

# Integrated Diagnostics

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**SECTRA**

Lets start by asking the contemporary "Oracle"

Me: Why is integrated diagnostics important in cancer care?

ChatGPT: Integrated diagnostics is important in cancer care because it allows for a more comprehensive and accurate understanding of a patient's condition, which can lead to more effective and personalized treatment plans.

Integrated diagnostics involves the use of multiple types of tests and technologies to gather as much information as possible about a patient's cancer. This can include imaging, biopsy, genomics..., and other types of data as needed.

...

Overall, integrated diagnostics is an important part of cancer care because it helps to ensure that patients receive the most appropriate and effective treatment possible, tailored to their specific needs and circumstances.

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ChatGPT: Integrated diagnostics is important in cancer care because it allows for a more comprehensive and accurate understanding of a patient's condition, which can lead to more effective and personalized treatment plans.

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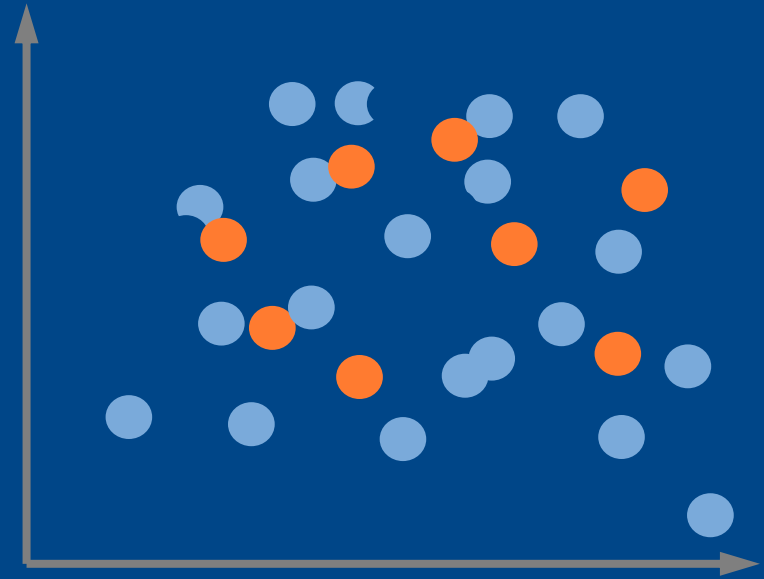
...

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# The mathematical foundation

Intuition gives, and decision theory confirms:

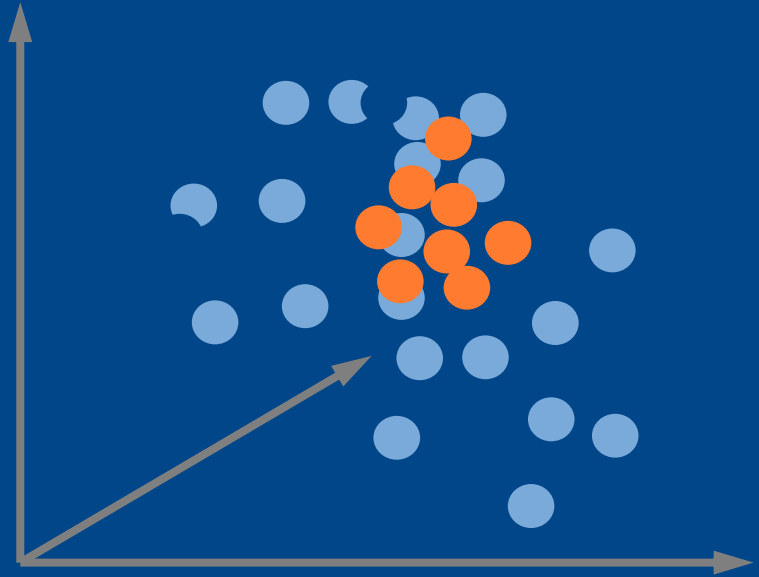
All available data should be used simultaneously at the time of a decision.



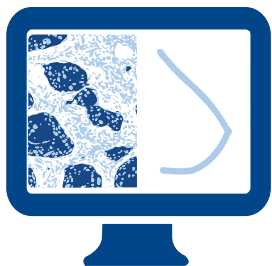
# The mathematical foundation

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# Demands on IT systems



All relevant data available at one place, at the same time

Deep integration with AI

Uniform user interfaces

Unified tumor boards

Early discordance handling



EMR



## Status at Sectra, March 2023

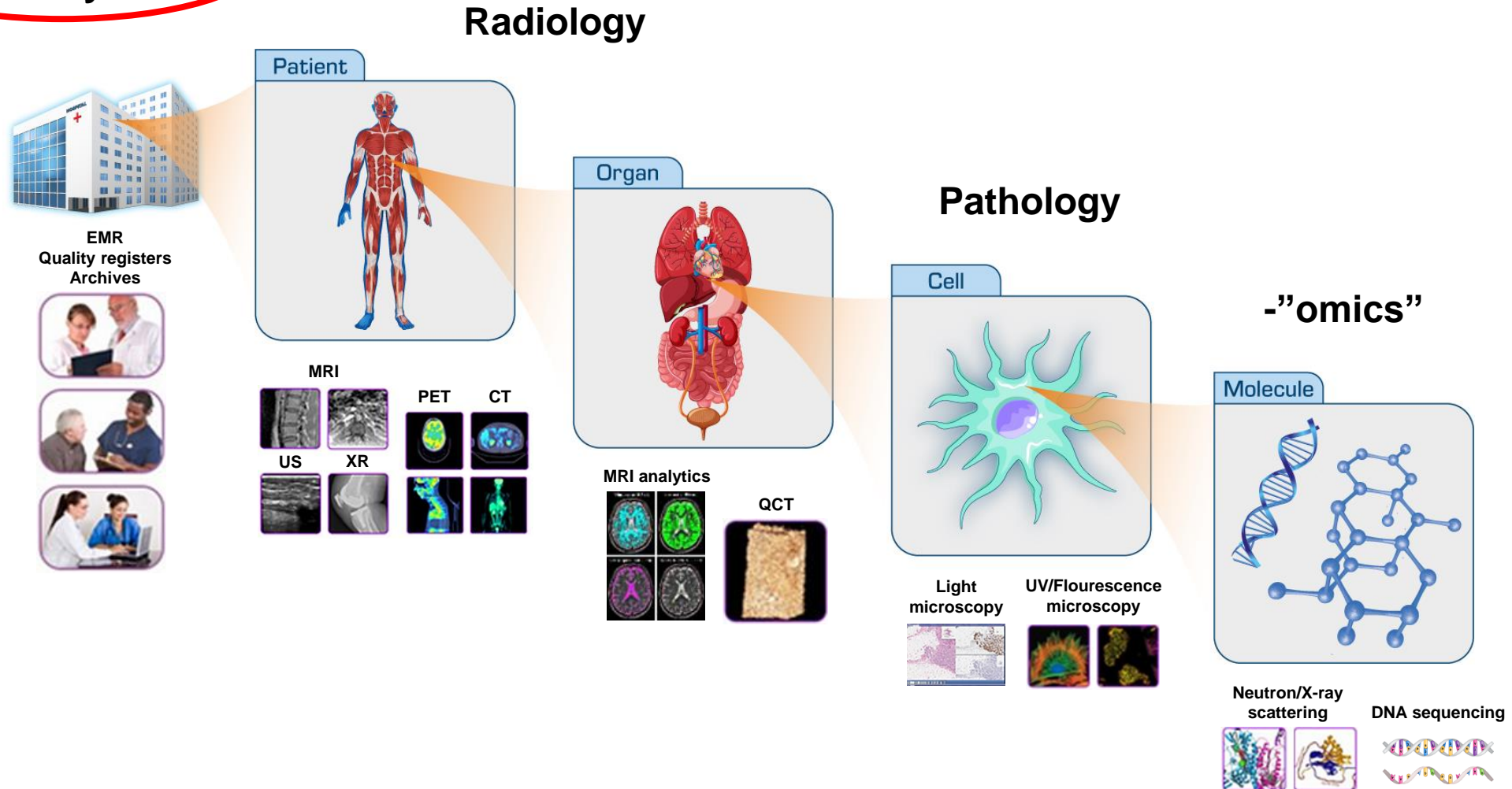
- » Radiology, Pathology and AI in one single IT system
- » EMR data simultaneously available by close integration to EMR (right now only EPIC).
- » Structured reports e.g. including lesion tracking sent back to EPIC.
- » Work in progress to include Genomics (cooperation with Penn Medicine)





# Integrated diagnostics; Phenotype to Genotype

Population health,  
Probability data



# Integrated diagnostics facilitates Feedback loops

The largest improvement opportunity in health care?

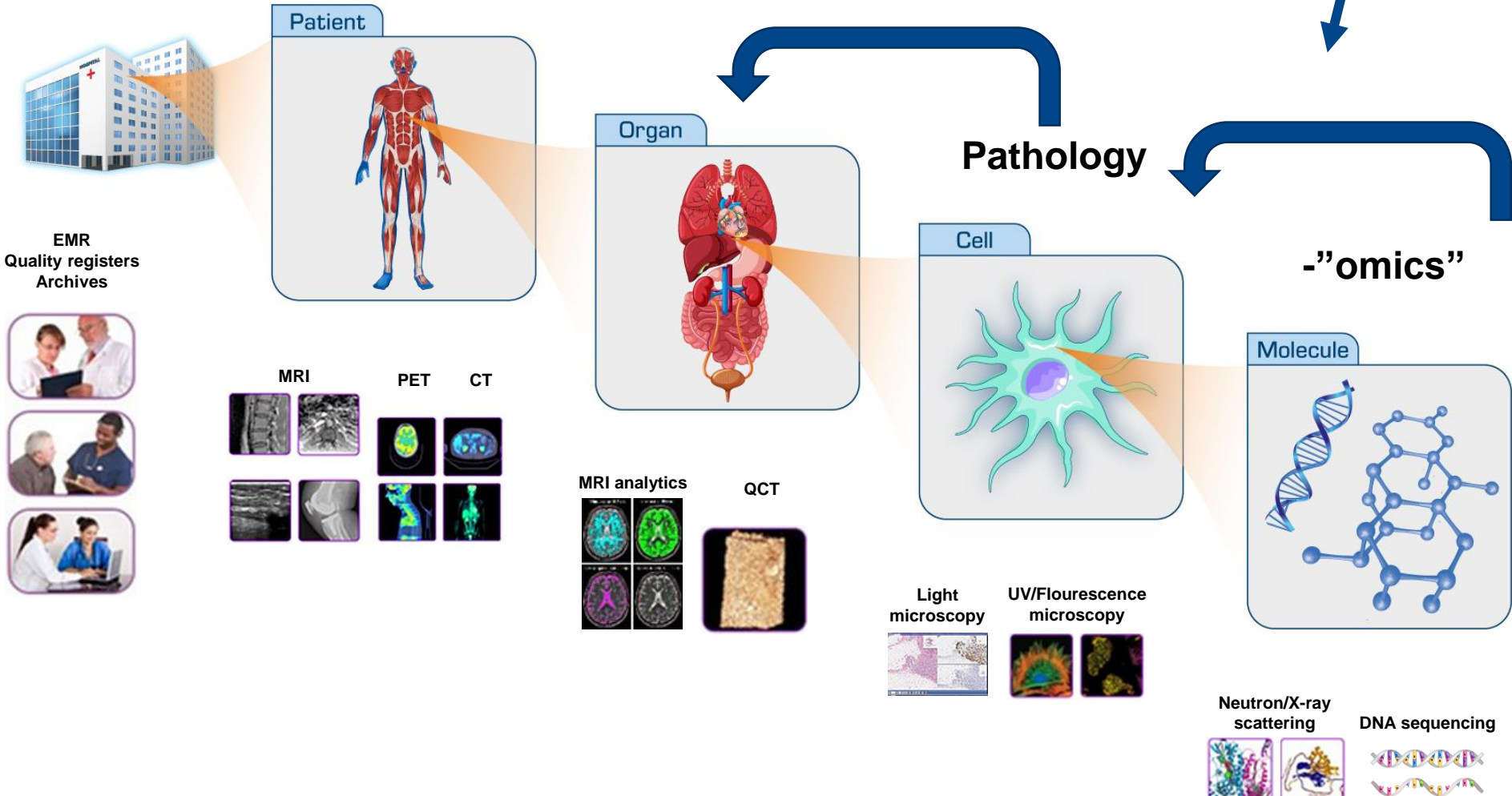
Population health,  
Probability data

EMR (Final  
outcome)

Radiology

Pathology

-”omics”



# The future "Diagnosticians"

Sam Gambhir, Stanford University:

*"Today's Radiologists and Pathologists will be replaced by Diagnosticians + AI"*



# Reimbursement?

- » To really fly, modified reimbursement would help.
- » I.e. reimbursing a diagnosis, not specific procedures
- » But this will take time, in the interim we need to concentrate on patient outcomes and curing cancer!

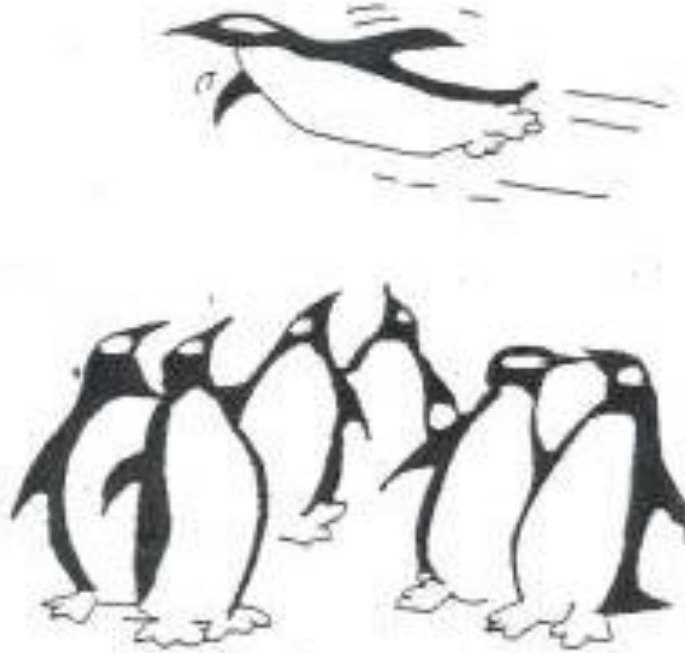




# The vision

- » Faster and better diagnosis
- » Improved patient care
- » Built in feedback loops, improving quality of healthcare
- » At lower cost and less complexity





- "We have told him it was impossible,  
but he wouldn't listen"



Thank you

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*Knowledge and passion*