



## Prediction of death in general practice: a cluster randomised controlled study

Never Stand Still

Faculty of Medicine

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# End-of-life care

## General practice and end-of-life care

- Majority of last year of life spent in the community
- Evidence that GPs are able to provide high quality end-of-life care with specialist support
- GPs allow more people to die at home, which is the wish of most people

## Challenges to end-of-life care in general practice:

- Time and resource constraints
- Knowledge, skills, attitude
- Unclear role delineation between GP and specialist services
- Suboptimal end-of-life care planning

# End-of-life care planning

Ideally should include:

- Practice register of patients in need of palliative care
- Regular patient reviews
- Coordination of care
- Multidisciplinary care with focus on social supports
- Example: GSF
- Requires accurate identification of patients who are in need of end-of-life care

# Identification of patients

## Several methods have been devised

- Clinician's intuition
- Clinician's intuition framed differently through the 'surprise question'
- Tools
  - Supportive and Palliative Care Indicators Tool (SPICT)
  - Prognostic Indicator Guidance (PIG)

## Issues

- Developed overseas
- Feasibility and acceptability of these tools not evaluated in Australian general practice
- Unclear whether these tools offer advantage over clinical acumen of the GP

# Aims

Evaluate the positive predictive value (PPV) of:

- GP's clinical acumen in predicting patient death
- Clinical prediction tool in predicting patient death

Hypotheses:

1. GPs can predict most deaths in their patients that will occur as a result of diseases with a predictable palliative phase
2. A clinical prediction tool will help GPs better identify those who will die compared to clinical acumen alone

# Method

- Cluster RCT design

## Inclusion criteria

- GPs working in Sydney or Brisbane

## Exclusion criteria

- worked <12 months in the practice
- not seeing patients > 70 years of age
- no computerised patient records

## Patient recruitment - seek record review of patients with the following

- Patient of participating GPs
- $\geq 70$  years of age
- Seen at least once by the GP in the preceding 2 years
- Also patients  $< 70$  years of age could be nominated by their GP to be included in the study if considered at risk of death

## Randomisation

- GPs randomised using computer generated random number sequence
- Stratified according to years of clinical experience ( $\leq 10$  or  $> 10$ )



## Intervention

- Modified Supportive and Palliative Care Indicators Tool (SPICT) to identify patients at risk of death in the next 12 months

## Control

- Asked to use clinical acumen to predict patients likely to die in the next 12 months



# Supportive and Palliative Care Indicators Tool (SPIC<sup>TM</sup>)



The SPIC<sup>TM</sup> is a guide to identifying people at risk of dying within the next 12 months.

## Look for two or more general indicators of deteriorating health.

- Performance status poor or deteriorating, with limited reversibility. (needs help with personal care, in bed or chair for 50% or more of the day).
- Two or more unplanned hospital admissions in the past 6 months.
- Weight loss (5 - 10%) over the past 3 - 6 months and/or body mass index < 20.
- Persistent, troublesome symptoms despite optimal treatment of any underlying condition(s).
- Lives in a nursing care home or NHS continuing care unit, or needs care to remain at home.
- Patient requests supportive and palliative care, or treatment withdrawal.

## Look for any clinical indicators of advanced conditions

### Cancer

Functional ability deteriorating due to progressive metastatic cancer.

Too frail for oncology treatment or treatment is for symptom control.

### Dementia/ frailty

Unable to dress, walk or eat without help.

Eating less; difficulty maintaining nutrition.

Urinary and faecal incontinence.

Unable to communicate meaningfully; little social interaction.

Fractured femur; multiple falls.

Recurrent febrile episodes or infections; aspiration pneumonia.

### Neurological disease

Progressive deterioration in physical and/or cognitive function despite optimal therapy.

Speech problems with increasing difficulty communicating and/or progressive dysphagia.

Recurrent aspiration pneumonia; breathless or respiratory failure.

### Heart/ vascular disease

NYHA Class III/IV heart failure, or extensive coronary artery disease:

- breathlessness or chest pain at rest or on minimal exertion.

Severe, inoperable peripheral vascular disease.

### Respiratory disease

Severe chronic obstructive pulmonary disease or severe pulmonary fibrosis

- breathless at rest or on minimal exertion between exacerbations.

Needs long term oxygen therapy.

Has needed ventilation for respiratory failure.

### Kidney disease

Stage 4 or 5 chronic kidney disease (eGFR < 30ml/min) with deteriorating health.

Kidney failure due to another life limiting condition or its treatment.

Stopping dialysis.

### Liver disease

Advanced cirrhosis with one or more complications in past year:

- diuretic resistant ascites
- hepatic encephalopathy
- hepatorenal syndrome
- bacterial peritonitis
- recurrent variceal bleeds

Liver transplant is contraindicated.

## Assess and plan supportive & palliative care

- Review current treatment and medication so the patient receives optimal care.
- Consider referral for specialist assessment if symptoms or needs are complex and difficult to manage.
- Agree current and future care goals/ plan with the patient and family.
- Plan ahead if the patient is at risk of loss of capacity.
- Handover: care plan, agreed levels of intervention, CPR status.
- Coordinate care using the GP/ primary care register.

SPIC<sup>TM</sup>, July 2012



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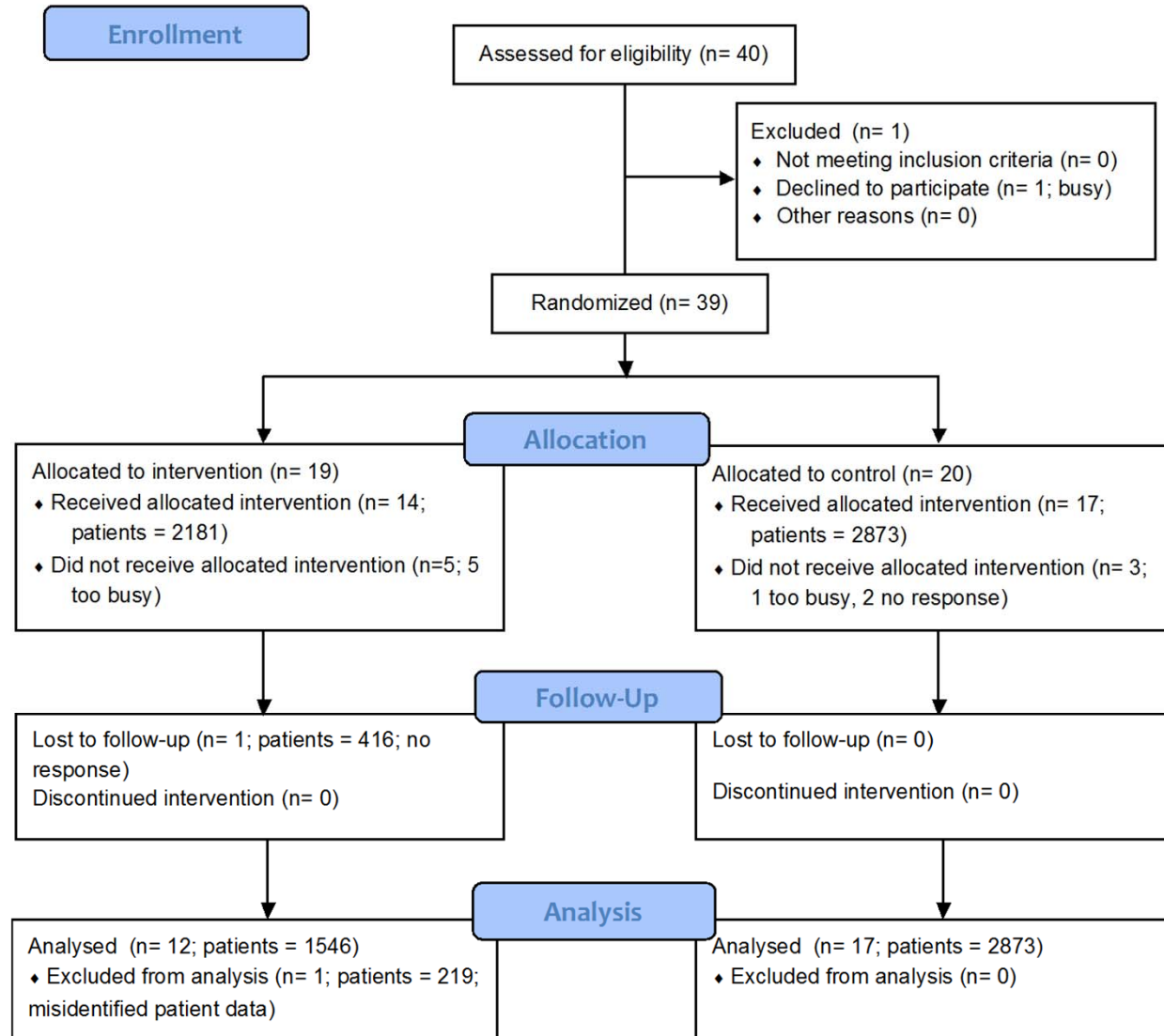
# Ethics

- Approval from the UNSW and UQ Human Research Ethics Committees

# Trial registration

- ANZCTR 363803

# Results



### Control (practice data)

	Deceased	Not deceased	
Identified as at risk	27	130	157
Not identified	38	2678	2716
	65	2808	2873

PPV 17%  
NPV 99%  
Sensitivity 42%  
Specificity 95%

### Intervention (practice data)

	Deceased	Not deceased	
Identified as at risk	31	199	230
Not identified	13	1303	1316
	44	1502	1546

PPV 13%  
NPV 99%  
Sensitivity 70%  
Specificity 87%

## Data from the NSW Death Registry

- Of 15 practice recorded deaths
  - 10 confirmed as deaths during study period
  - 5 not recorded as deaths by the registry
- Of 45 deaths recorded by death registry
  - 20 were during the study period
  - 10 (half) were recorded by the practice
  - 25 were before the study period

# Discussion

## Low PPV

- A lot of false positives (NB: 6 months data only)
- 17% control, 13% modified SPICT
- Baseline death rate = 2-3%

## Very high NPV

- 99% control & intervention
- If the doctor or the tool does not think you will die then you are unlikely to!

## Problem with data quality

- Many deaths not recorded in GP database
- Deaths not reflected in the registry
- Some patients see more than one GP

# Limitations

- 6 months vs 12 months
- Issues with practice database software
  - Use of PEN CAT or similar may address problem
- Delays in completing forms
- Time-intensive