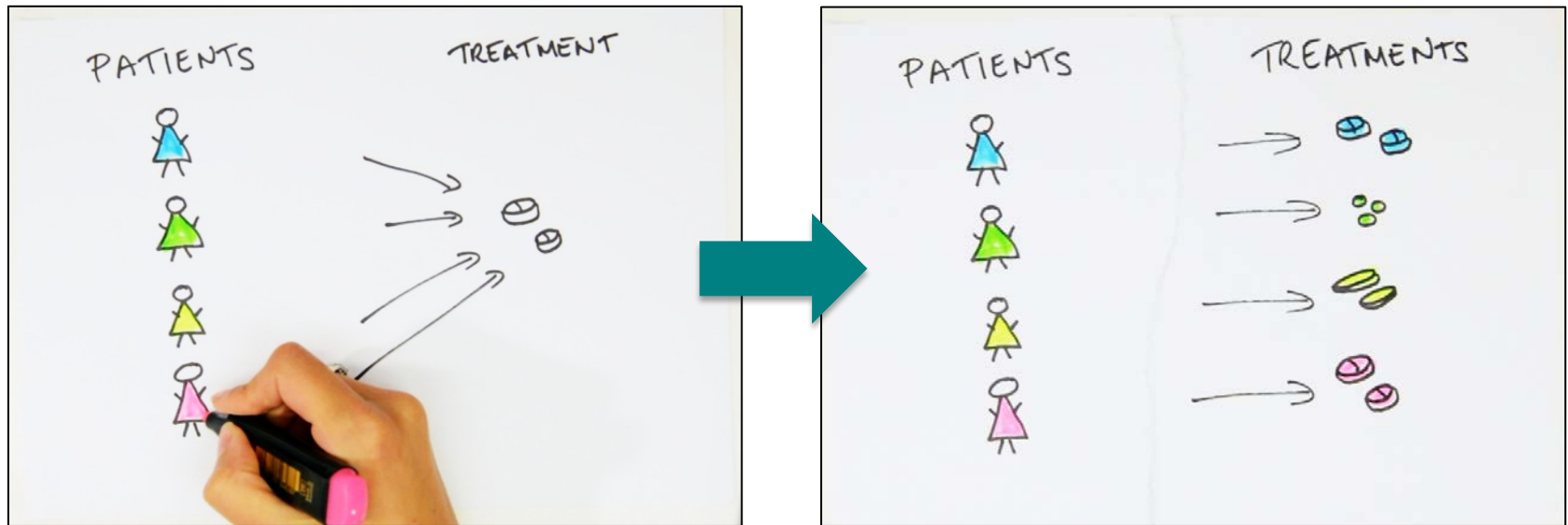


Creating patient centred models to change the way we treat ovarian cancer



Monique Topp

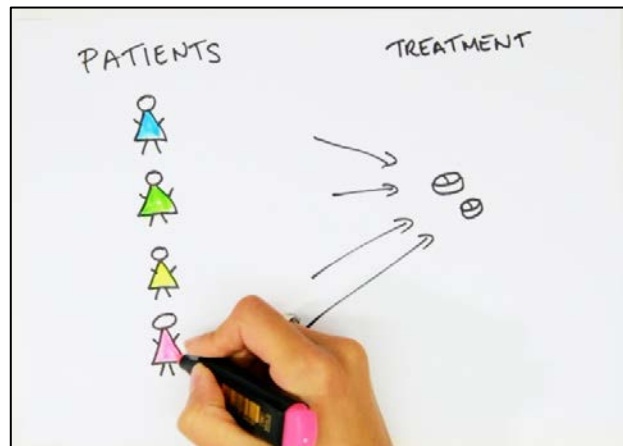
Ovarian cancer

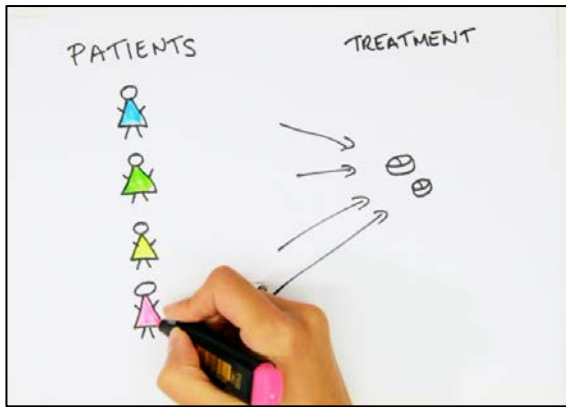


- Survival rate has not improved in 30 years
- Despite better understanding of cancer complexity

Why is this?Is it because we still treat as if

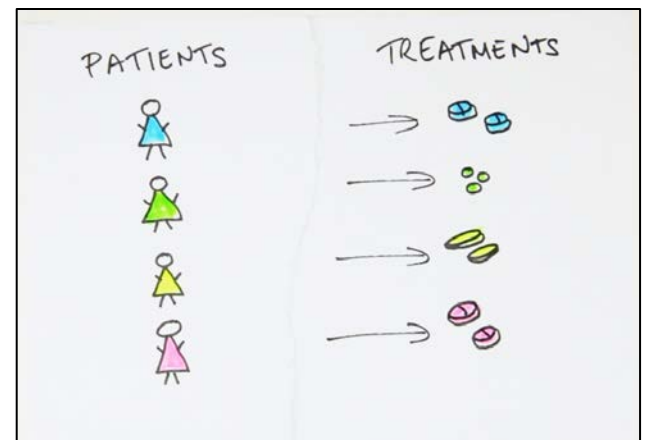
“one size fits all”



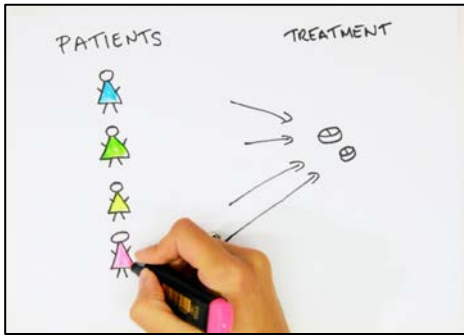


What would we need to improve survival rates?

- Tools to predict which treatment for which ovarian cancer
- Models to test these predictions



Patient Specific Cancer models



Each ovarian cancer:

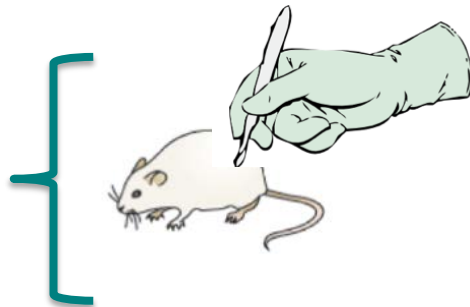
What it looks like?

What drives it? (genes)

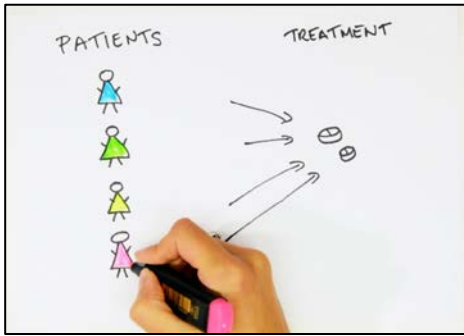
How it behaves?

DNA repair

Patient specific cancer model:



Patient Specific Cancer models



Each ovarian cancer:

What it looks like?

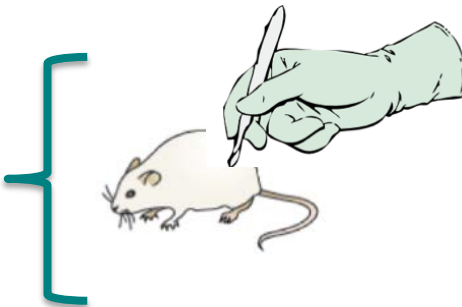
What drives it? (genes)

How it behaves?

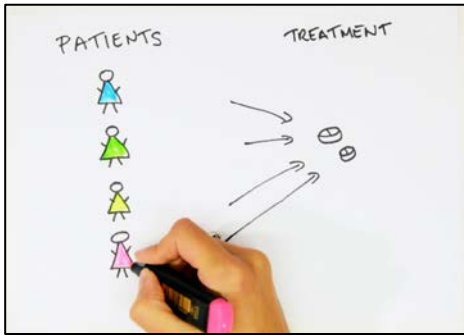
DNA repair

Identifying drivers + weaknesses

Patient specific cancer model:



Patient Specific Cancer models



Each ovarian cancer:

What it looks like?

What drives it? (genes)

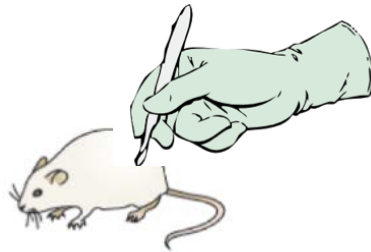
How it behaves?

DNA repair

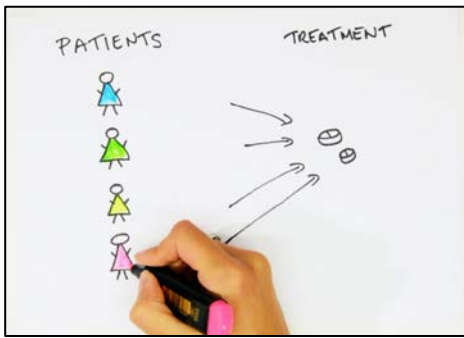
Identifying drivers + weaknesses

Patient specific cancer model:

Predicting response to treatments



Patient Specific Cancer models



Each ovarian cancer:

What it looks like?

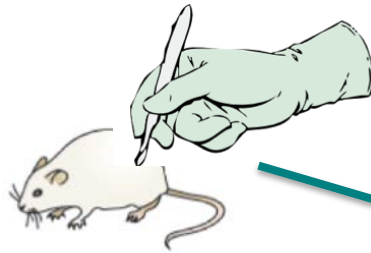
What drives it? (genes)

How it behaves?

DNA repair

Identifying drivers + weaknesses

Patient specific cancer model:



Predicting response to treatments

Testing new treatments

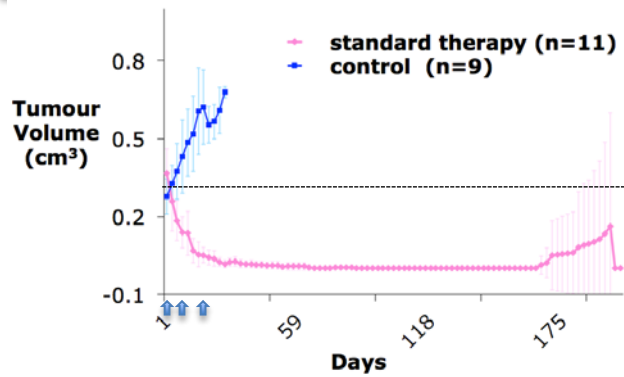


Models reflect patient outcome



Models

Responds to standard therapy



Patient Outcome

Genetic fault

Patient did well

BRCA2

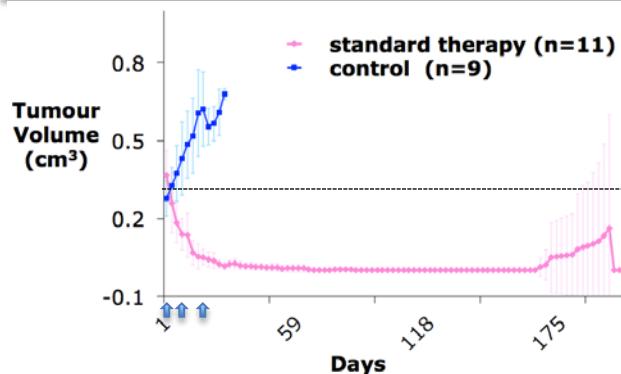
Alive: 22mo

Models reflect patient outcome



Models

Responds to standard therapy



Patient Outcome

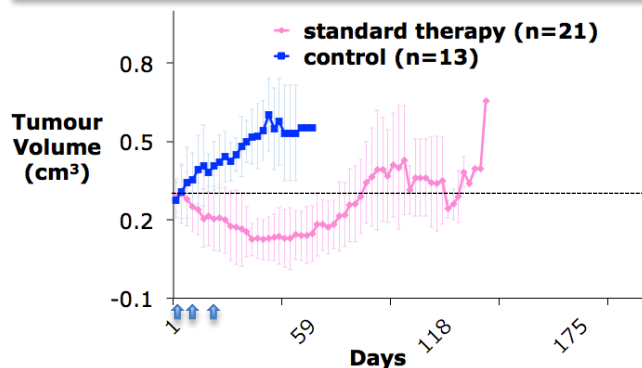
Patient did well

Alive: 22mo

Genetic fault

BRCA2

Early relapse



Cancer failed 1st + 2nd
line treatment

Deceased: 10 mo

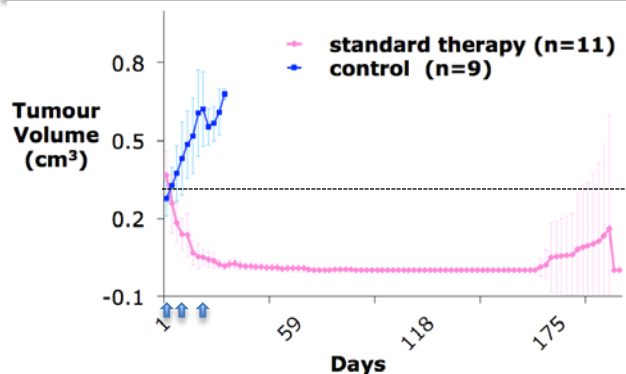
BRCA2

Models reflect patient outcome



Models

Drug sensitive



Patient Outcome

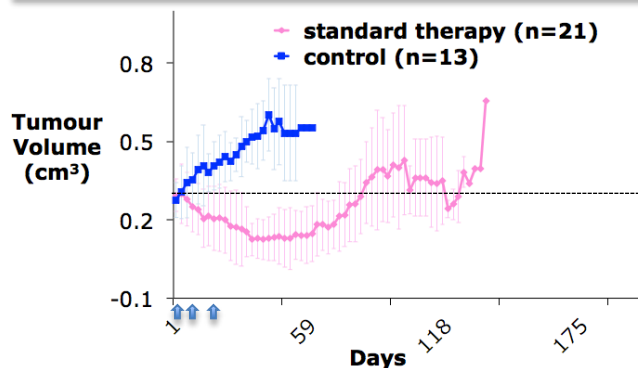
Patient did well

Alive: 22mo

Genetic fault

BRCA2

Early relapse



Cancer failed 1st + 2nd
line treatment

Deceased: 10 mo

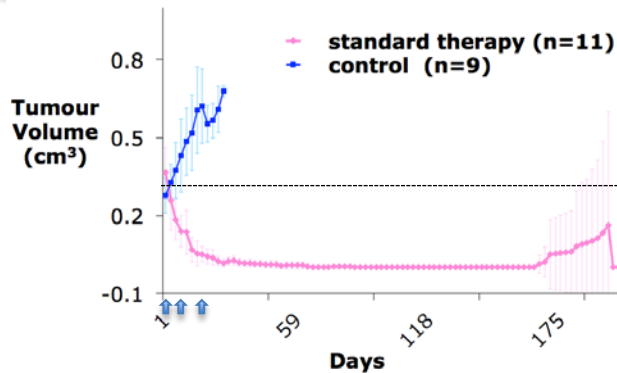
BRCA2

? Identify
mechanism
of resistance

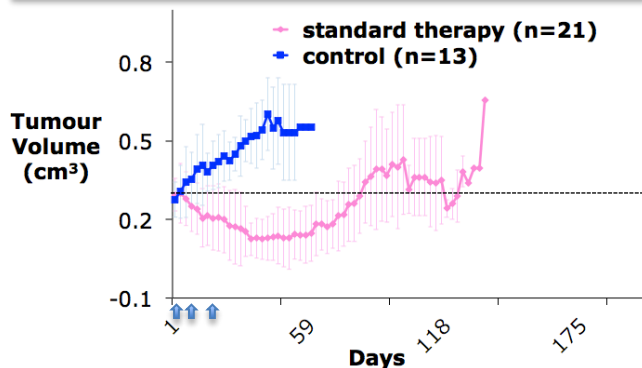


Models

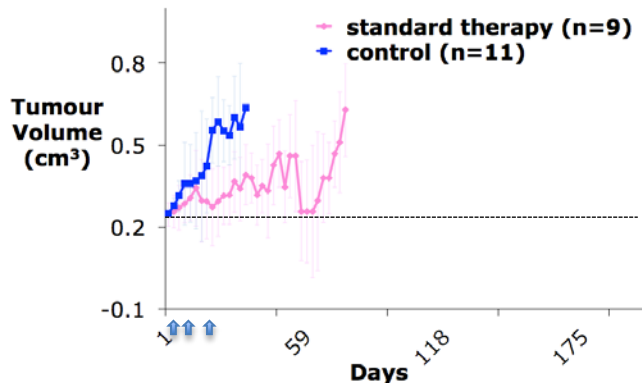
Responds to standard therapy



Early relapse



Very poor responder



Models reflect patient outcome

Patient Outcome

Genetic fault

Patient did well

BRCA2

Alive: 22mo

Cancer failed 1st + 2nd
line treatment

BRCA2

Deceased: 10 mo

**? Identify
mechanism
of resistance**

Cancer failed 1st + 2nd
line treatment,
receiving 3rd line

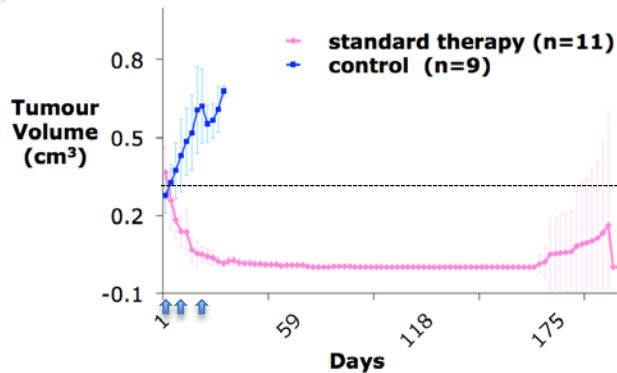
Oncogenes high
“driver genes”

Alive: 16 mo

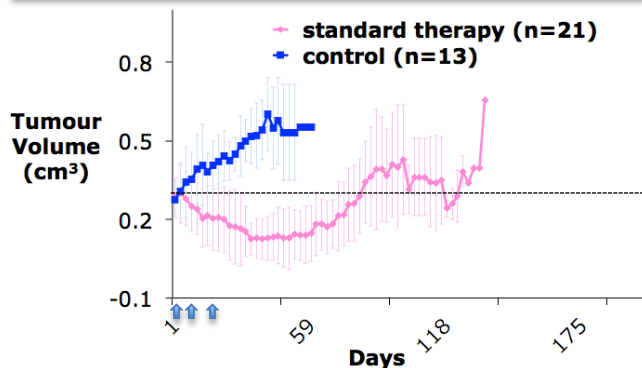


Models

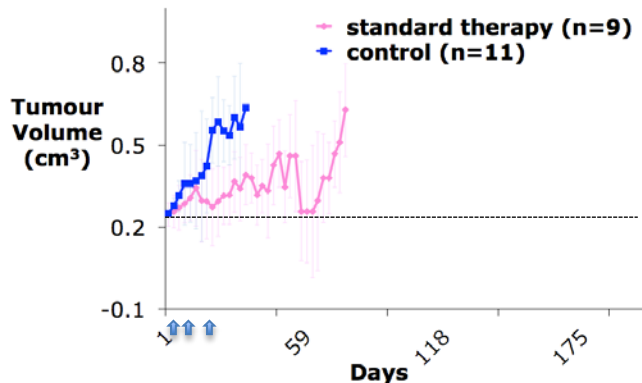
Responds to standard therapy



Early relapse



Very poor responder



Models reflect patient outcome

Patient Outcome

Genetic fault

Patient did well

BRCA2

Alive: 22mo

Cancer failed 1st + 2nd
line treatment

BRCA2

Deceased: 10 mo

**? Identify
mechanism
of resistance**

Cancer failed 1st + 2nd
line treatment,
receiving 3rd line

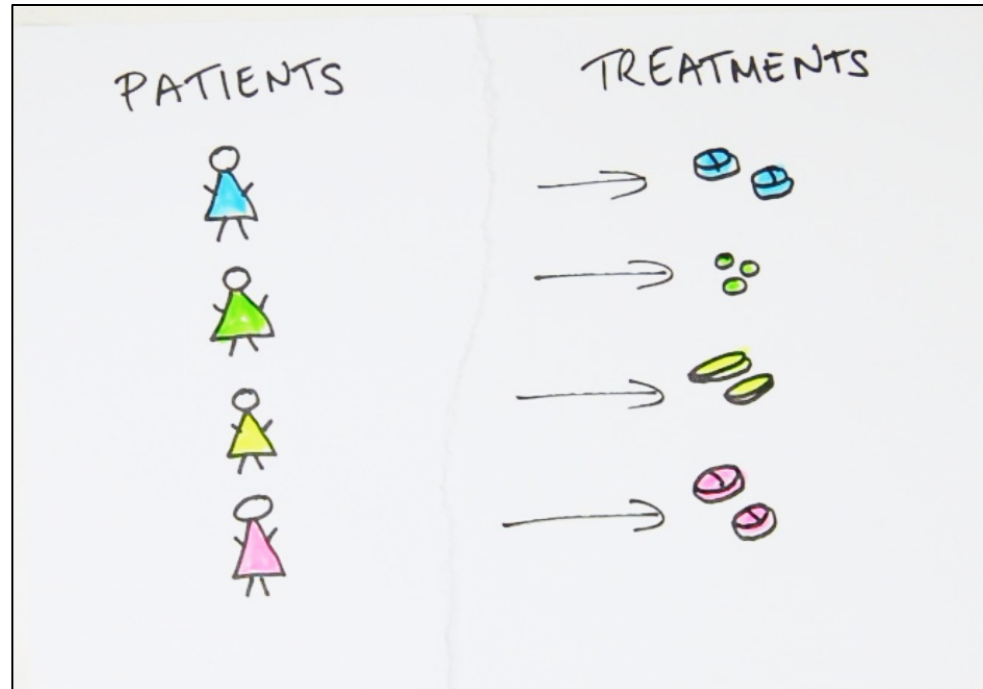
Oncogenes high
“driver genes”

Alive: 16 mo

**Target the
oncogenes**

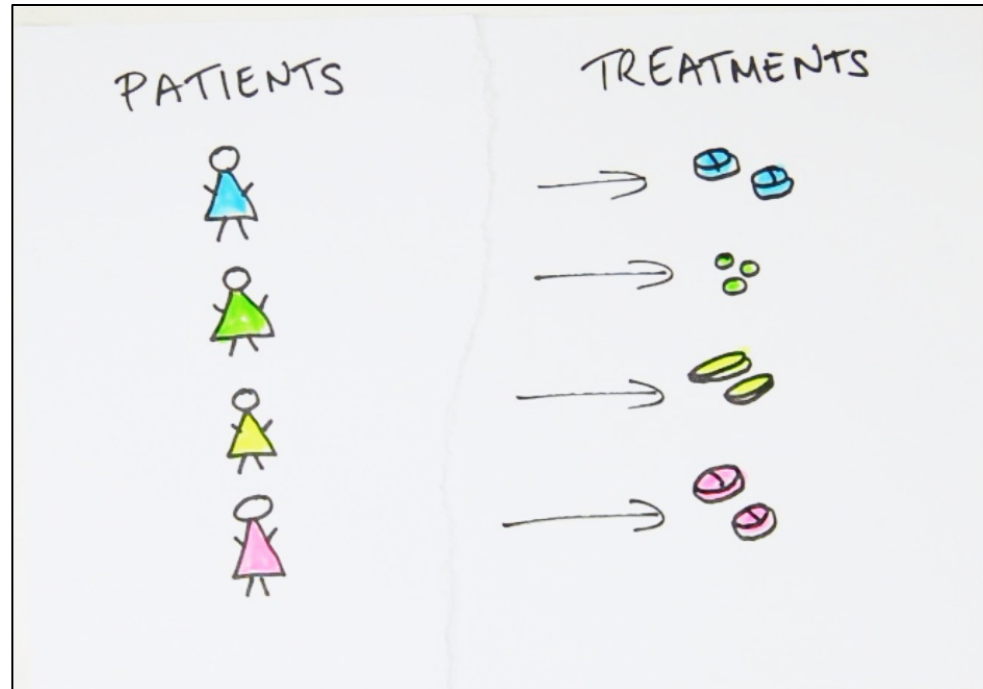
**OR WILL
FAIL!!**

Improved patient outcomes



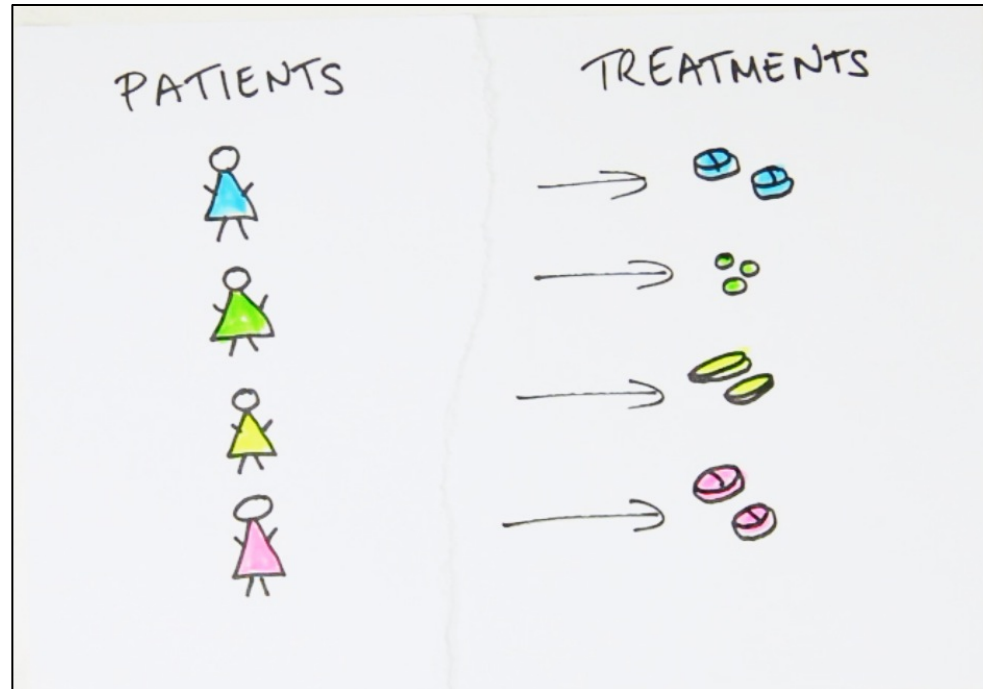
1. Finding new treatment strategies

Improved patient outcomes



1. Finding new treatment strategies
2. Matching women with the best treatment for them

Improved patient outcomes



1. Finding new treatment strategies
2. Matching women with the best treatment for them
3. Predicting resistance and the next treatment option

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