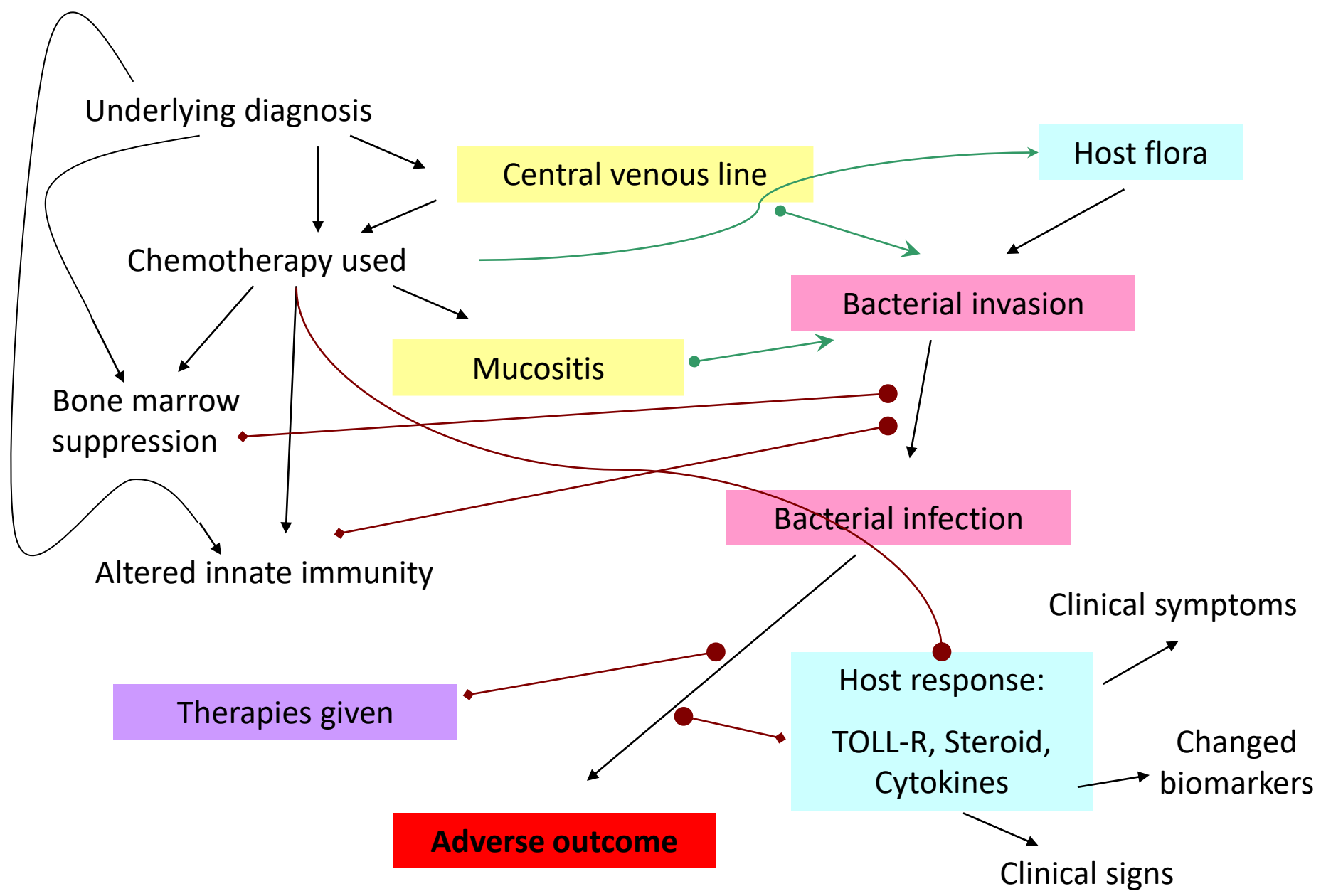


Hot, bothered, and  
feeling sick

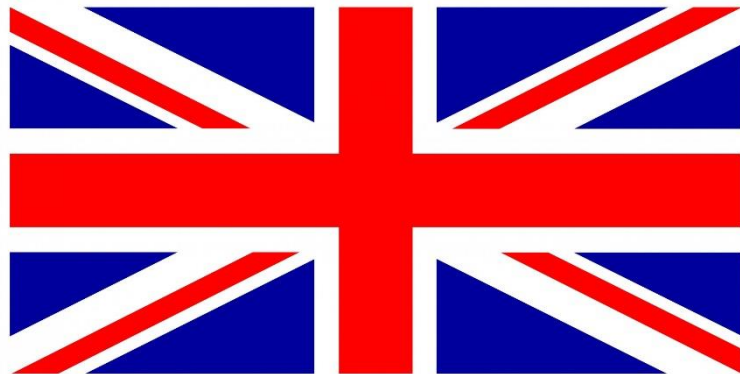
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Partnered with



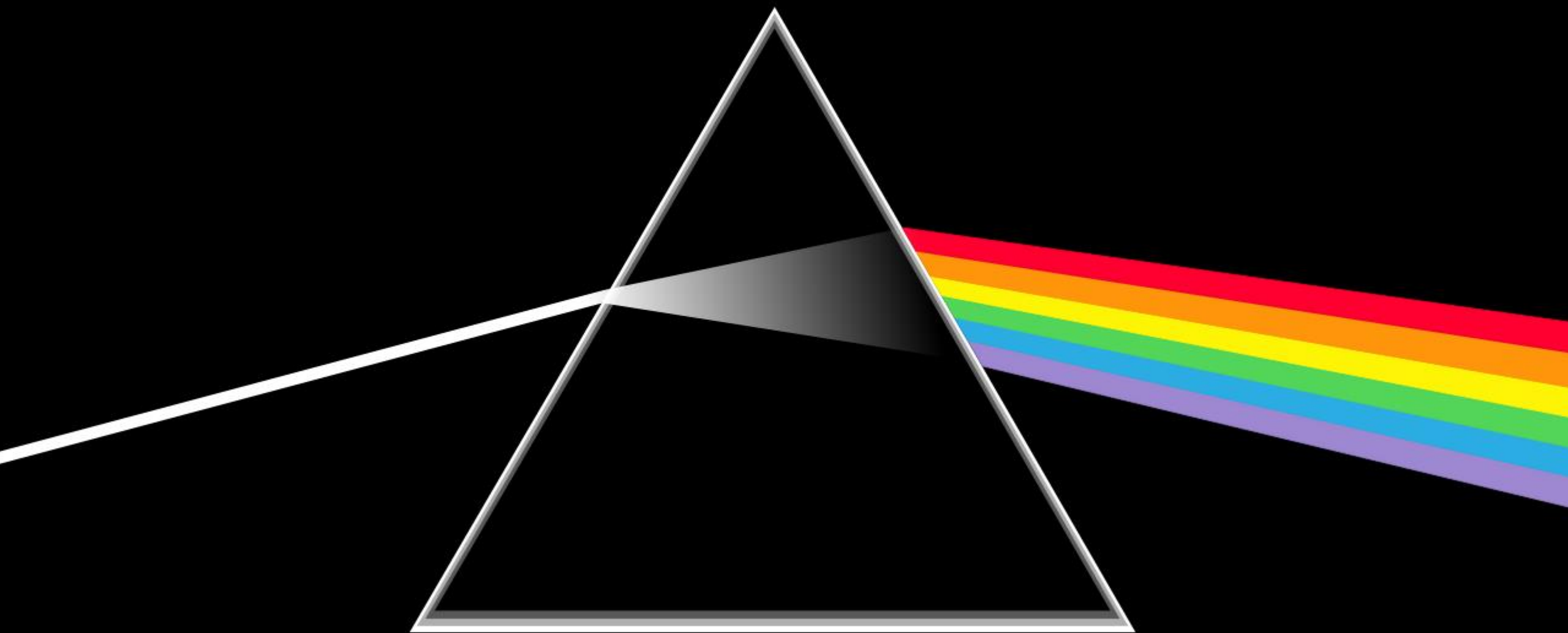


**“you were in there for a long  
period of time ... It was his  
cupboard ... that experience of  
you just get out and then  
you’re stuck back in again it’s  
really draining”**



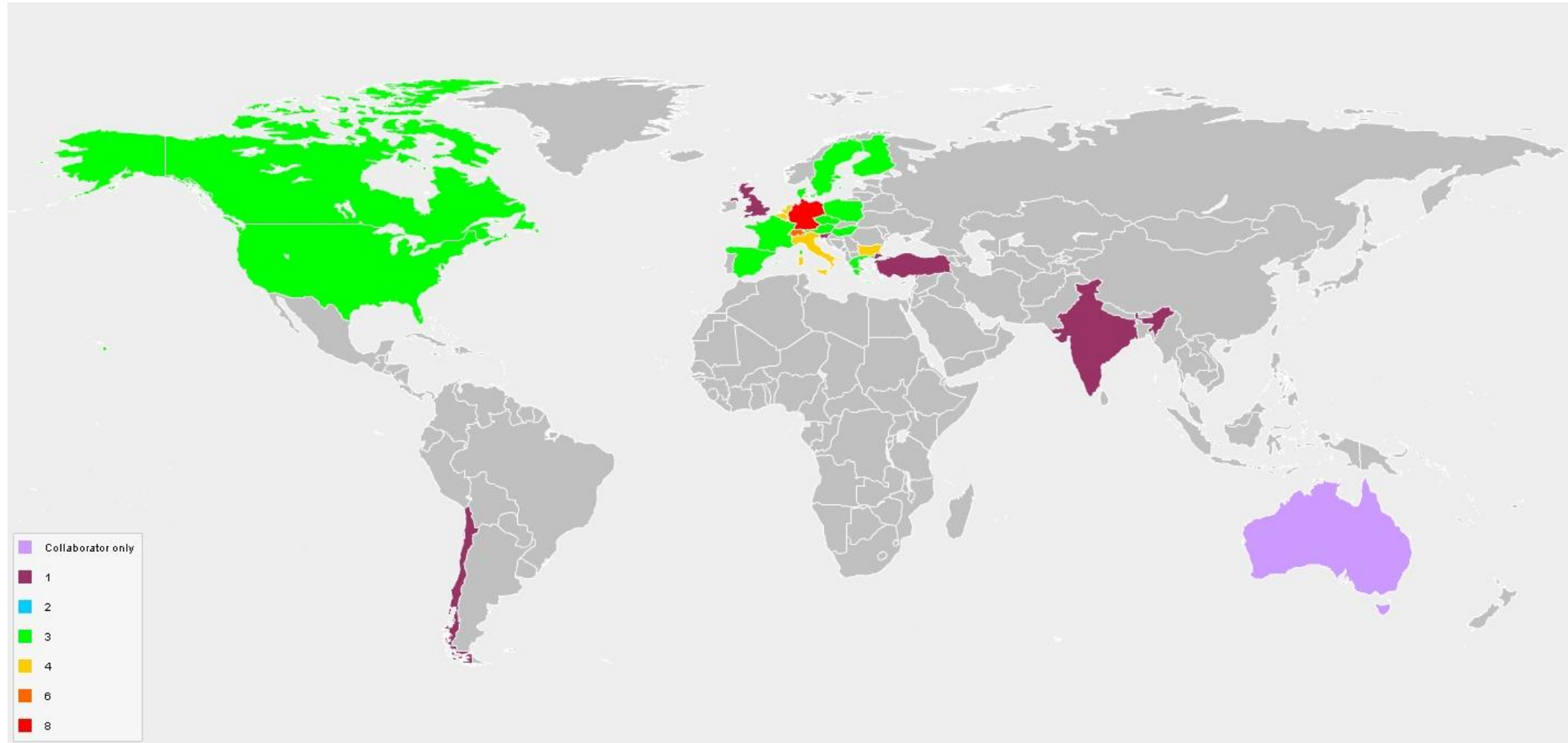
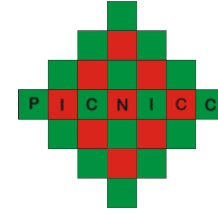
**"Hospital sucks... more germs,  
no privacy, random nurses,  
random doctors, shit food, &  
limited sleep, especially if  
forced into a shared room."**







# PICNICC Collaborative

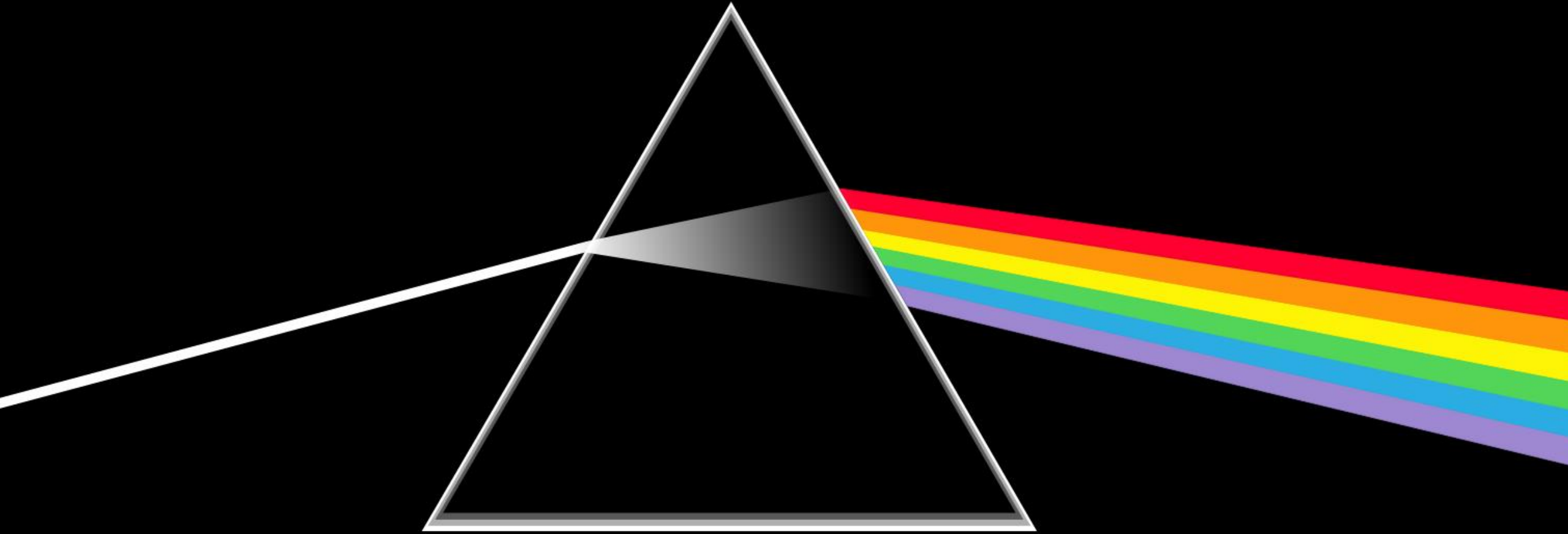




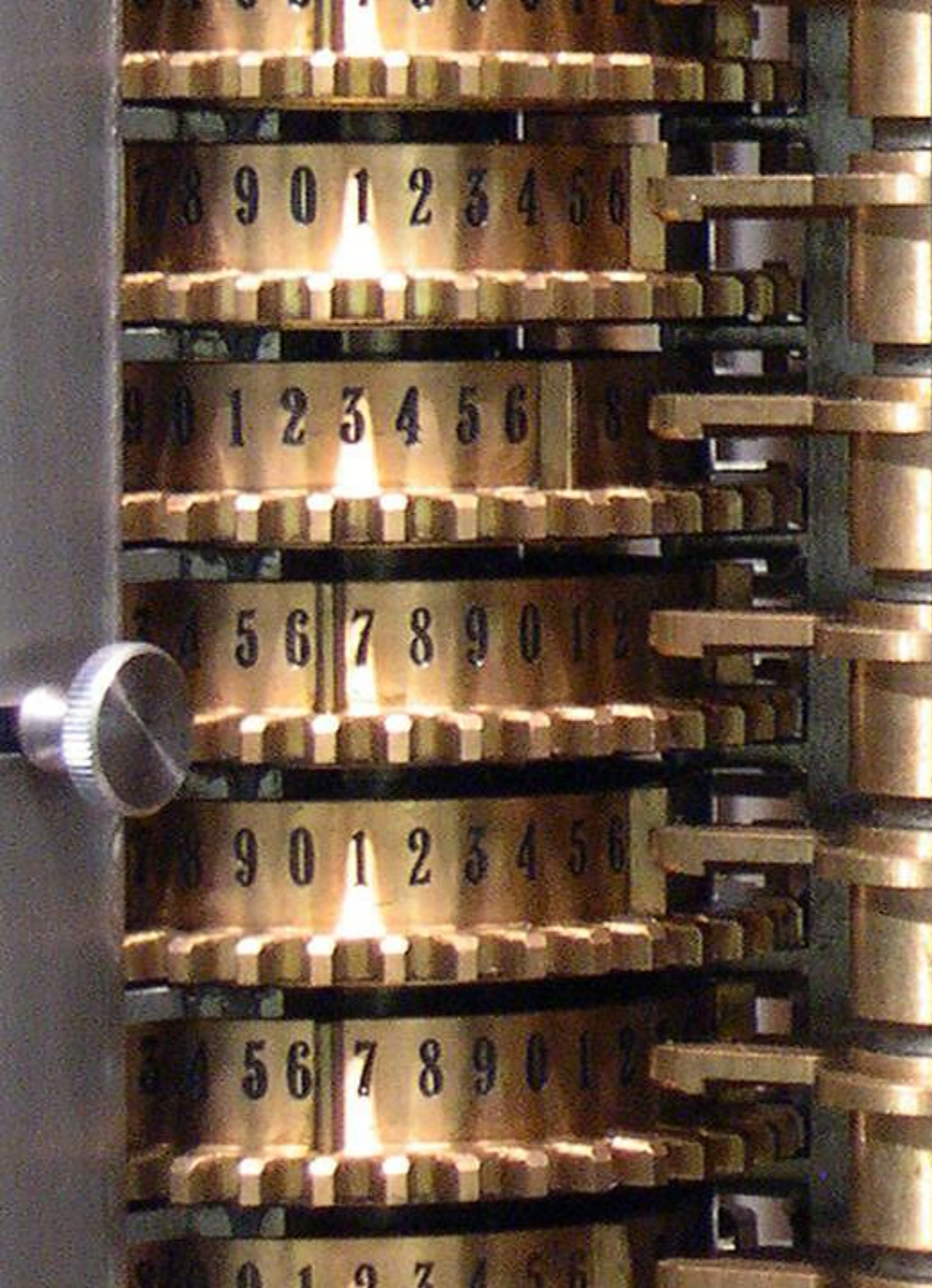




# Individual Participant Data Derived Prediction Model For The Risk Of Microbiologically Defined Infection In Febrile Neutropenic Episodes



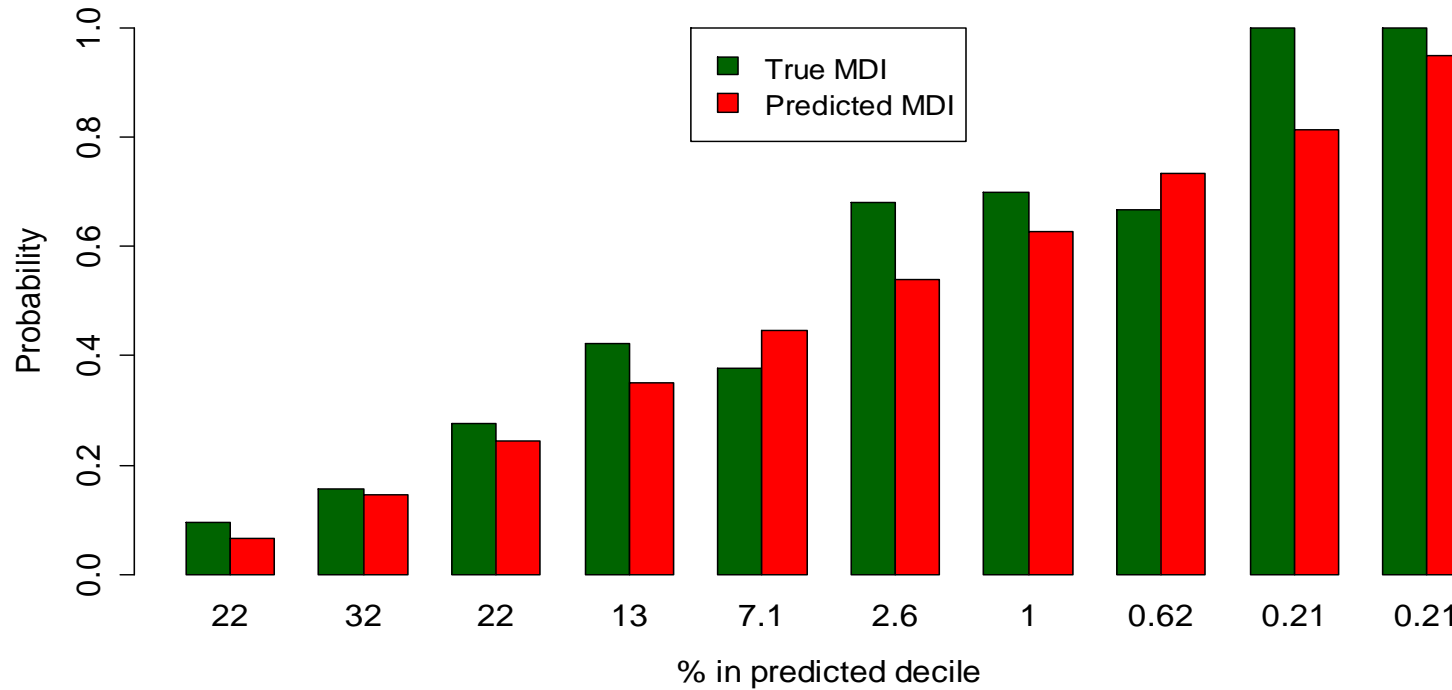
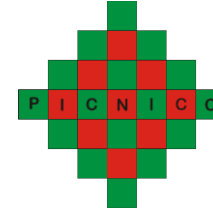






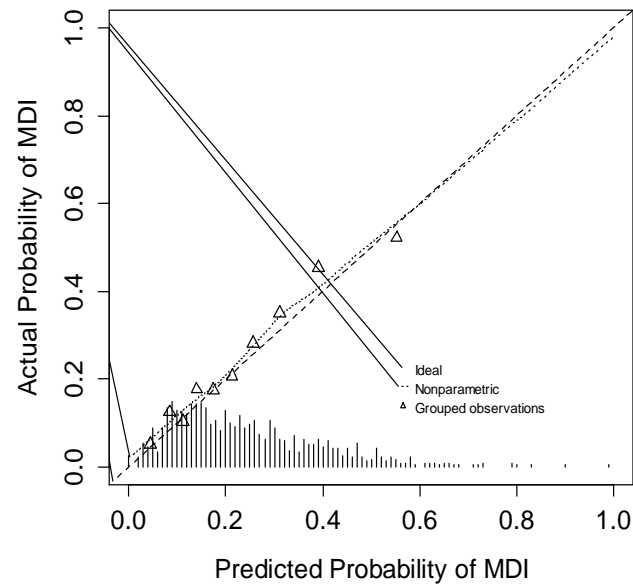
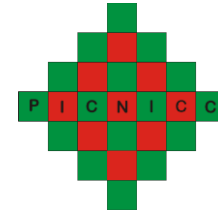
$$p(\text{MDI}) = \alpha + \beta x_1 + \beta x_2 \dots$$

# Rule calibration

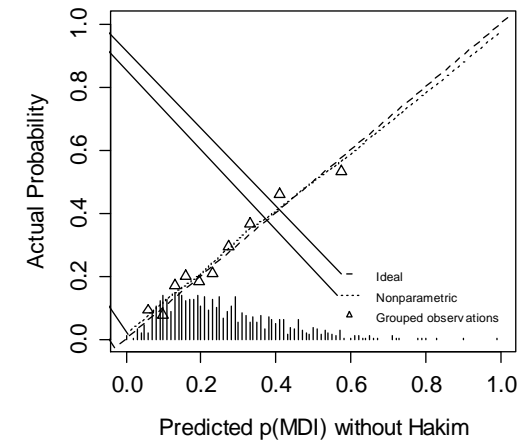
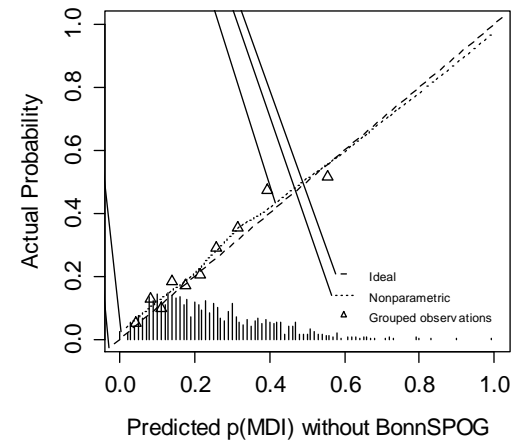
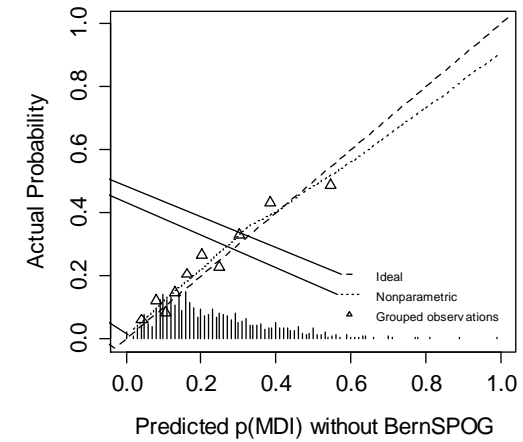
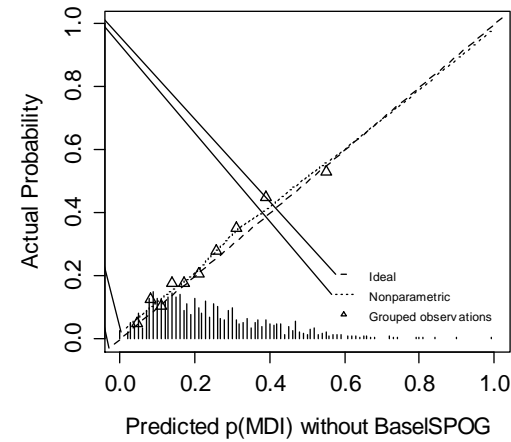


Risk  $\sim f(\text{Constant} + \text{Tumour type} + \text{Temperature} + \text{Severely unwell} + \text{Hb} + \log(\text{WCC}) + \log(\text{AMC}))$

# Validations: Bootstrap and Leave-one out



Bootstrapped original

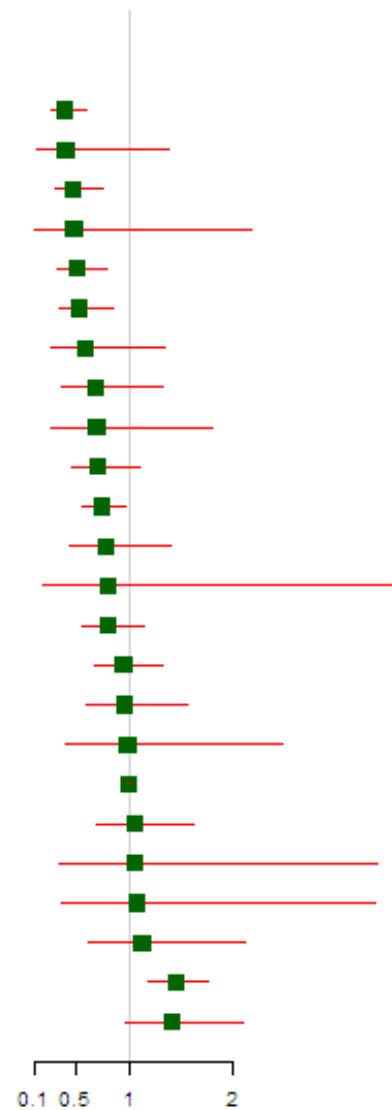




# Tumour type

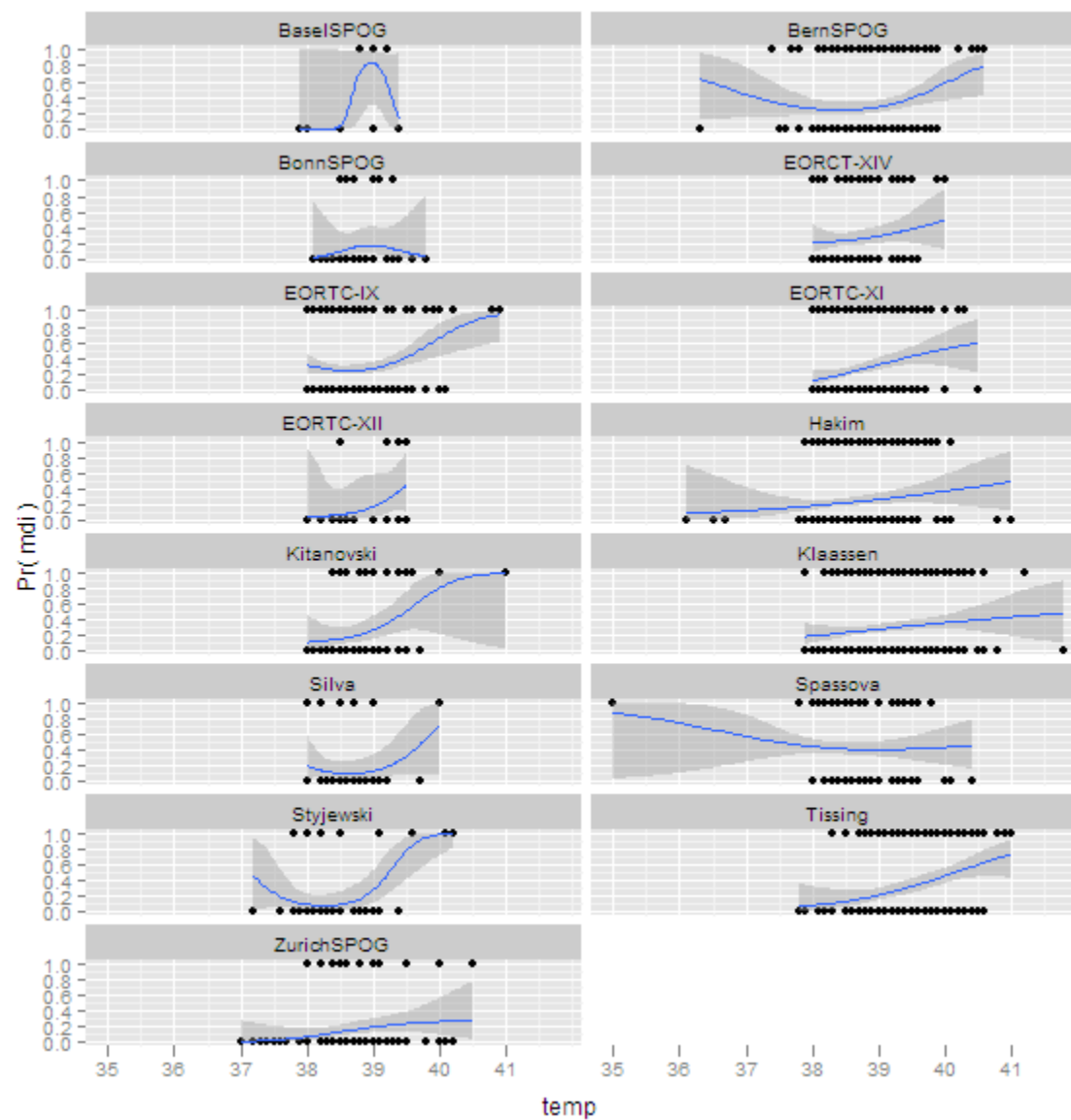
**Tumour type Odds Ratio**  
Risk of MDI

Osteo	0.39
Retino	0.4
HR-NBL	0.47
LR-NBL	0.47
Ewings	0.51
Solid	0.53
Hepato	0.58
Other	0.68
LGBrain	0.69
Wilms	0.7
NHL	0.74
Lymphoma	0.78
Carcinoma	0.79
HGBrain	0.79
RMS	0.95
Hodgkins	0.96
GCT	0.99
ALL	1
Brain	1.1
LCH	1.1
Nonmalignant	1.1
Sarcoma	1.1
AML	1.4
NBL	1.4



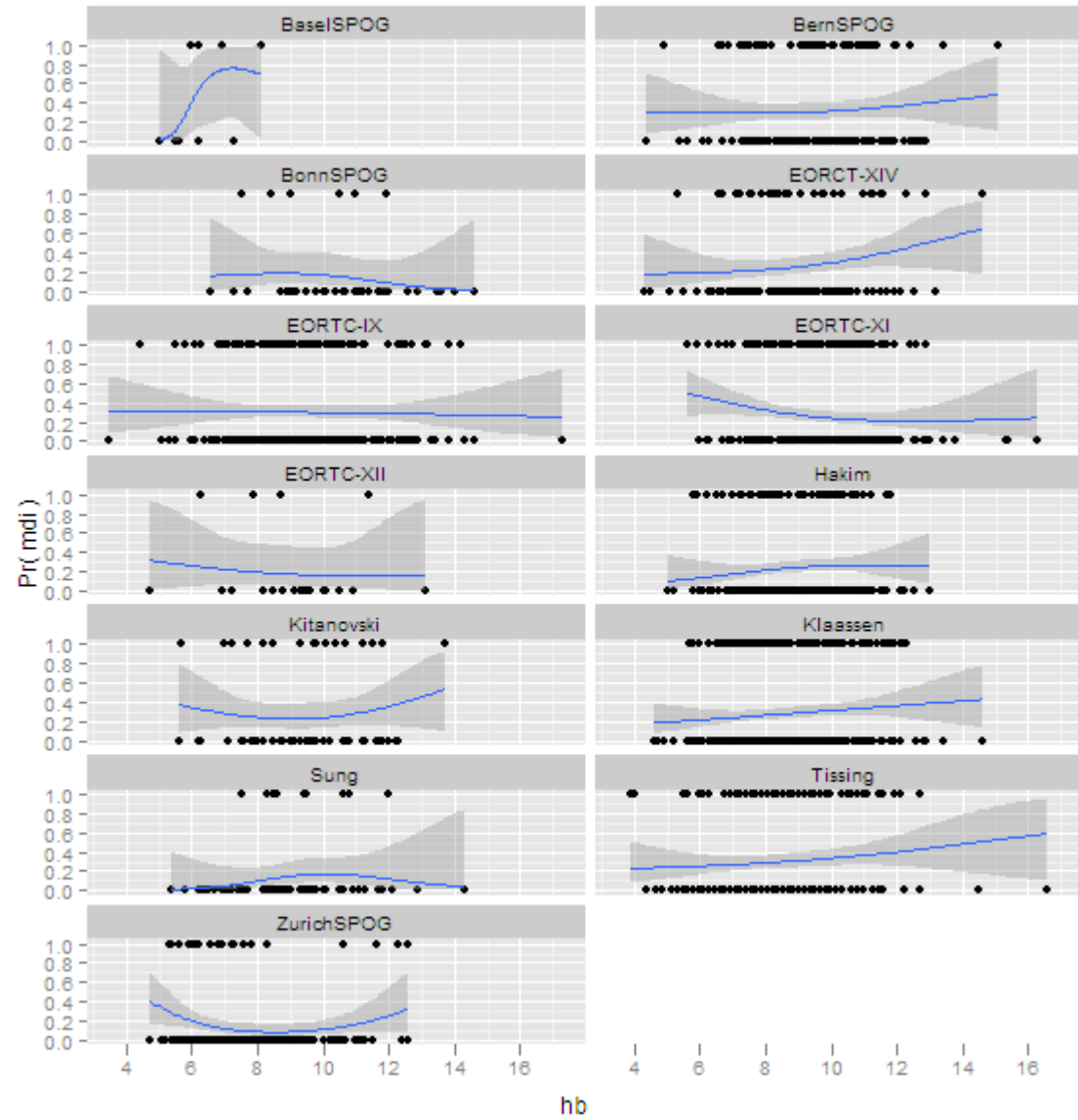
# Temperature

$p < 0.0000000001$



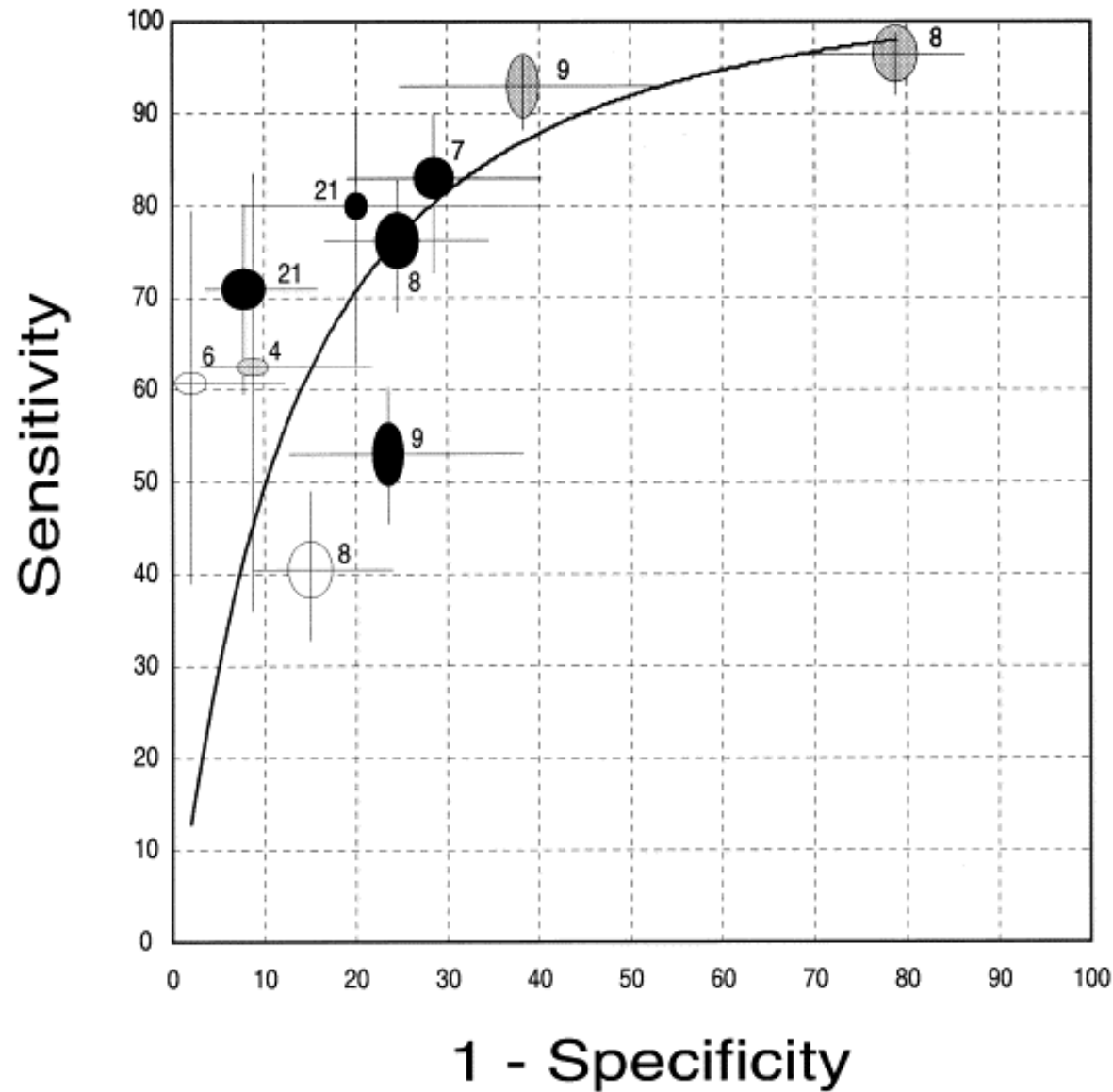
# Haemoglobin

$p < 0.1$





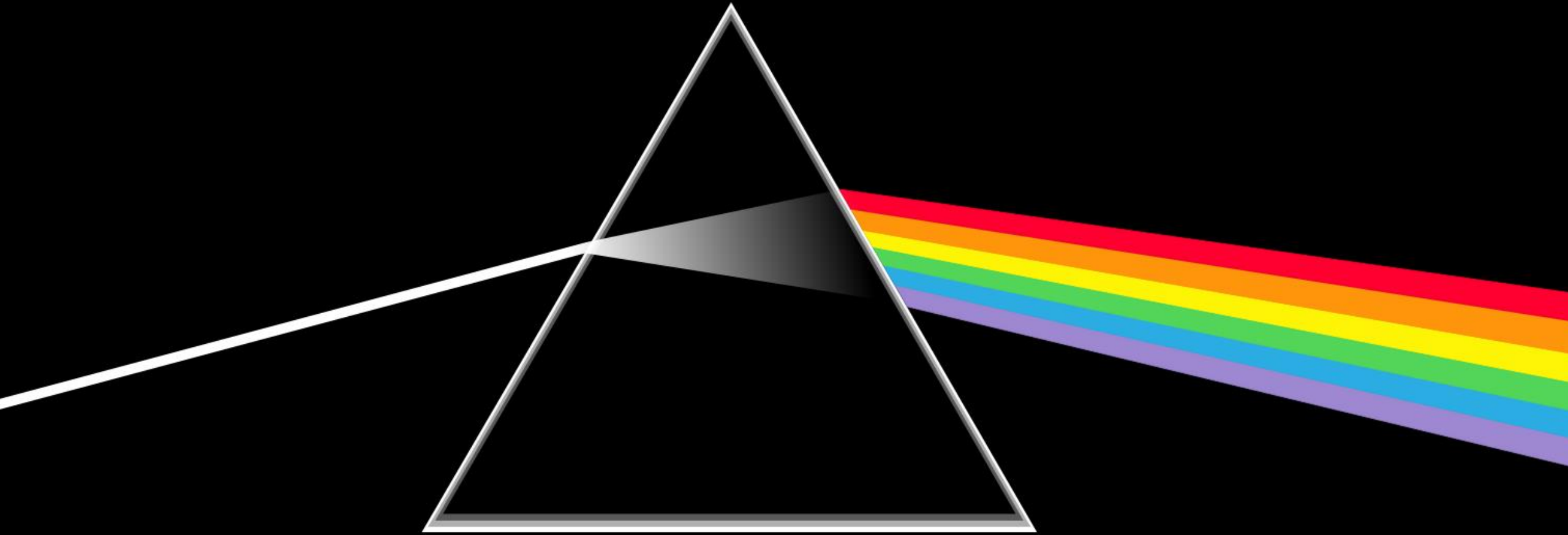
## Comparison of radiography to sinus puncture

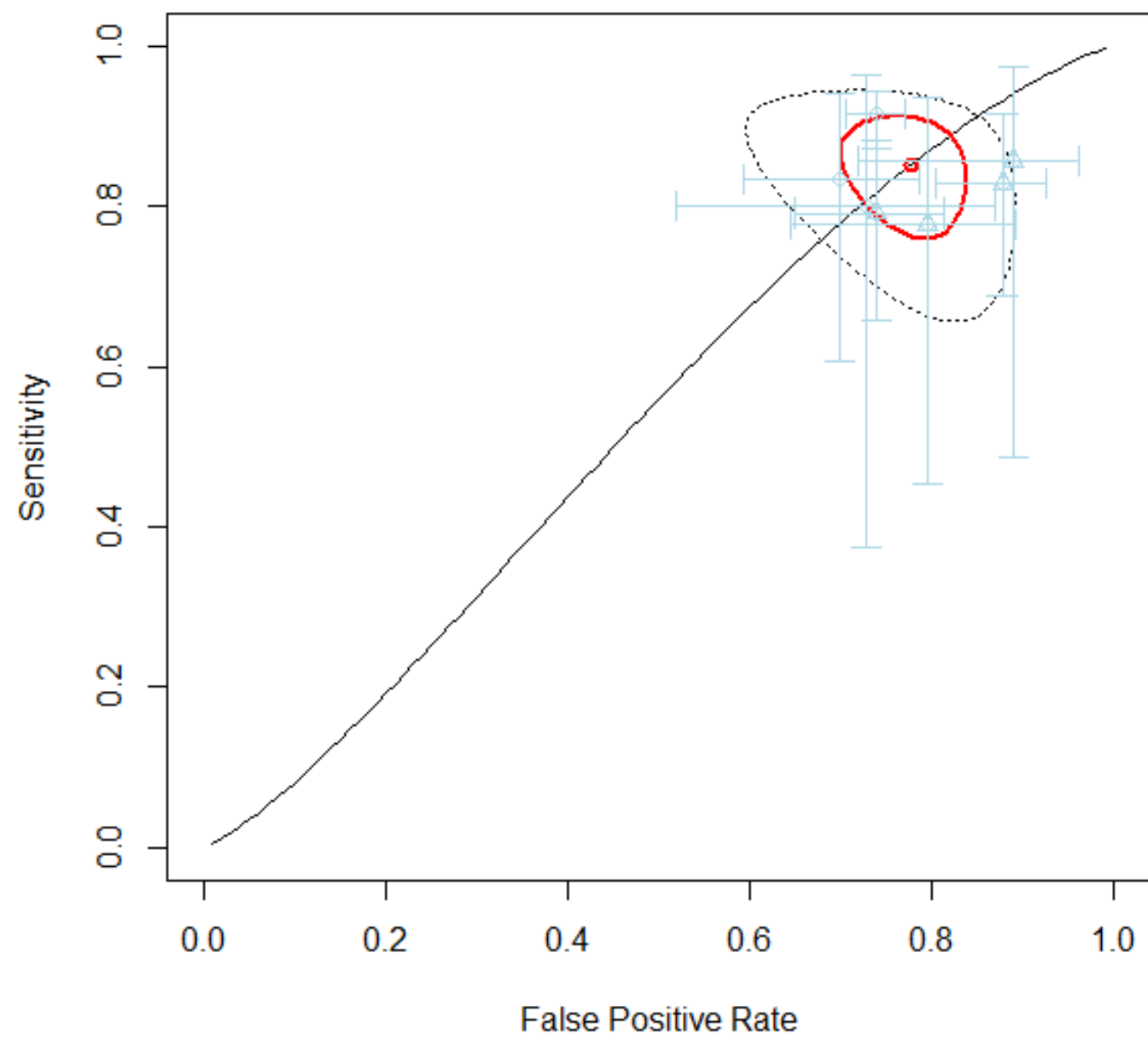


- White ellipse = “sinus opacity”
- Black ellipses = “sinus fluid or opacity”
- Gray ellipses = “sinus fluid or opacity or mucous membrane thickening”



# Meta-analytic Validation Of The PICNICC Prediction Model For The Risk Of Microbiologically Defined Infection In Febrile Neutropenic Episodes









# Australia-UK-Swiss Rule

AUS-rule Variables	Yes	No
Preceding chemotherapy more intensive than ALL maintenance	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Total white cell count $< 0.3 \times 10^9/L$	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Platelet $< 50 \times 10^9/L$	<input type="checkbox"/> 1	<input type="checkbox"/> 0
<b>TOTAL SCORE</b>		

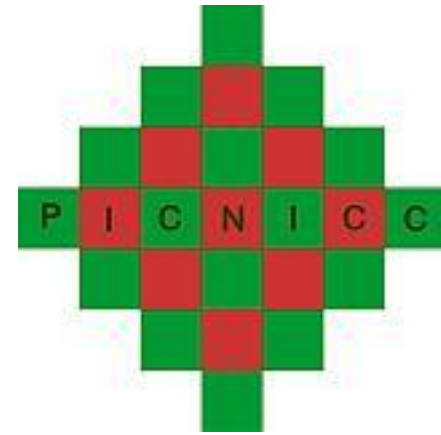




# AUS-rule results

SCORE	0 (n=84)	1 (n=298)	2 (n=284)	3 (n=192)
Bacteraemia	3 (3.6)	22 (7.4)	36 (12.7)	47 (24.5)
Bacterial infection	9 (10.7)	49 (16.4)	66 (23.2)	74 (38.1)
Mortality	0	0	0	1 (0.05%)

# PICNICC+ Dataset



SCORE	0 (n = 177)	1 (n = 489)	2 (n = 548)	3 (n = 196)
Bloodstream infection	16	69	107	109
% BSI	9.0%	14.1%	19.5%	36.8%
Death (any cause)	1 (0.6%)	1 (0.2%)	1 (0.2%)	3 (1.2%)
ICU	3 (1.7%)	10 (2%)	14 (2%)	10 (3.4%)

# **3 “hurdles” for safe discharge**

**1. Qualify for risk stratification**

**2. Be risk stratified**

**3. Wellness/home-safety criteria**

## Minimum inpatient observation period with IV antibiotics

AUS	0	1	2	3
Risk	Very low	Low	Moderate	High
Duration	4-8 hours	4-24 hours	24 hours	48 hours

### Homecare ineligible (remain inpatient)

- High risk condition
- Severely septic
- Clear focus requiring inpatient treatment
- Requiring admission for another reason
- Logistical or parental concerns
- Treating team preference

### Homecare eligible

- Oral co-amoxiclav and ciprofloxacin
  - Clarithromycin in pen allergy
- Parental observation chart
- Daily telephone reviews

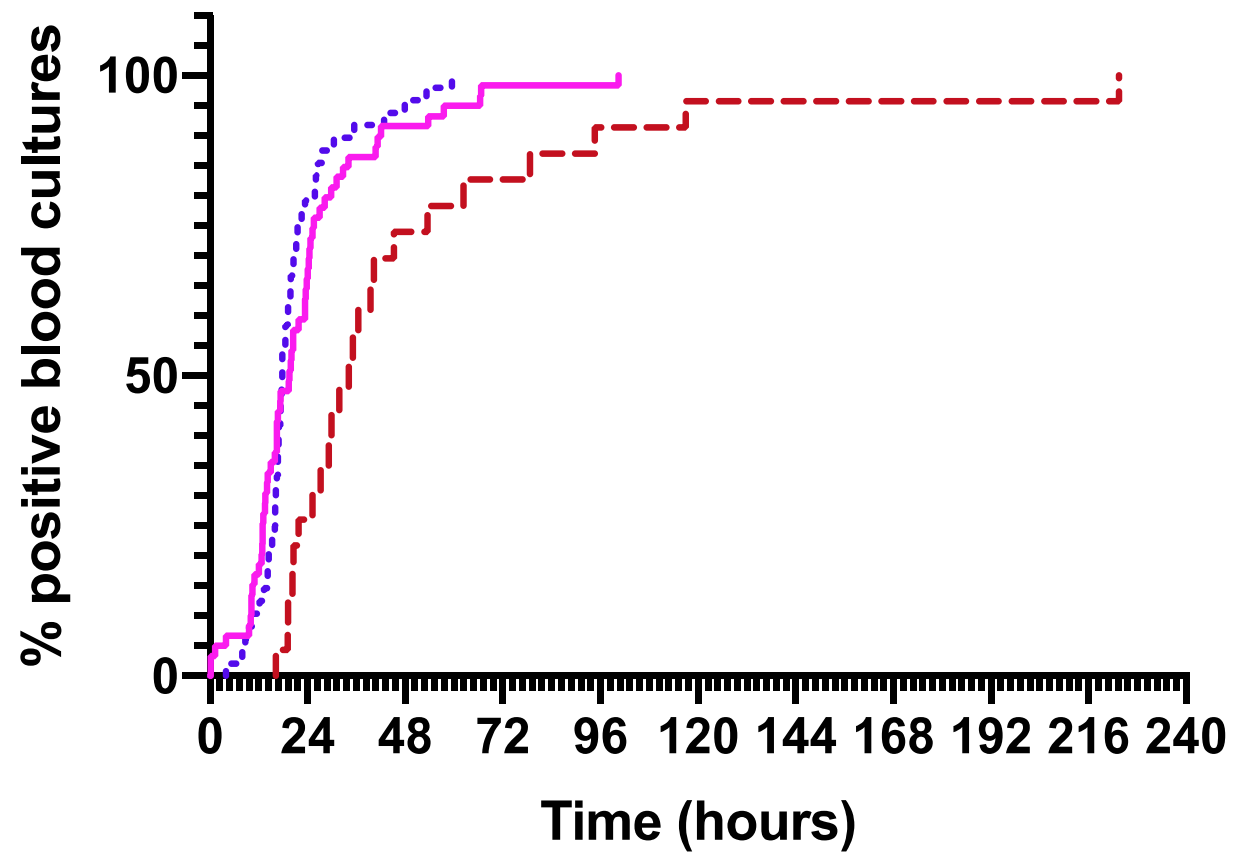




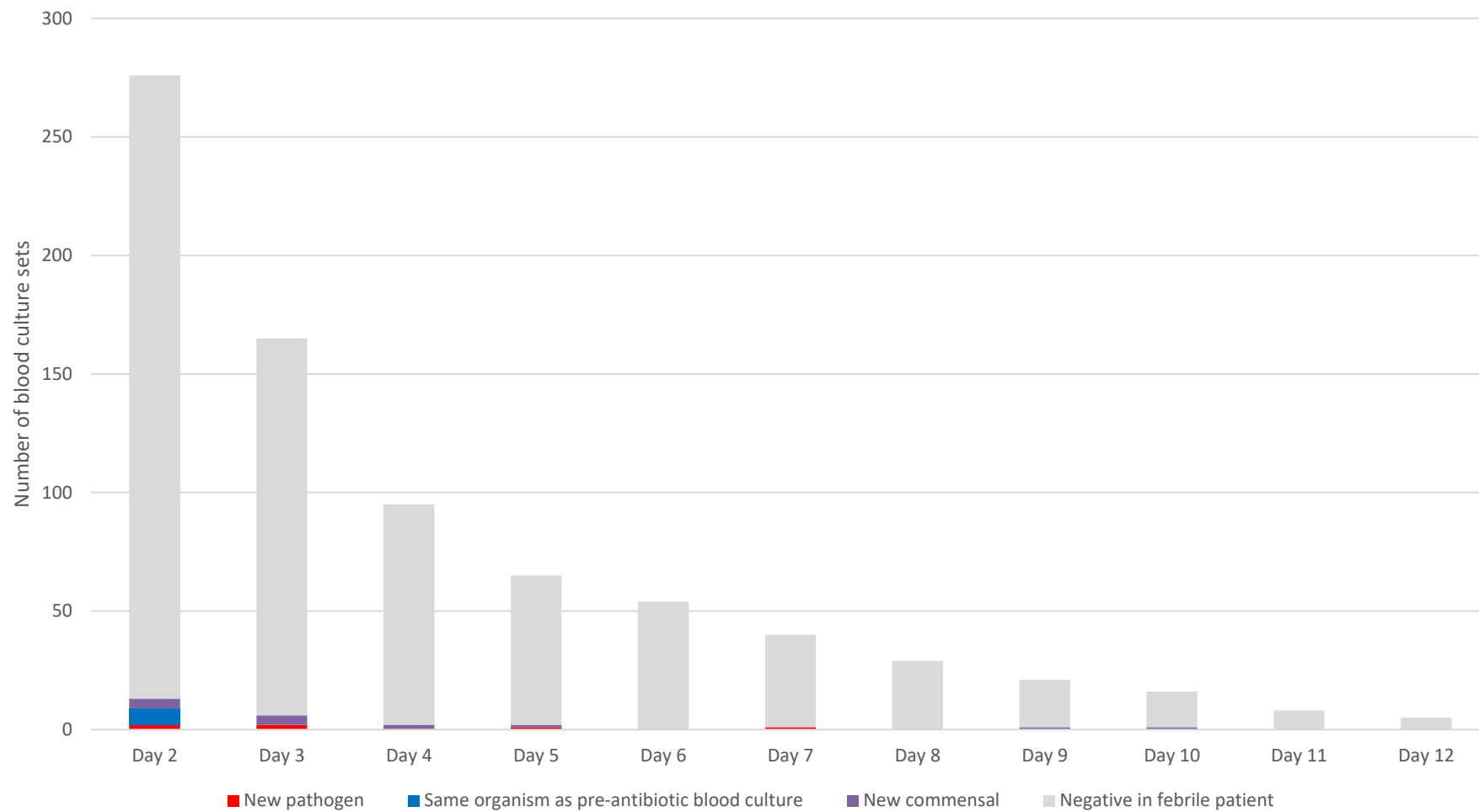


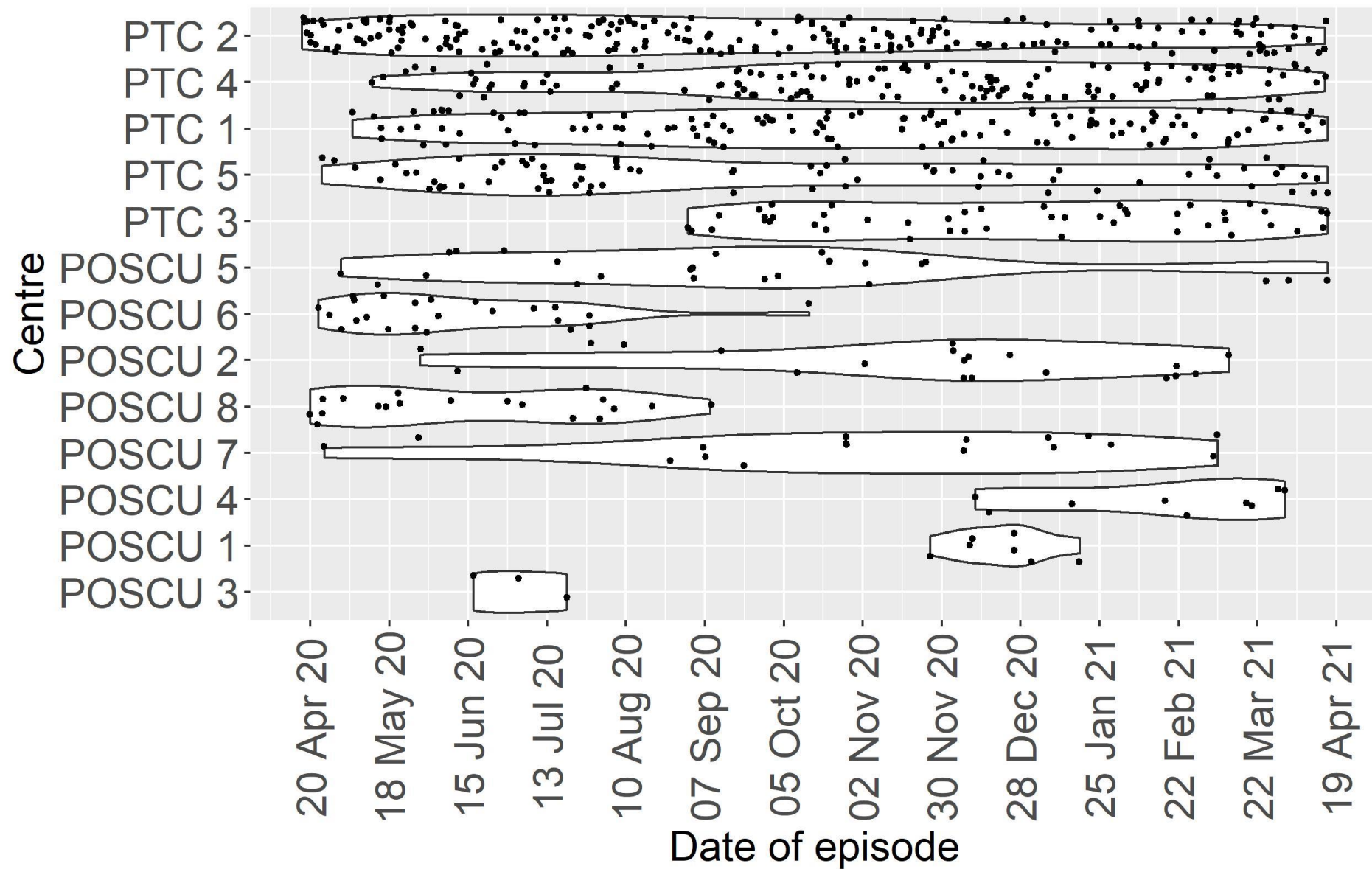




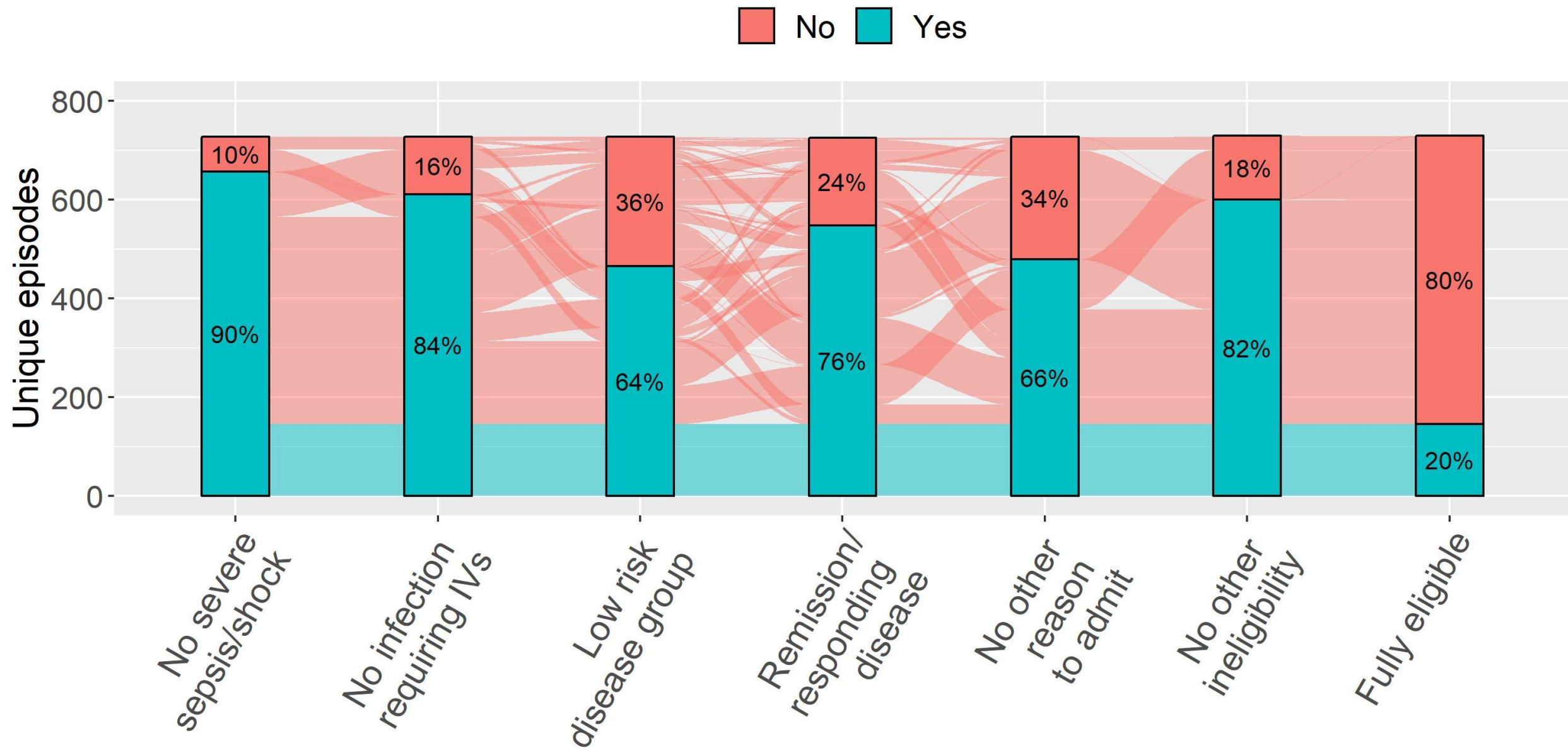


— Gram negative    ..... Gram positive    --- Commensal



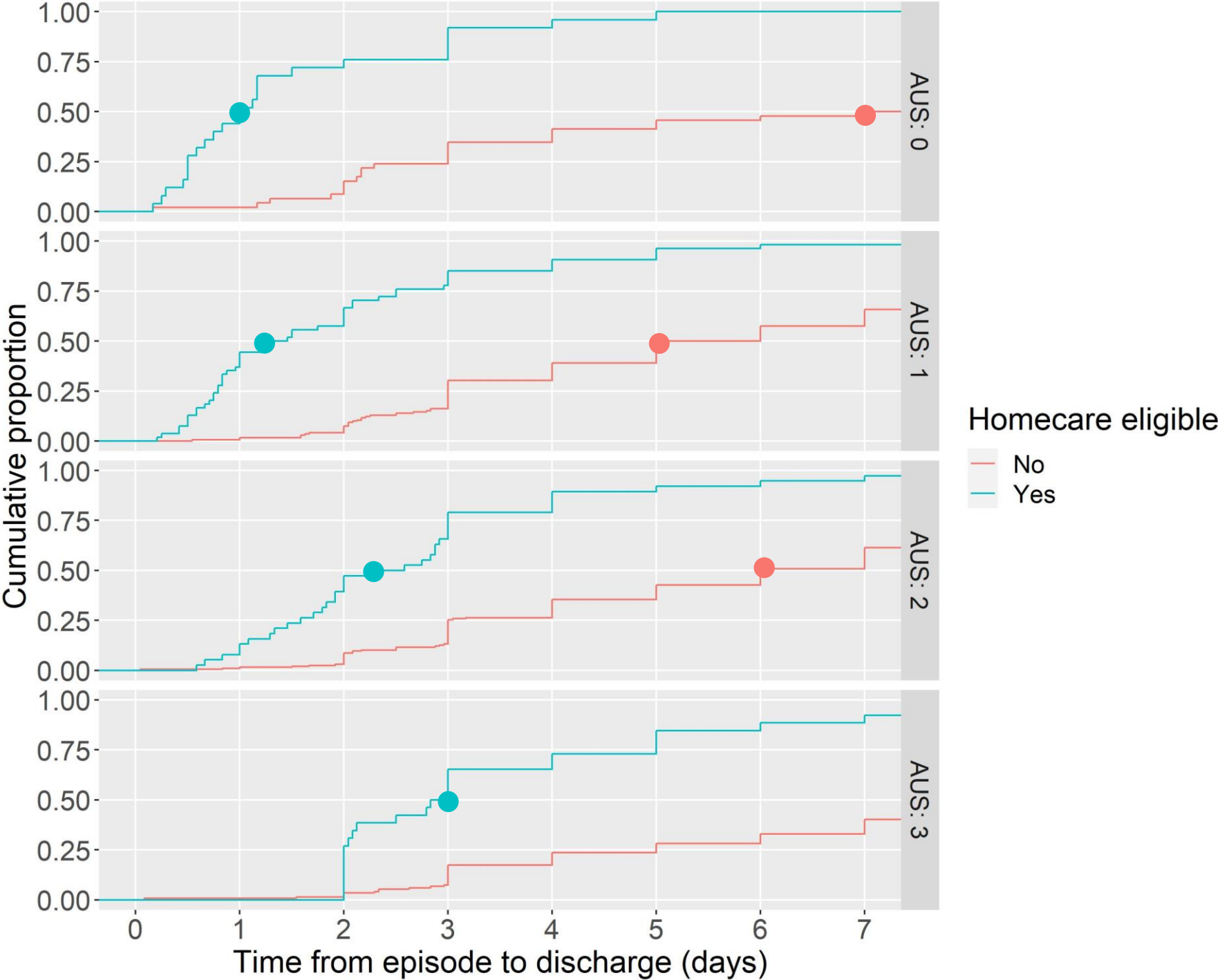


- 729 FN episodes in 405 patients
- 13 UK centres





Homecare significantly reduces length of stay



# **3 “hurdles” for safe discharge**

**1. Qualify for risk stratification**

**2. Be risk stratified**

**3. Wellness/home-safety**

**criteria**

Prof Bob Phillips  
Dr Jess Morgan  
Dr Thomas Jackson  
A/Prof Gab Haeusler

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Partnered with

