



Integrated Diagnostics @ Erasmus MC

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INTERNATIONAL
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FOR STRATEGIC
STUDIES IN
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COMPUTER APPLICATIONS

Integrated diagnostics: proceedings from the 9th biennial symposium of the International Society for Strategic Studies in Radiology

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INTEGRATED
DIAGNOSTICS
AND MASSIVE
COMPUTING
CONVERGENCE
OF MEDICAL
IMAGING,
LABORATORY
TESTS AND
IT-SOLUTIONS



9th Biennial Symposium
of the International
Society for Strategic
Studies in Radiology

IS³R
2011

Dubrovnik/Croatia
August 25–27, 2011
Scientific Program

Integrated diagnostics refers to the use of multiple diagnostic tests, tools and technologies to diagnose a medical condition. It involves the integration of patient data, medical imaging, lab results and other diagnostic information to arrive at a comprehensive and accurate diagnosis. The goal of integrated diagnostics is to improve the speed, accuracy, and efficiency of the diagnostic process, leading to better patient outcomes.

Chat GPT
OpenAI



Culture eats strategy for breakfast

-Peter Drucker

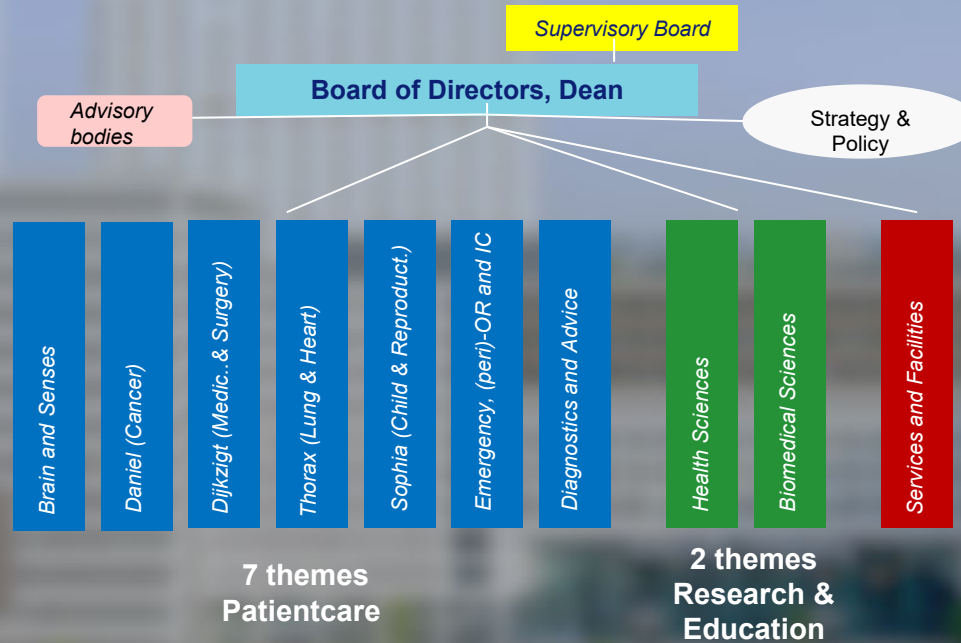
Erasmus MC



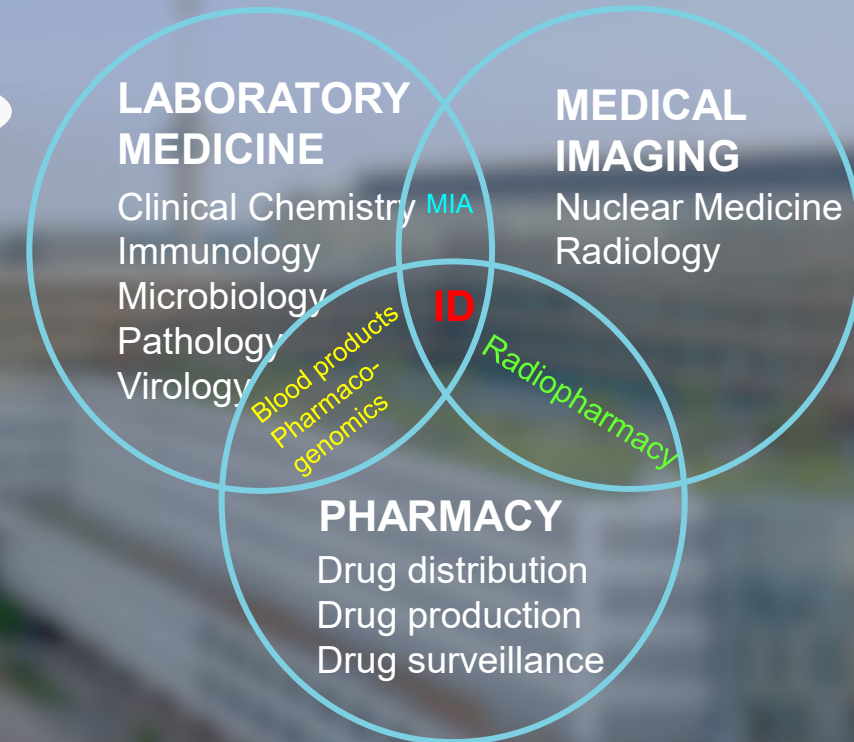
Erasmus MC in Numbers

Beds	1232
Outpatients	670000
Admission	31000
Employees	16500
Med. students	4500
PhD students	1100
Publications	5500
Citation score	2.05
Turnover	€ 2.2 x 10 ⁹

Organization Structure

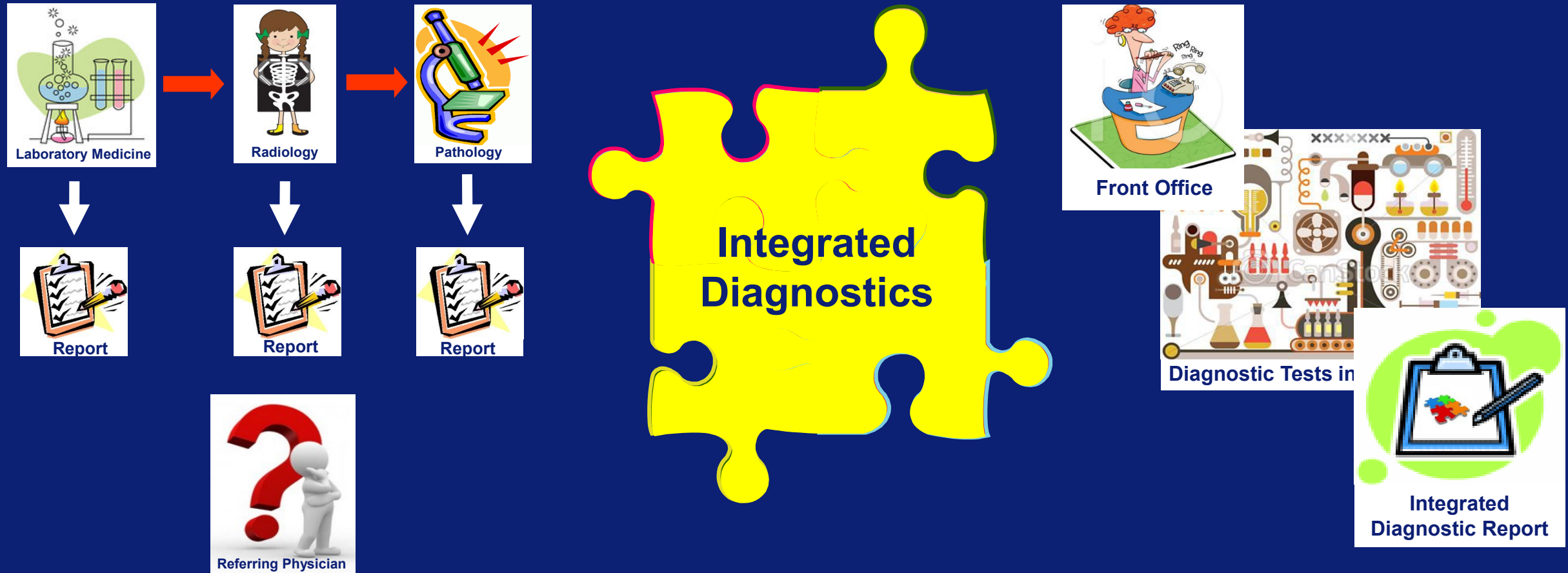


Theme Diagnostics & Advice



Integrated Diagnostics

Vision: Moving from a sequential to an integrated approach



Multidisciplinary Teams and Service Lines



BREAKING DOWN SILOS IN HEALTHCARE



LOCKED IN WITH IT VENDORS

Survey for Implementation of ID



What are the major barriers for integration?

Hospital structures
& management



***We prefer separate departments
(divide and rule) but if it is
cheaper, go ahead!***

Lack of IT solutions



***Define the workflow and
then we will think about
solutions.***

Pathologists



***Digitization will
turn our work
from art into a
commodity.***

Radiologists



***Why bother
about pathology?
We have enough
work.***

Referring
physicians

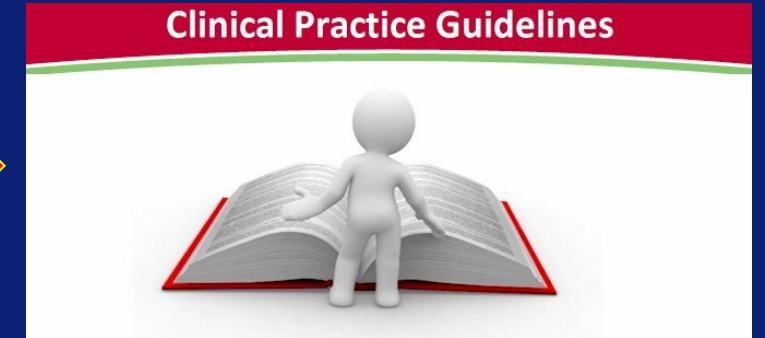
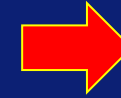


***We know it better
and we decide what
we order.
We ask, you do!***

1st Attempt to Implement ID @ EMC

- Benefit in defined disease entities:

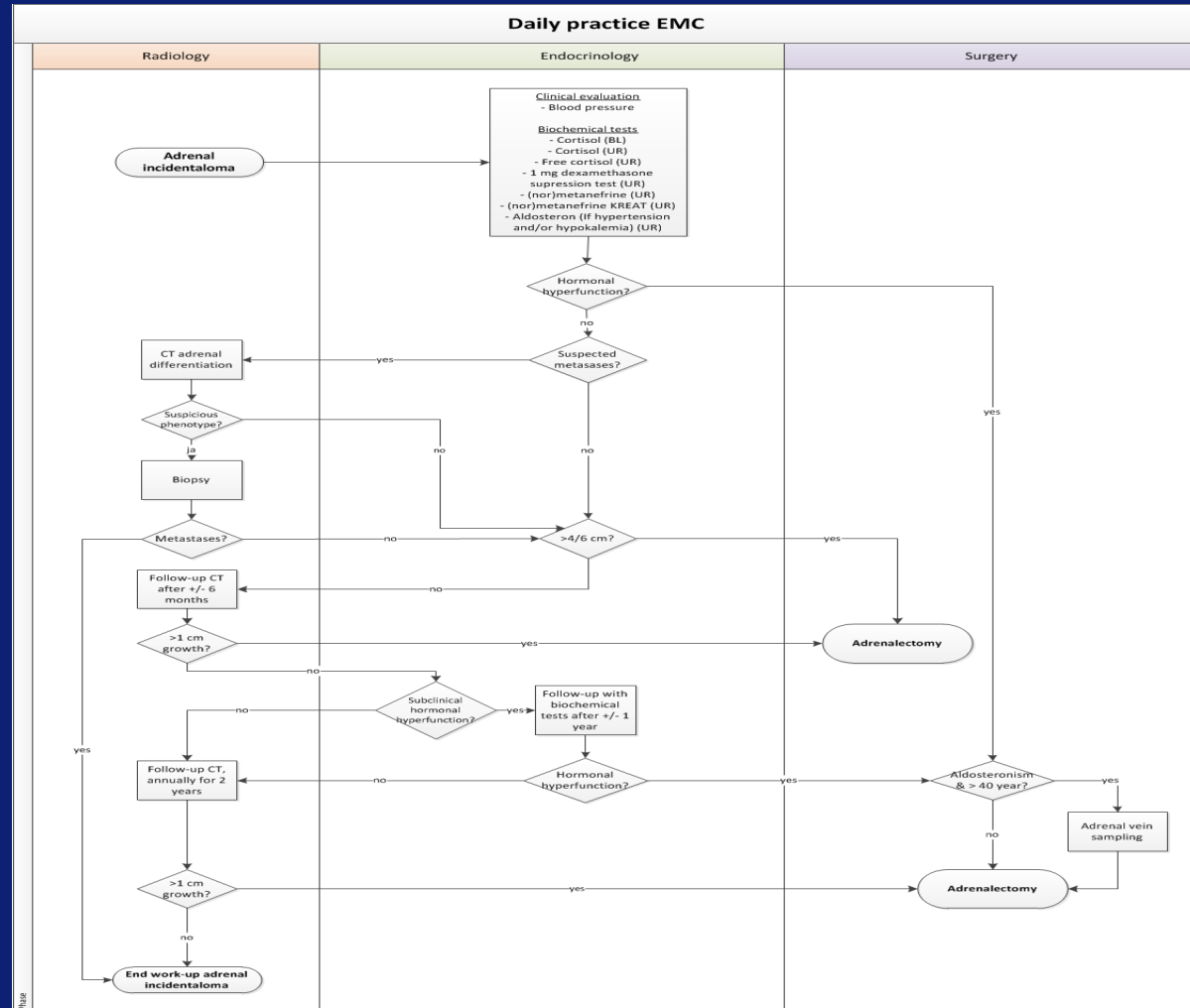
- Glomerulonephritis
- Interstitial lung disease
- Liver transplant dysfunction



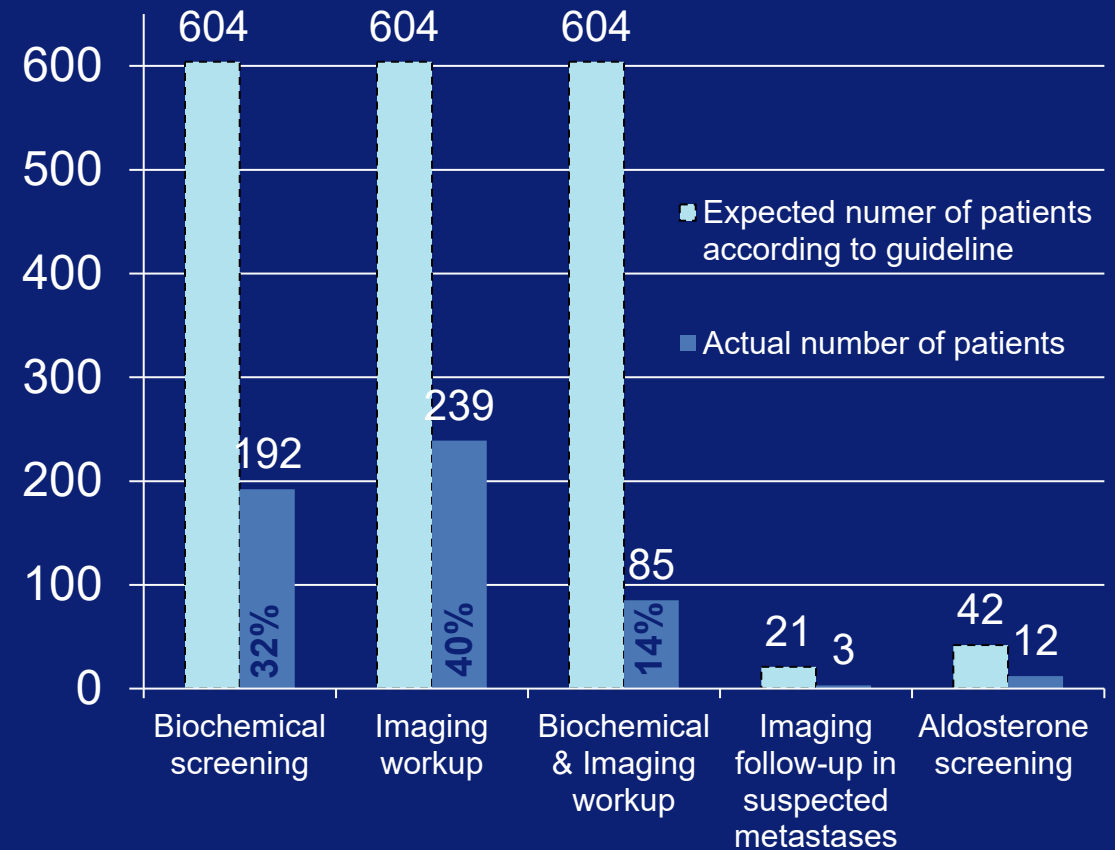
- Is the diagnostic work-up following accepted guidelines?

- Adrenal incidentaloma
- Suspected CAD
- Metastatic disease of unknown primary

Adrenal Incidentaloma: Recommended Practice vs. Reality @ Erasmus MC (604 cases)



Erasmus MC Guidelines



2nd Attempt: ID Workflow Pilot



Radiologist



Pathologist



Oncologist



Surgeon



Radiation
Therapist

Multidisciplinary
Tumor
Board

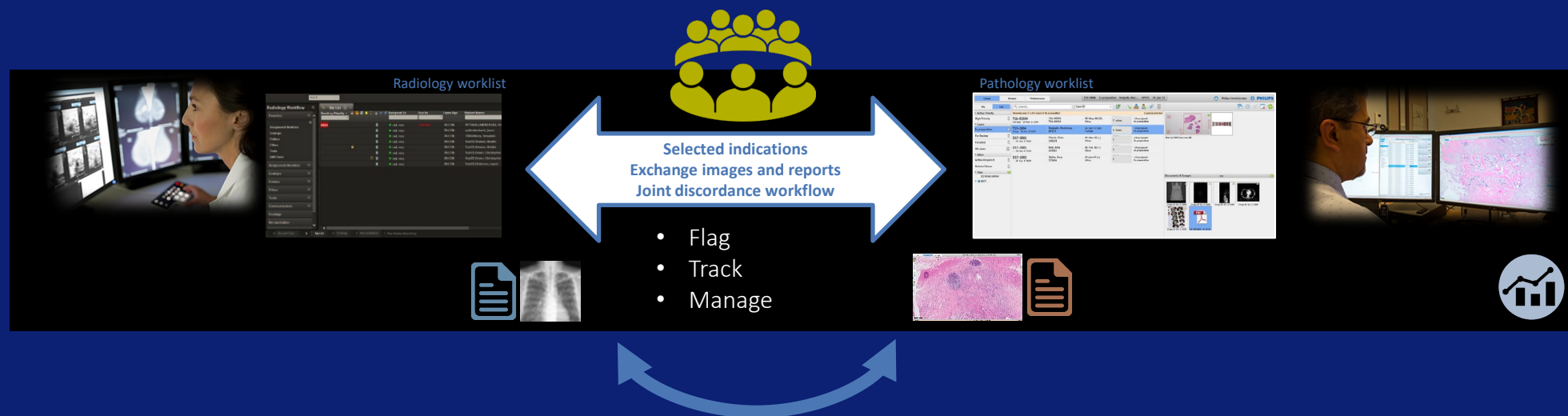
Vision

To improve the quality of care for the patients by shortening the lead times in the diagnostic process

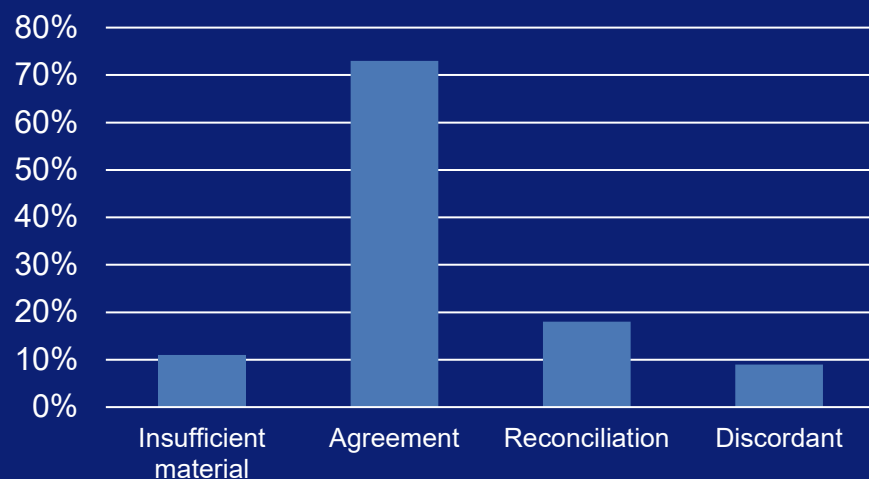
Goal with pilot

- Allow the radiologist to make more decisions about additional exams before the tumor board
- Solve discrepancies before tumor board
- Only present cases that are fully investigated on tumor boards
- Make the tumor board meetings more efficient

Managing Discordant Results: Rad-Path

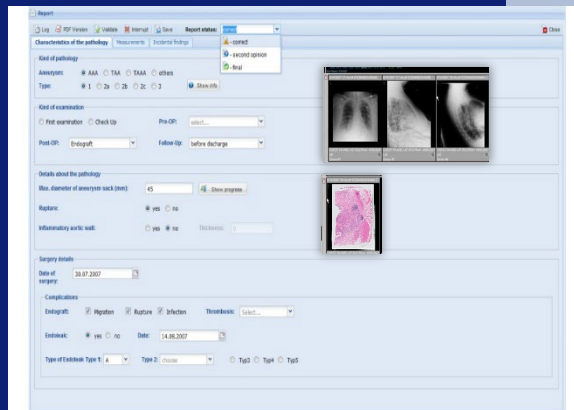


Suspected lung cancer patients (89 consecutive cases)



Patient	Radiology	Pathology	Final diagnosis
1.	Uncertain	Malignant	Lung metastasis of myxofibrosarcoma
2.	Uncertain	Malignant	Non-small cell carcinoma
3.	Uncertain	Malignant	Lung metastasis of papillary renal cell carcinoma
4.	Malignant	Benign	Uncertain (Nodule, over three years stable)
5.	Malignant	Benign	Sarcoid
6.	Malignant	Benign	Sarcoid
7.	Malignant	Benign	Disseminated lung carcinoma

Critical Ingredients for Success



Referring Physician

- Clinical question

Integrated results

- Single Order
- Multiple sequential orders

Diagnostic sequence

Pathology

- test
- test

Virology

- test
- test

Micro-biology

- test
- test

Imaging

- test
- test

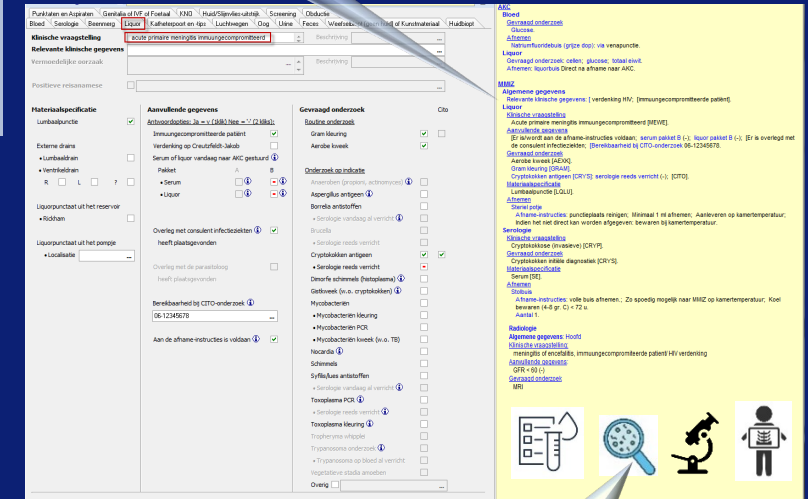
Chemistry

- test
- test



Order management
Decision support
Order sets

Generating order sets

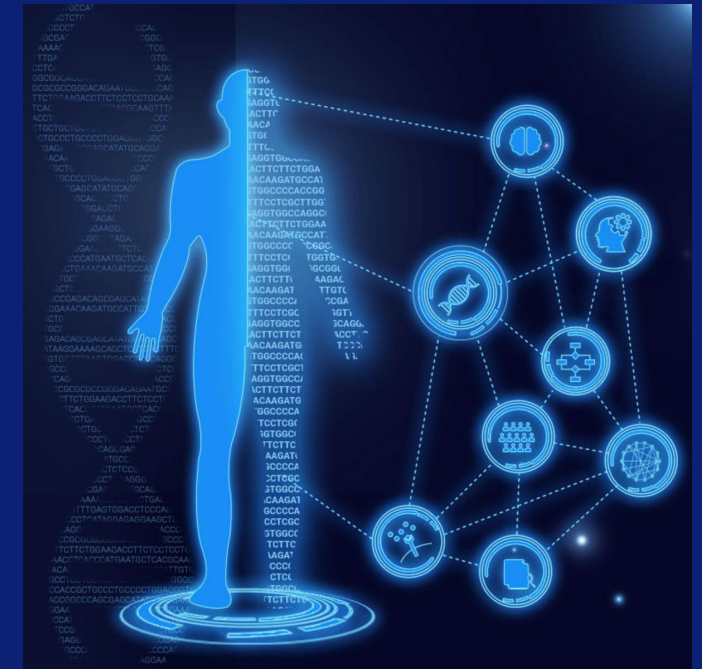
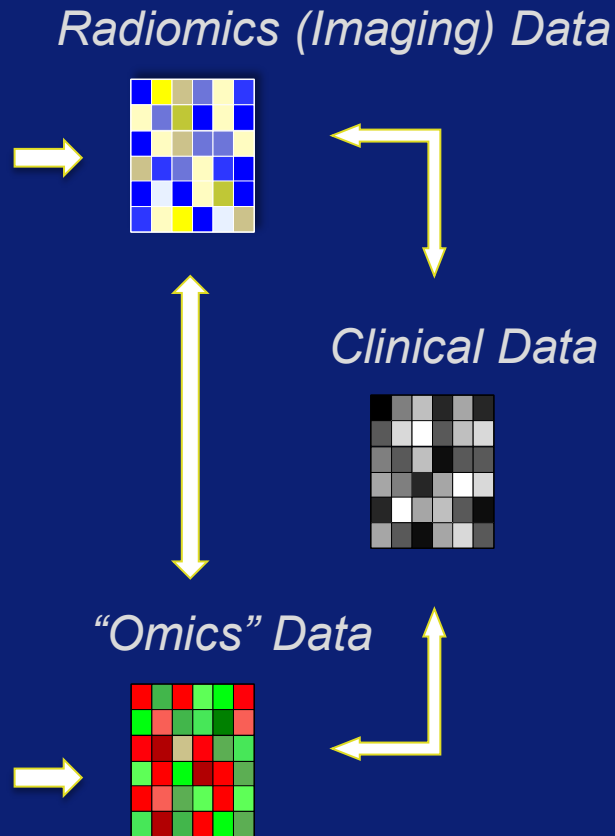
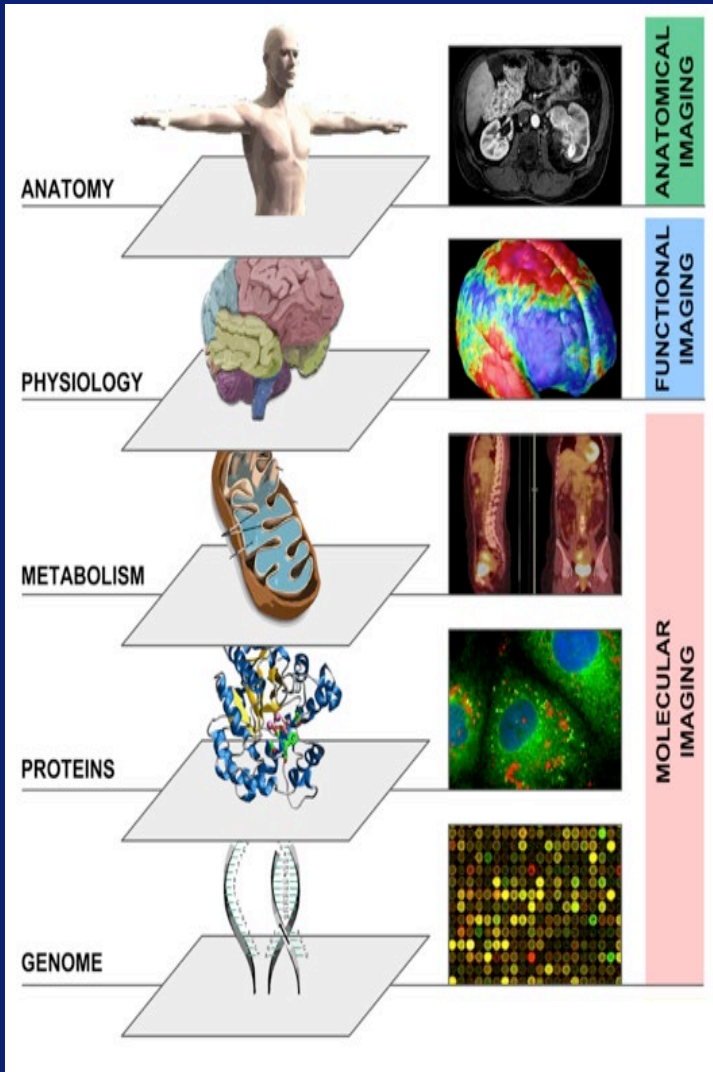


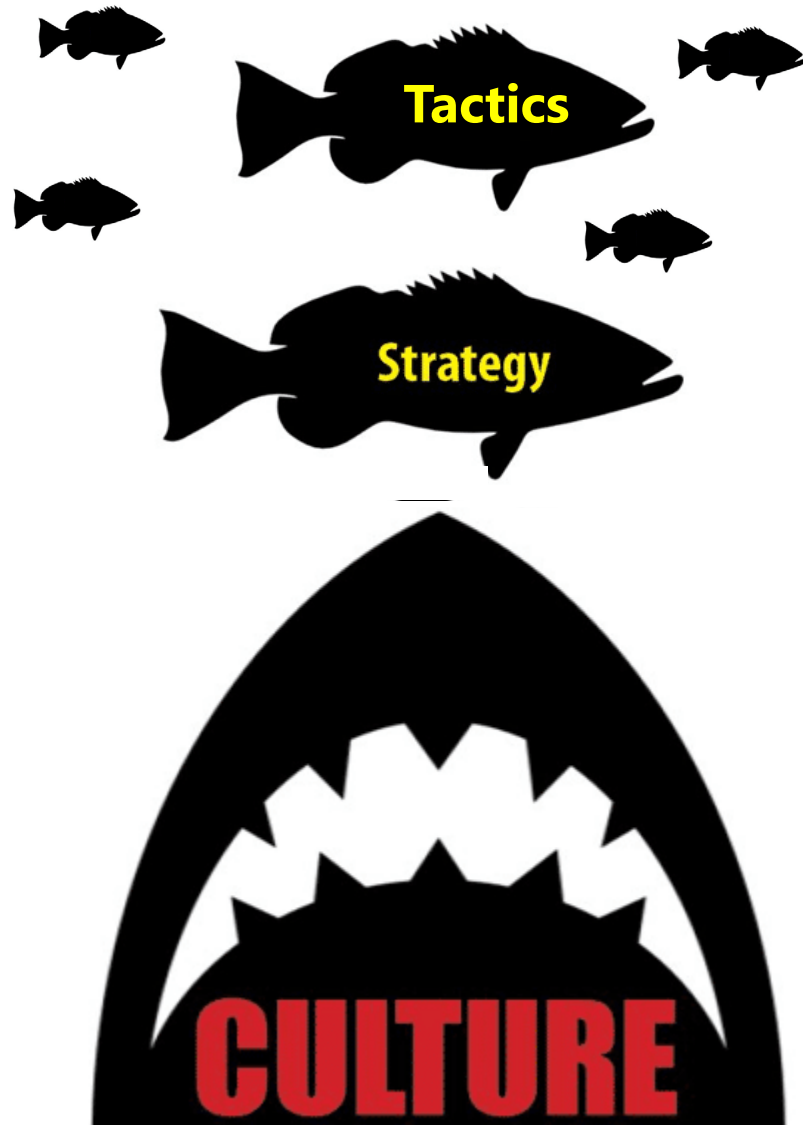
All material types relevant to the question are sent to the diagnostic disciplines involved



Slow progress
is better than no progress...

Integrated Big Data Analytics





**Culture eats
strategy
for breakfast,
tactics for lunch,
and everything
else for dinner**

Erasmus MC
University Medical Center Rotterdam

Thank you

Erasmus