The basics behind clinical research

Anastassia Negrouk
Head of International Policy Office
(I have no conflicts of interest)

European Organisation for Research and Treatment of Cancer, Brussels

The patient and the physician

- *What are possible treatment options?*
- *What are my chances to live a long life?*
- *Will I live with or without treatment?*
- *What are the side effects of these treatments?*
- *…*

→ ***Clinical research***

Expert opinion

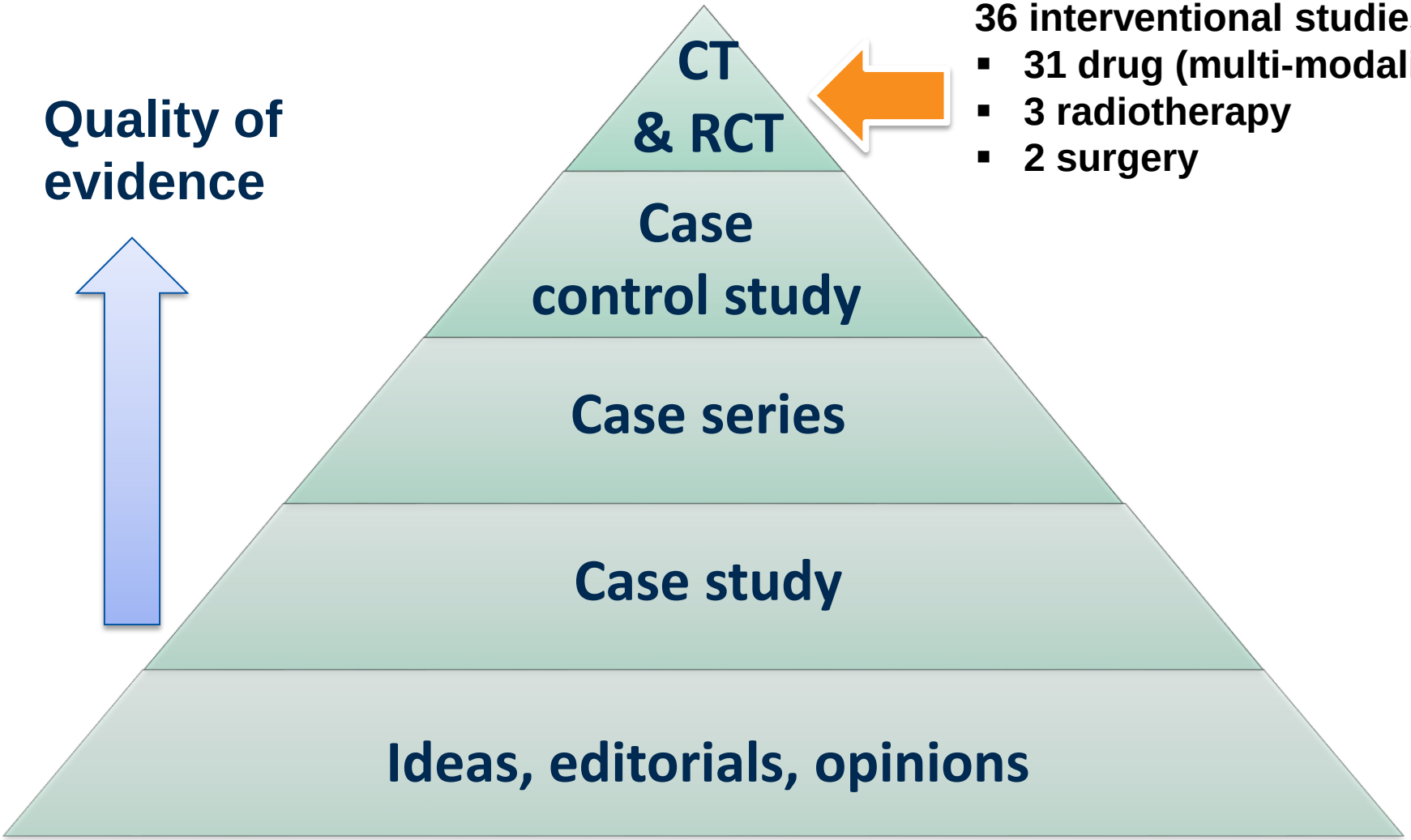
WonderPill®

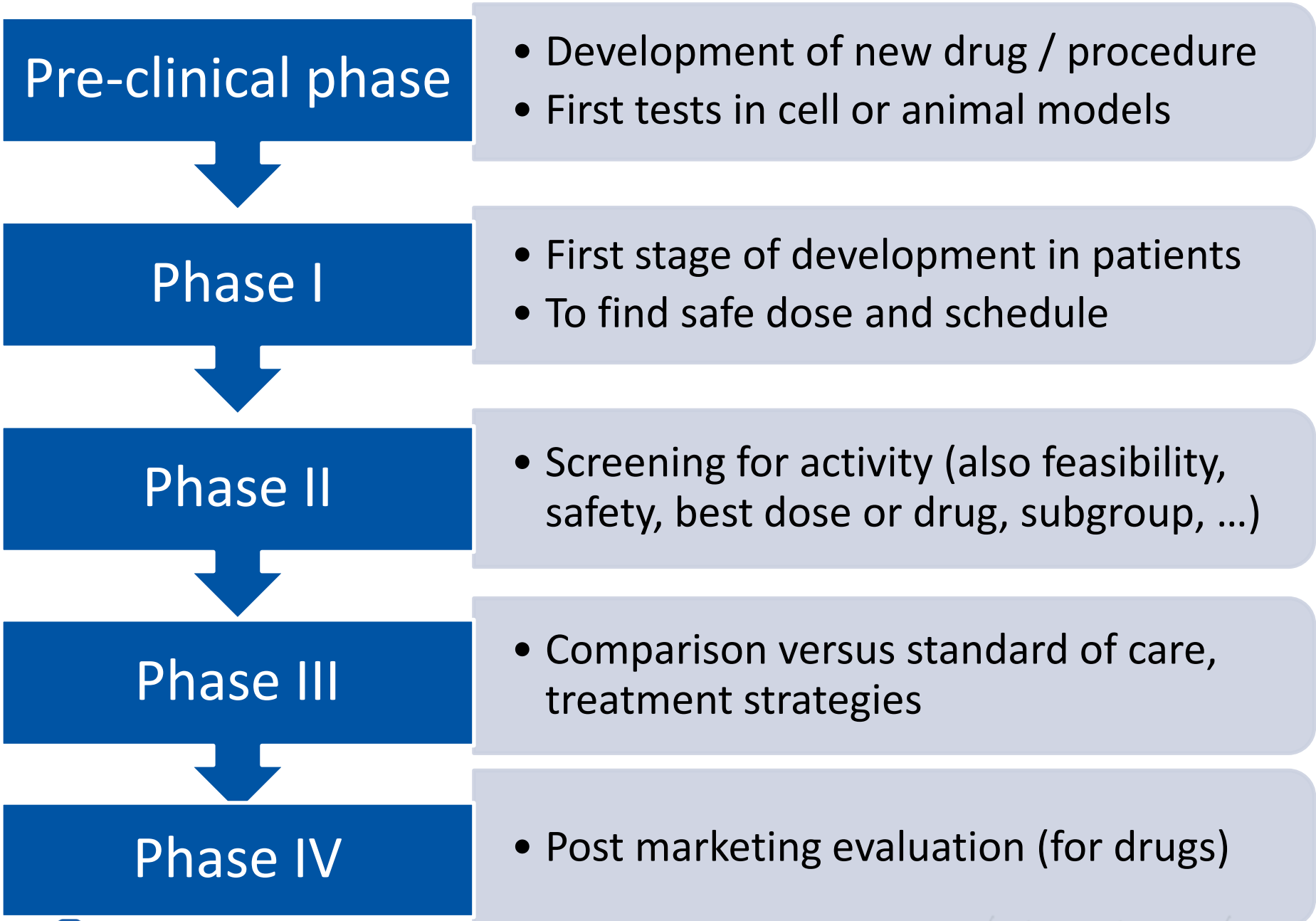
- Experience
- Beliefs
- Intuition
- Deduction

But …

Evidence based medicine

EORTC:
36 interventional studies
- **31 drug (multi-modality)**
- **3 radiotherapy**
- **2 surgery**




Pre-clinical phase
• Development of new drug / procedure
• First tests in cell or animal models
Phase I
• First stage of development in patients
• To find safe dose and schedule
Phase II
• Screening for activity (also feasibility, safety, best dose or drug, subgroup, …)
Phase III
• Comparison versus standard of care, treatment strategies
Phase IV
• Post marketing evaluation (for drugs)

The clinical treatment development process

- **Prospective** research
- **Early** stages of development focus on small **series** of patients
  - Phase I:
    - 15-30 patients receive different doses to “best” dose for a drug with the maximum activity and with an acceptable toxicity
  - Phase II:
    - 30-100 patients
    - Large enough to detect activity of treatment but not large enough to change clinical practice
    - “Activity” is determined by comparing to a historical control or adding a (randomized) control arm

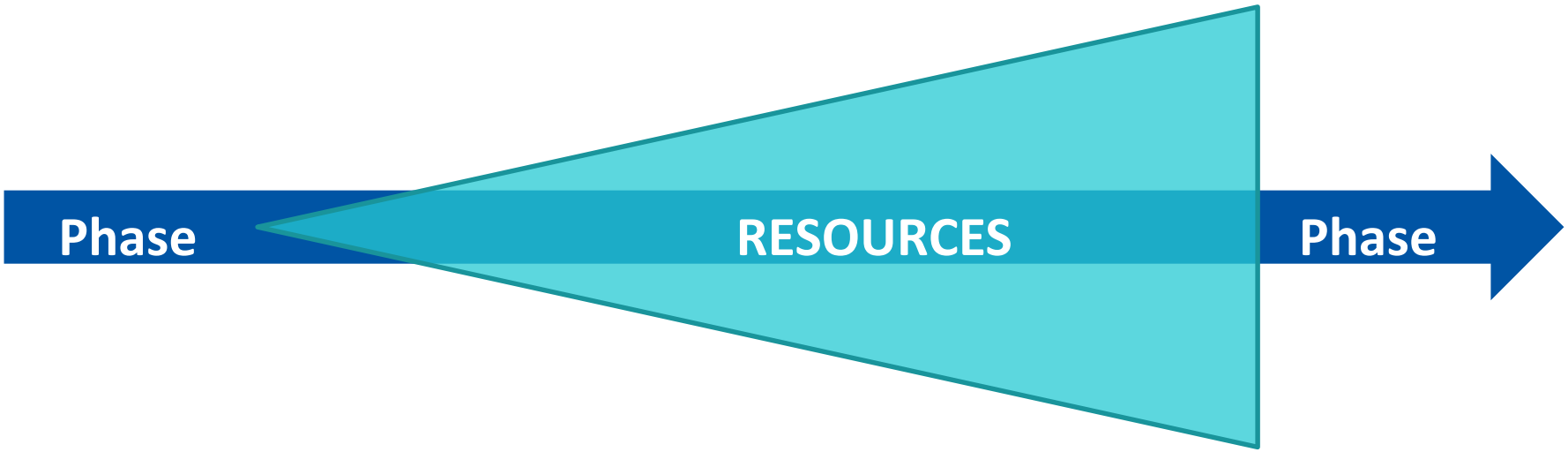
→ **Exploratory studies**

The clinical treatment development process

- **Later** stages of development focus on larger series of patients
  - Phase III:
    - Always comparative:
      - To the best currently accepted therapy
      - To the natural evolution of the disease
    - Always randomized
    - Sometimes blinded (see next talk)
    - Planned to reliably detect small to moderate but **meaningful** differences
      - Several 100s – 1000 patients

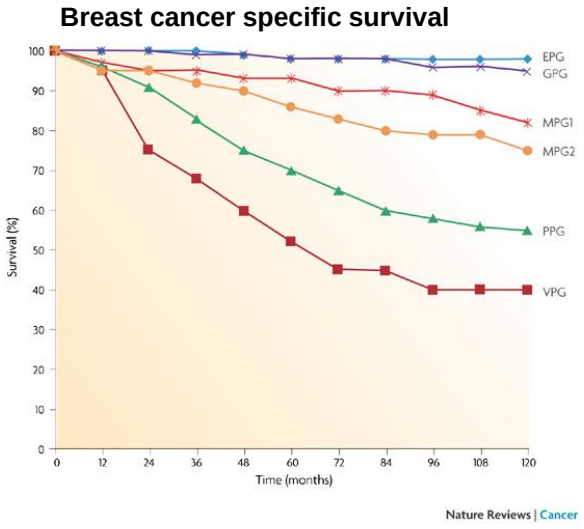
→ **Confirmatory studies**

Classical clinical research pathway



Coming back to the patient and the physician

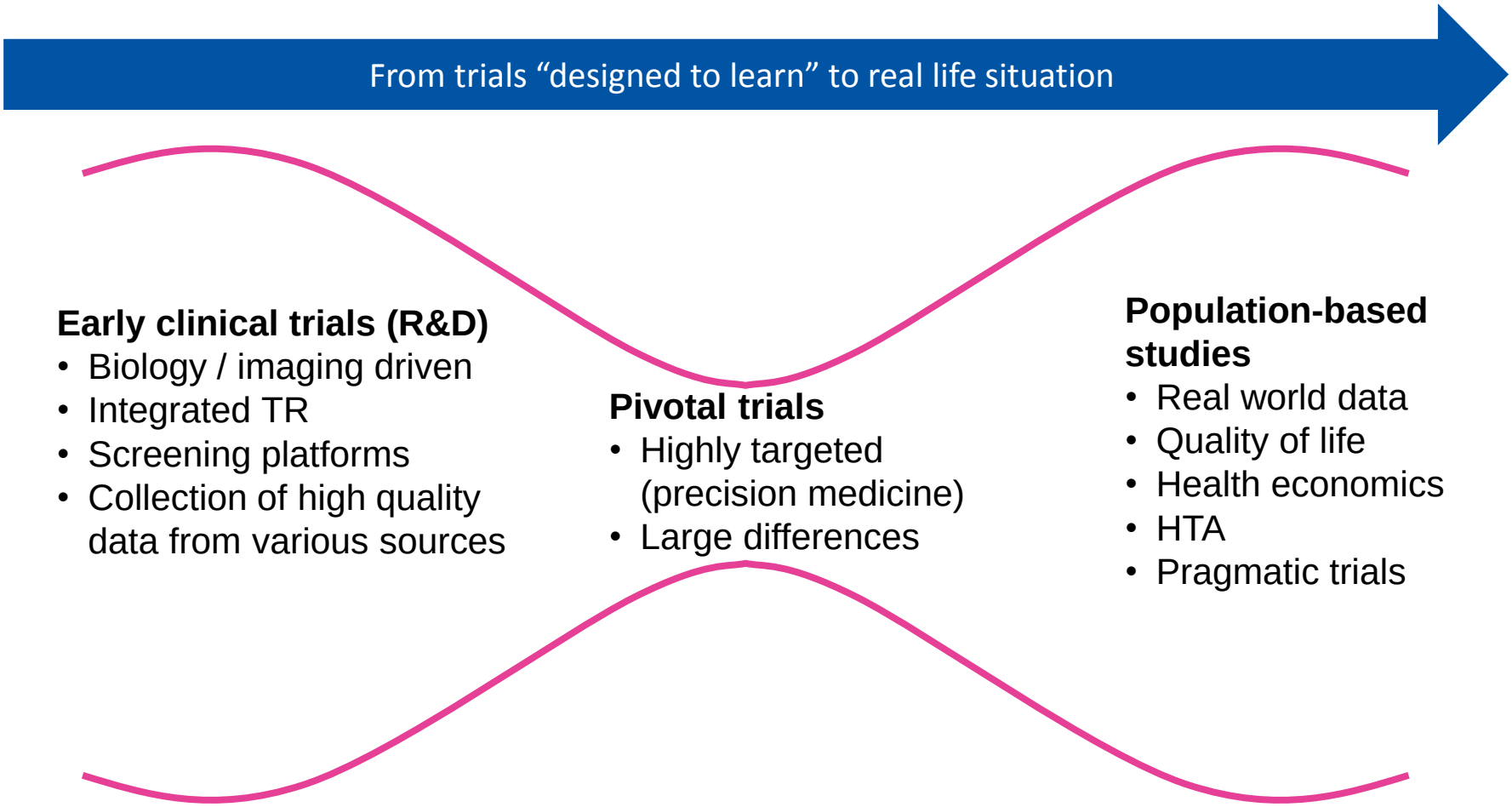
- *What are possible treatment options?*
- *For how long will I live, with or without treatment?*
- *What are the side effects of these treatments?*
- *…*



"The problem is you can't tell an individual patient where she is on the curve"

Paul Kalanithi
"How long have I got left?"
Opinion piece 24/01/2014
New York times
http://www.nytimes.com/2014/01/25/opinion/sunday/how-long-have-i-got-left.html

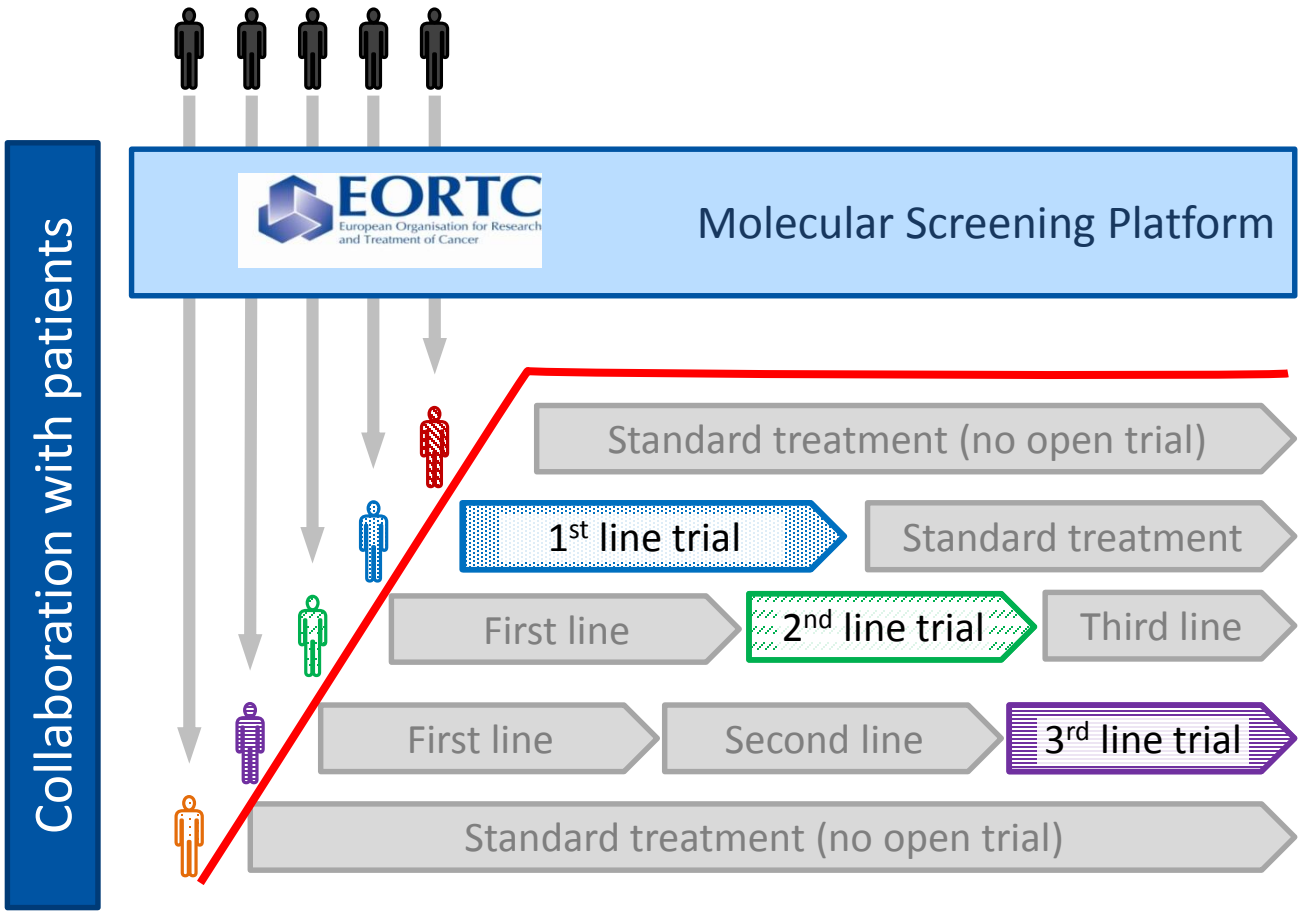
Changing clinical research pathway



Burock et al, Eur. J. Cancer 49:2777-2783, 2013

Roadmap for change: SPECTA

(Screening Patients for Efficient Clinical Trial Access)



Investment of academia

Partnerships

Thank you

Thanks to my stat colleague Saskia Litiere