

# When do people with a haematological malignancy first show signs of risk of deteriorating and dying?

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# Haematological malignancies

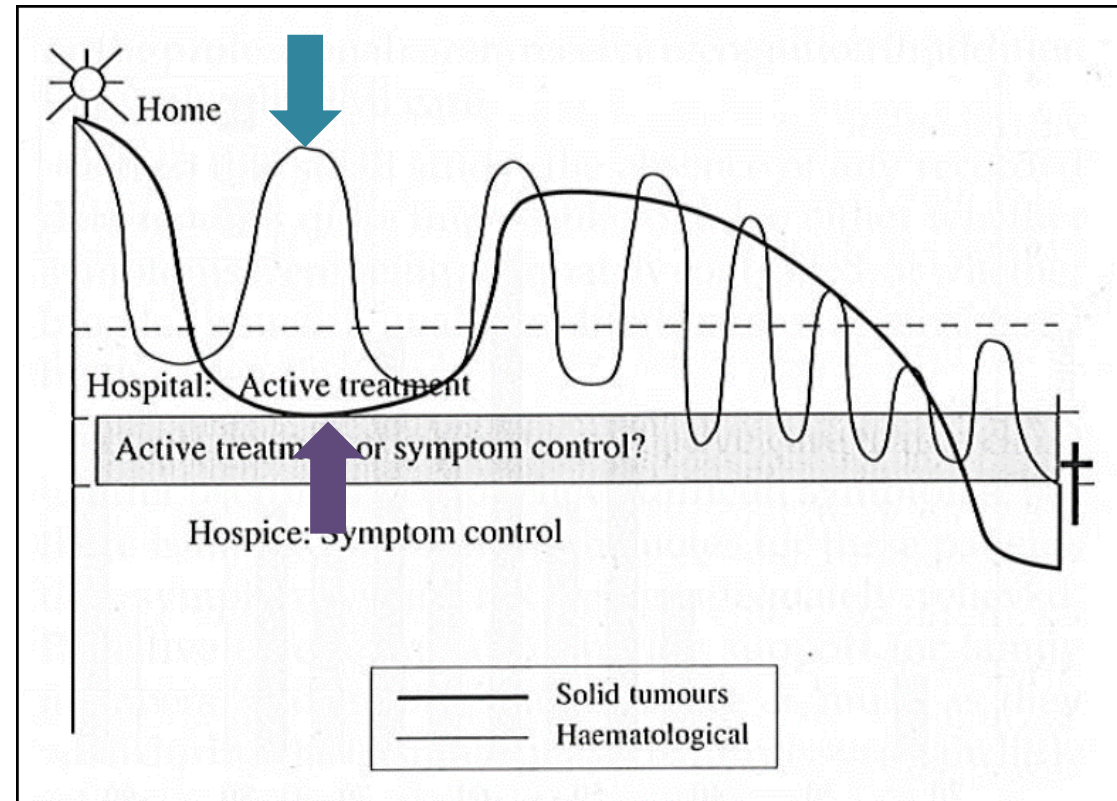


Overall five-year survival:

- 27% acute leukaemia
- 75% non-Hodgkin lymphoma
- 43% multiple myeloma
- 87% Hodgkin's lymphoma

(Australian Institute of Health and Welfare, 2017; Ferlay et al., 2013)

# Illness trajectory



(Maddocks, Bently and Sheedy, 1994)

# Identifying risk of deteriorating and dying



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## **Research Question 1**

What are the clinical indicators that identify when a person with a haematological malignancy is at risk of deteriorating and dying?

## **Research Question 2**

How far back from death can the clinical indicators associated with deteriorating and dying be identified?

# Study 1 – Delphi method

## **Aim**

Identify clinical indicators that signal risk of deteriorating and dying

## **Method**

- Modified Delphi approach
- 3 rounds
- Mixed-methods (qual and quant)

## **Sample**

Haematology and palliative care clinicians

# Study 1 – main findings

- Age  $\geq 70$
- Declining performance status
- Present of  $>2$  comorbidities
- Multi-relapse, progressive or treatment refractory disease
- Persistent bacterial or viral infections
- Fungal infections
- Severe treatment refractory graft versus host disease
- Requiring high care
- Signs of frailty
- Treatment limitations

**Final 3 – 6  
months of life**

# Study 2 – Case-control

## **Aim**

Preliminary testing of clinical indicators identified in Study 1

## **Method**

- Case-control design
- Review of medical records

## **Sample**

120 deceased cases : 240 living controls

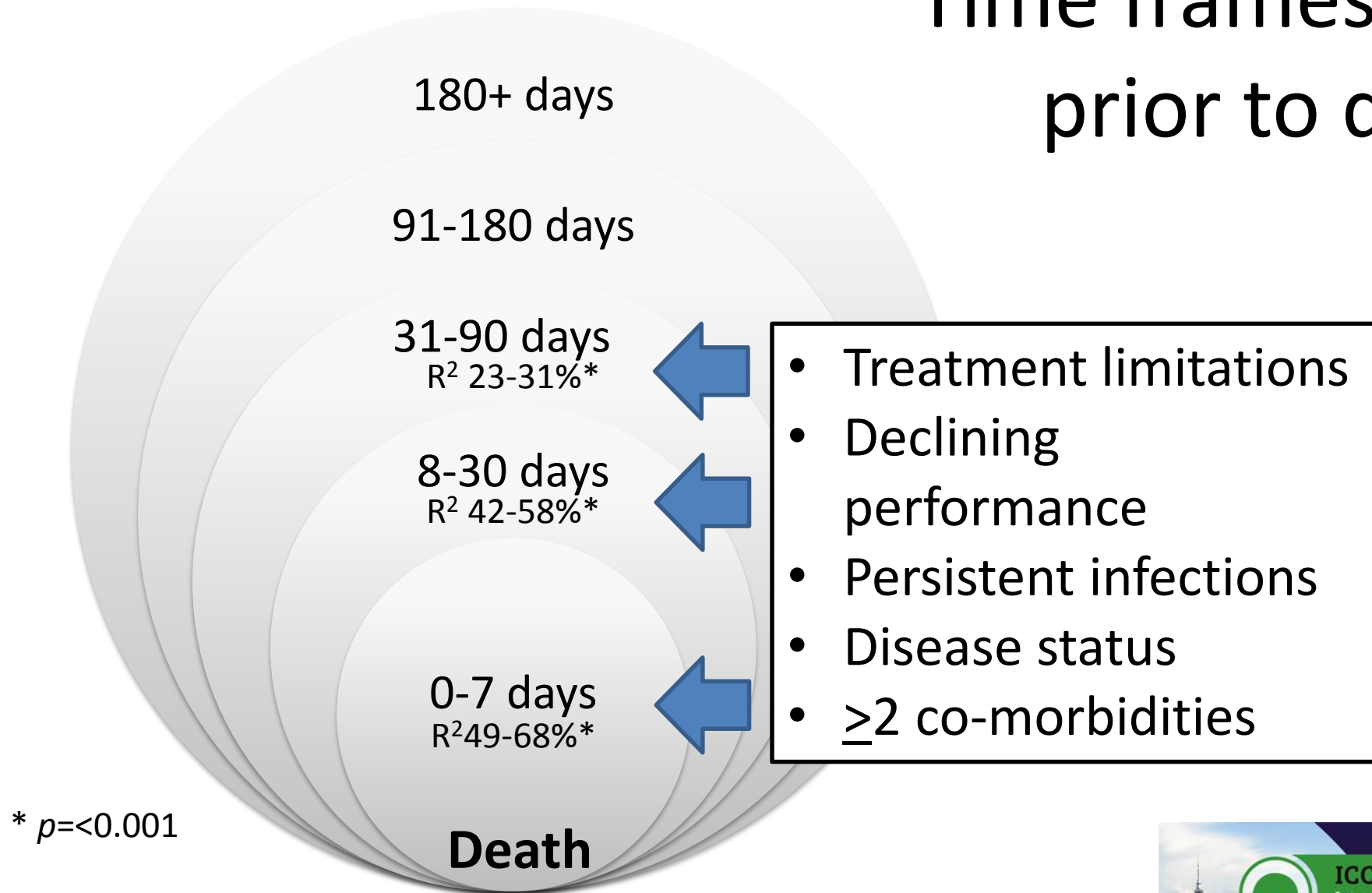


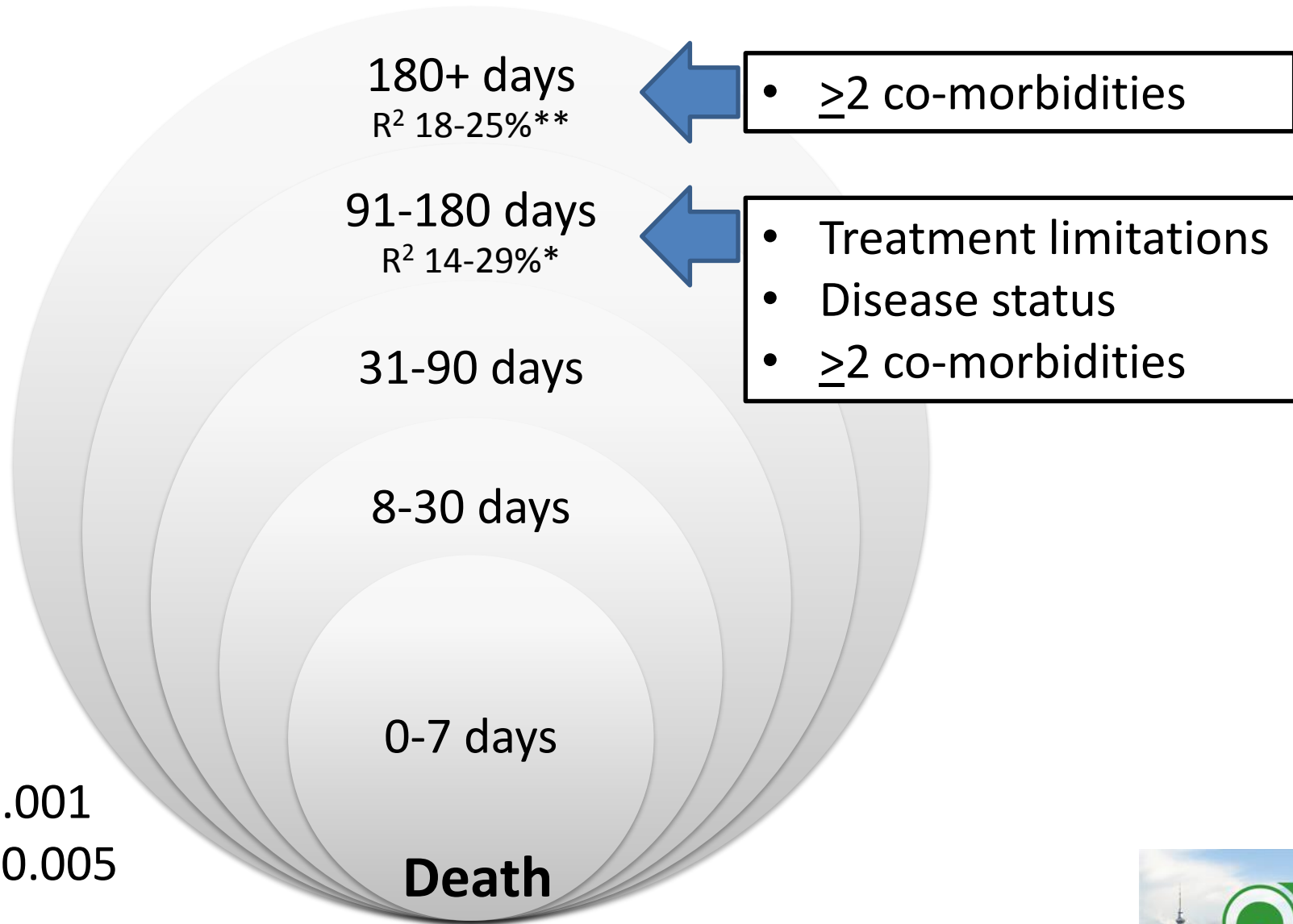
# Main findings

Variables in the model	Odds Ratio	95% CI	P value
Treatment limitations	7.855	3.528 - 17.489	<0.001
Declining performance	7.153	3.281 - 15.597	<0.001
Persistent infections (bacterial and viral)	6.072	2.551 - 14.457	<0.001
Invasive fungal infections	4.887	1.197 - 19.949	0.027
Disease status	3.749	1.749 - 8.039	0.001
<u>≥</u> 2 comorbidities	2.991	1.319 - 6.781	0.009

\* Multivariable logistic regression model results

# Time frames present prior to death





\*  $p < 0.001$

\*\*  $p < 0.005$

# First present prior to death

Clinical indicator	Not present - n (%)	On admission - n (%)	During admission - n (%)	Median days prior to death - n (min-max)
Performance status	258 (72.5)	60 (16.9)	30 (10.7)	25 (0-198)
Comorbidities $\geq 2$	279 (78.4)	70 (19.7)	7 (2)	49 (1-206)
Disease	232 (65.2)	104 (29.2)	20 (5.6)	48 (1-219)
Persistent infections	288 (80.9)	12 (3.4)	56 (15.7)	21 (0-188)
Invasive fungal infections	335 (94.1)	2 (0.6)	19 (5.3)	24 (0-187)
Treatment limitations	254 (71.3)	55 (15.4)	47 (13.2)	26 (0-188)



# Discussion

RQ2: How far back from death can the clinical indicators associated with deteriorating and dying be identified?

- 3 months
- Treatment limitations, disease status and  $\geq 2$  co-morbidities earliest indicators
- Not always present for the first time on admission



# Conclusion



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# References

[Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11](#)  
Lyon, France: International Agency for Research on Cancer; 2013.