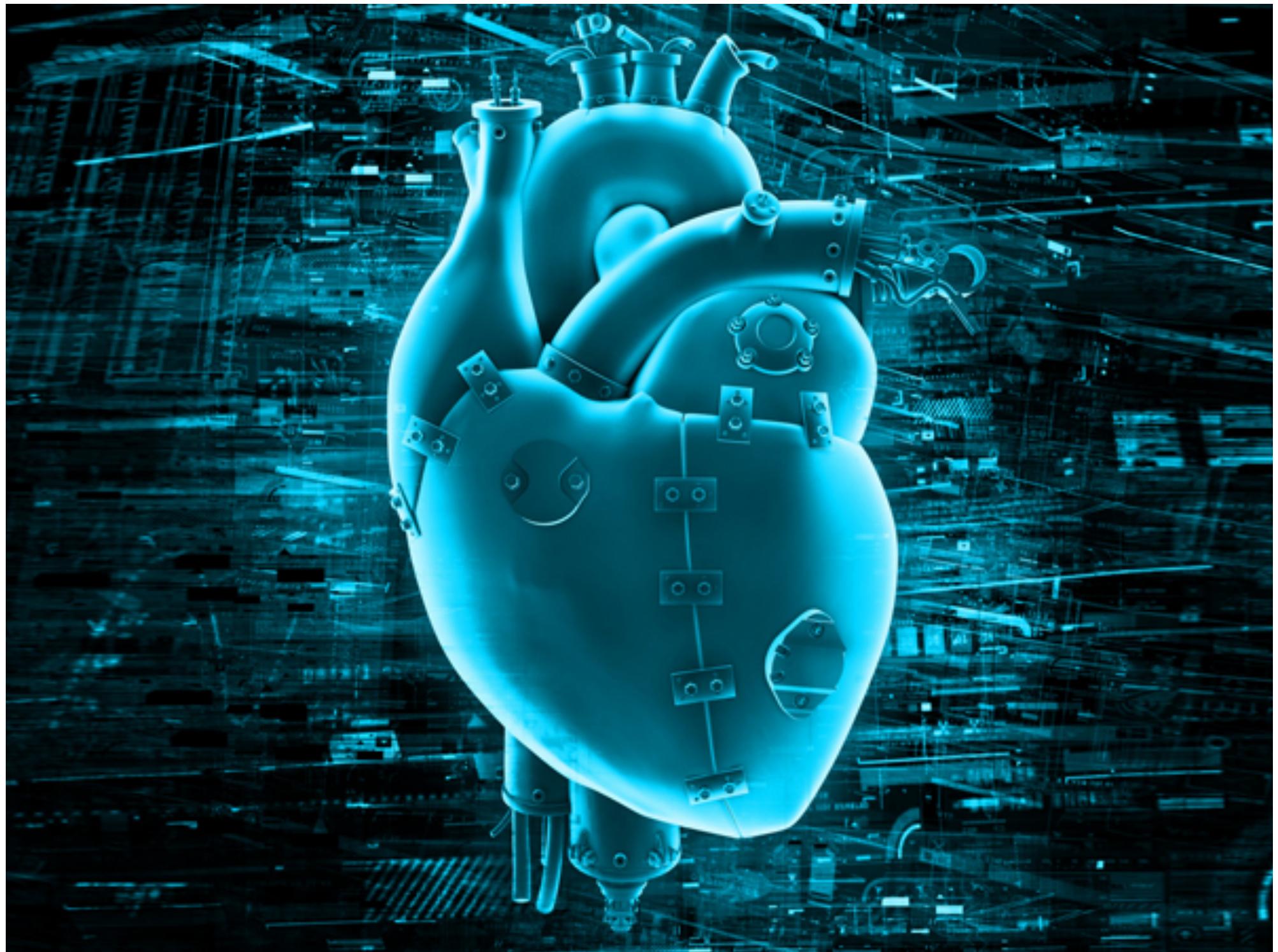
Epigenetics





















Thank You!

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Children's

Hospital
San Diego

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@RadyCIO 

Appendix: On one page

Systems Medicine:

1. Phenotype
2. Genome
3. Epigenetics
4. Microbiome

What's Next?

1. Tsunami of sensor data (IoT)
2. Social Media
3. Artificial intelligence (AI)
4. Cyber security
5. BlockChain
6. Microbiome
7. Gene editing
8. Gene therapy
9. Nanotechnology
10. Robots