Te Whatu Ora
Health New Zealand
Capital, Coast and Hutt Valley

Comprehensive, High-RIsk Surgical Patient assessment

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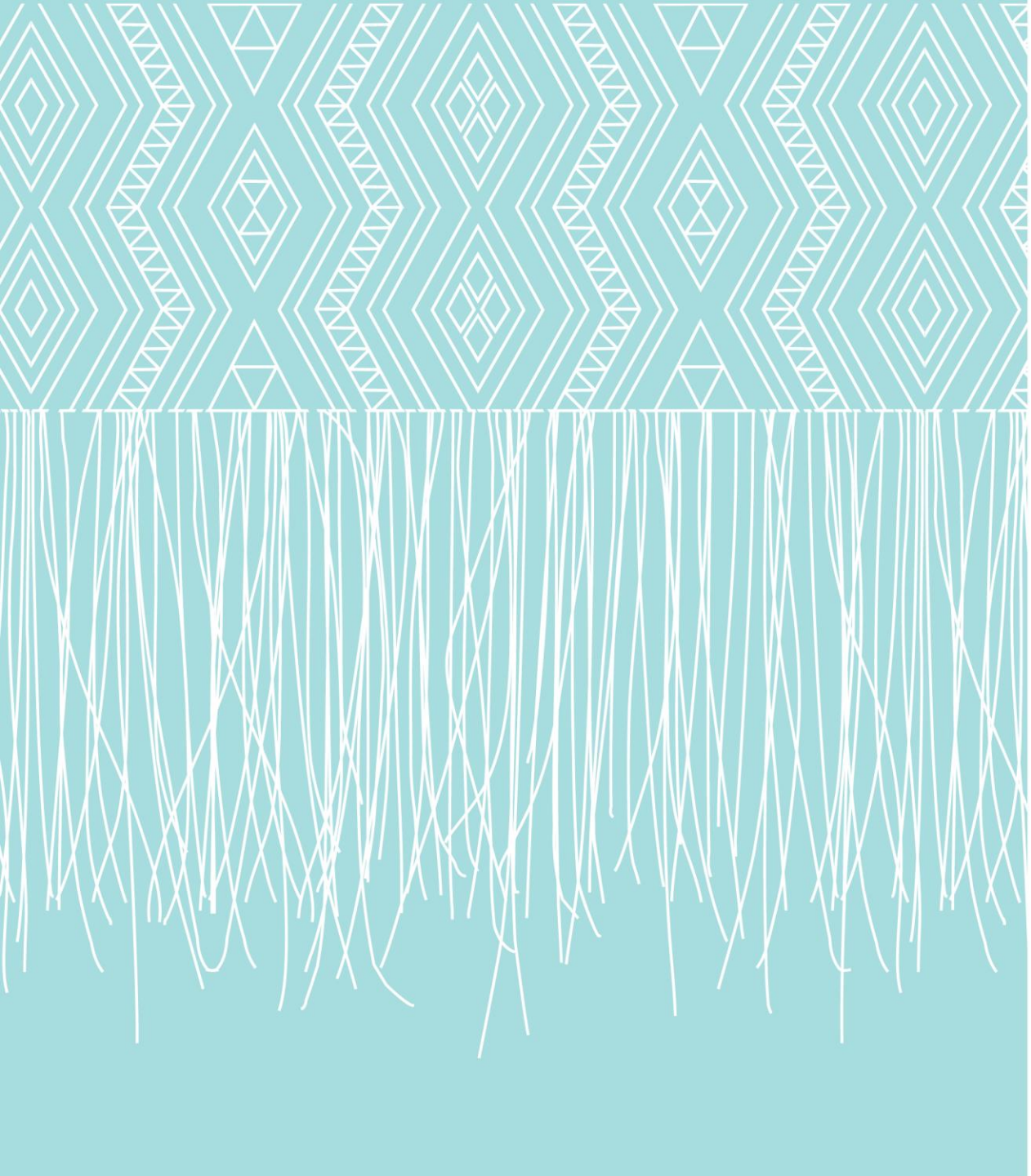
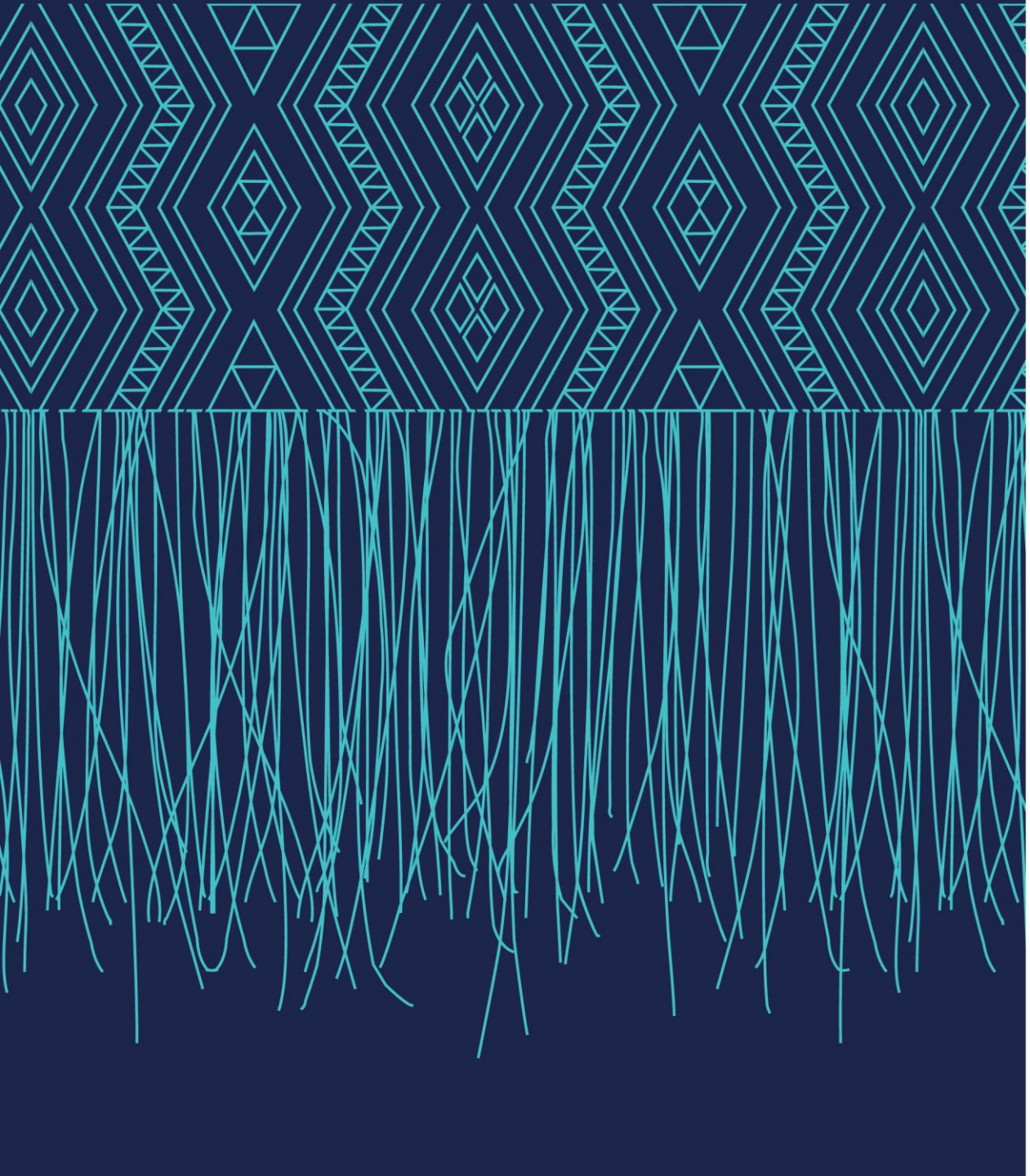
Agenda

1. What's the problem?
2. Evidence for collaborative perioperative care
3. A simple idea…
4. What we do in the CHRISP clinic
5. 3 things to reduce your patients' perioperative risk



So… what IS the problem??



Surgical patients are older, more co-morbid and take more drugs than ever before in the history of surgery[1]

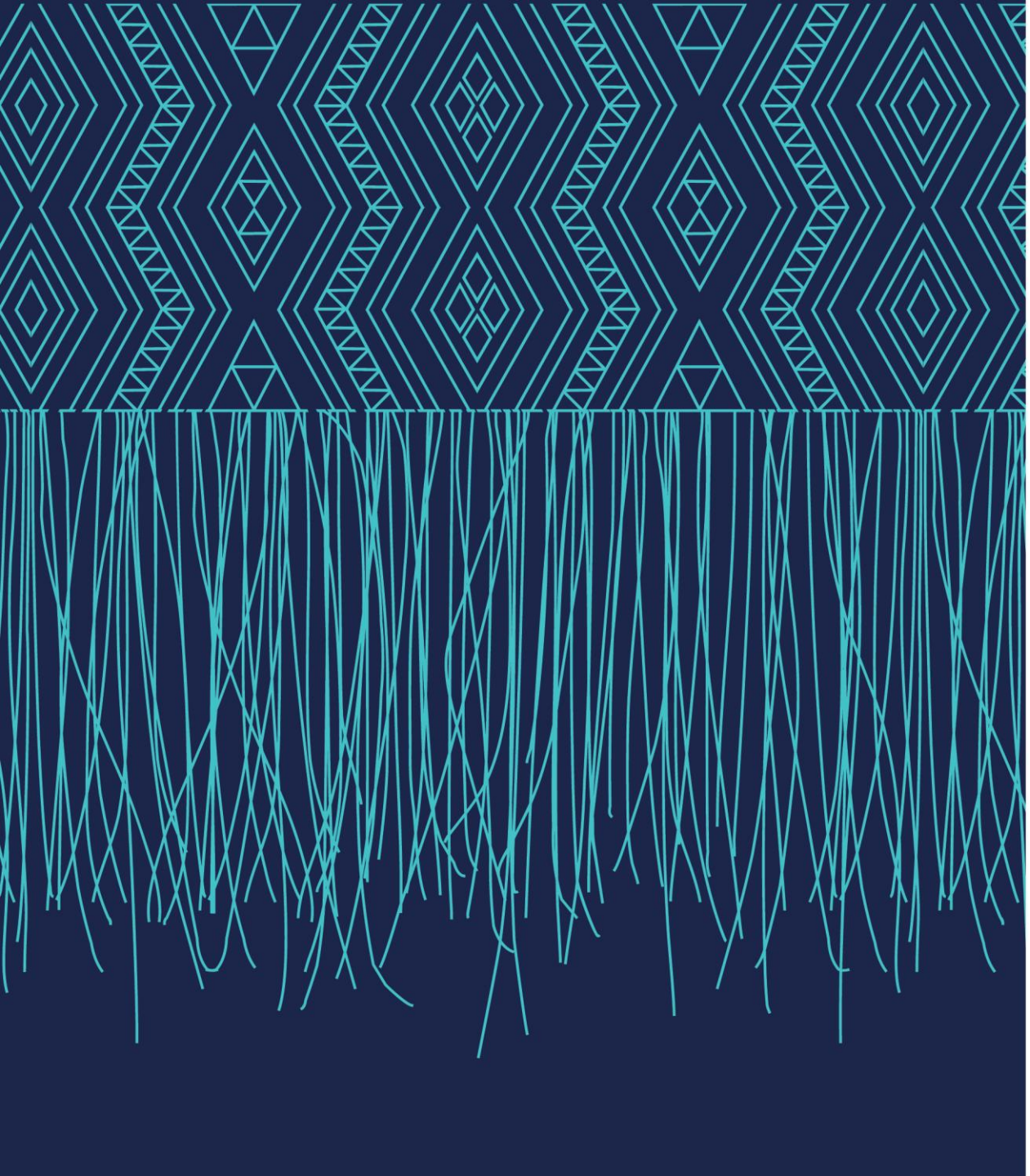
“They’re not fit for anaesthesia…”

With appropriate care and knowledge, we can anaesthetize anyone with a pulse (and even some without)...

What we ACTUALLY mean is that the patient’s cardiorespiratory reserve isn’t sufficient for them to survive the trauma of surgery

Anaesthesia related mortality is ~ 1:200,000

Elective 30-day surgical mortality is 1000 X greater than this

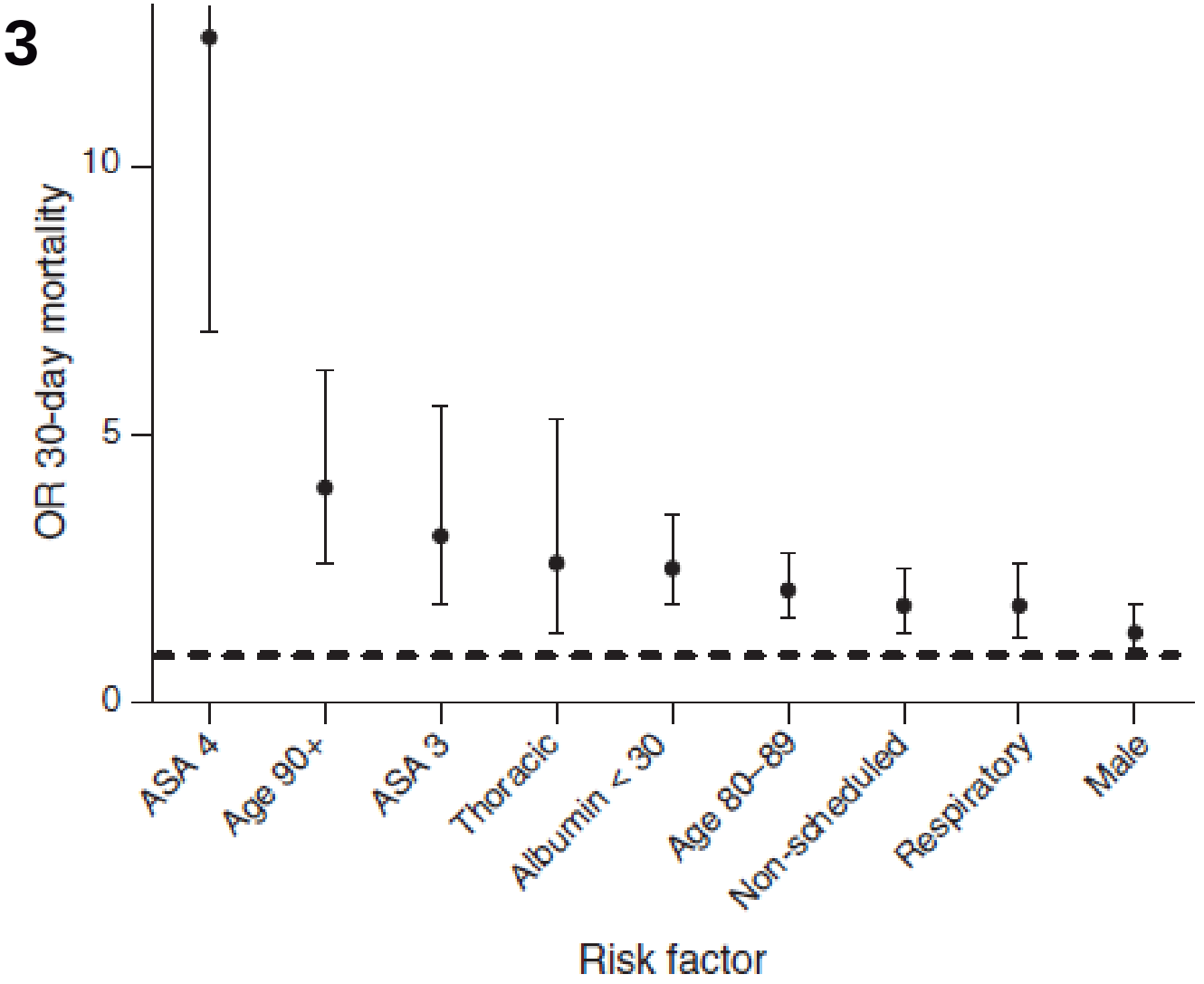


4.2 million people worldwide die within 30 days of surgery each year[2]

Who is at risk?[3]

- Around 10% of surgical patients account for 80% of major perioperative morbidity and mortality with > 65 year olds accounting for most of this group

- In Australasia, patients over 70 having elective non-cardiac surgery, with ≧ 1 night in hospital:
  - 20% suffered significant postop complication within 5 days
  - 10% required ICU
  - 5% dead at 30 days



Further defining the problem

The modern surgeon is spread thin, often with multiple competing priorities across multiple locations on any given day

Some patients have multiple co-morbidity for which surgical optimization requires consultation across multiple specialties

For many older adults, frailty is a more important predictor of surgical outcome than “traditional” co-morbidity

Many surgeries carry benefit that is only realised IF the patient lives long enough

Patients are individuals – an acceptable outcome for one person may be completely unacceptable for another

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

- Age related physiological decline, but highly variable
- Increased vulnerability, reduced resilience and reserve in face of stressors , "homeostenosis".
- Try not to understimate psychological and social frailty/resilience

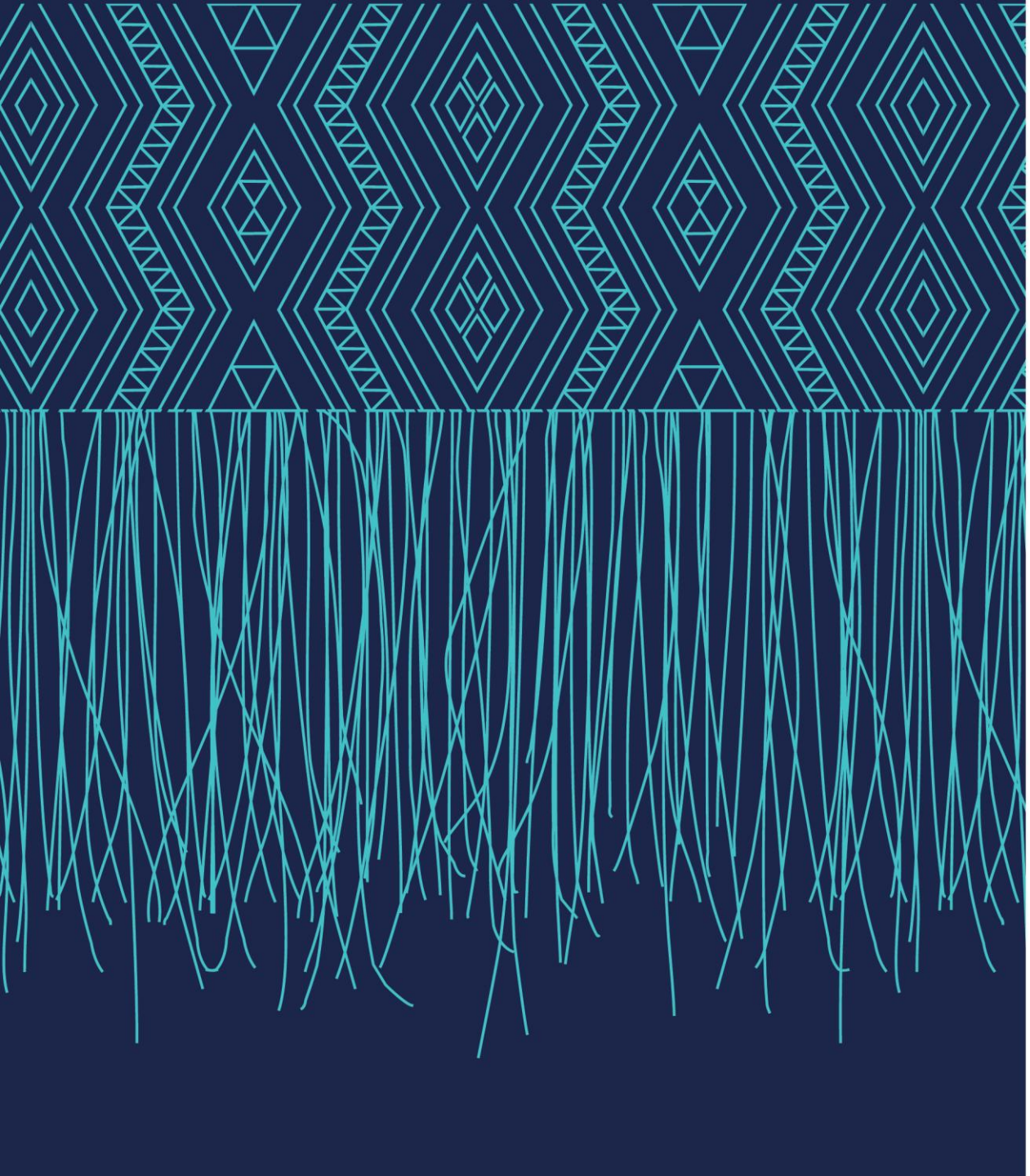
The role of cognition

Many subtle features of cognitive decline can be compensated for

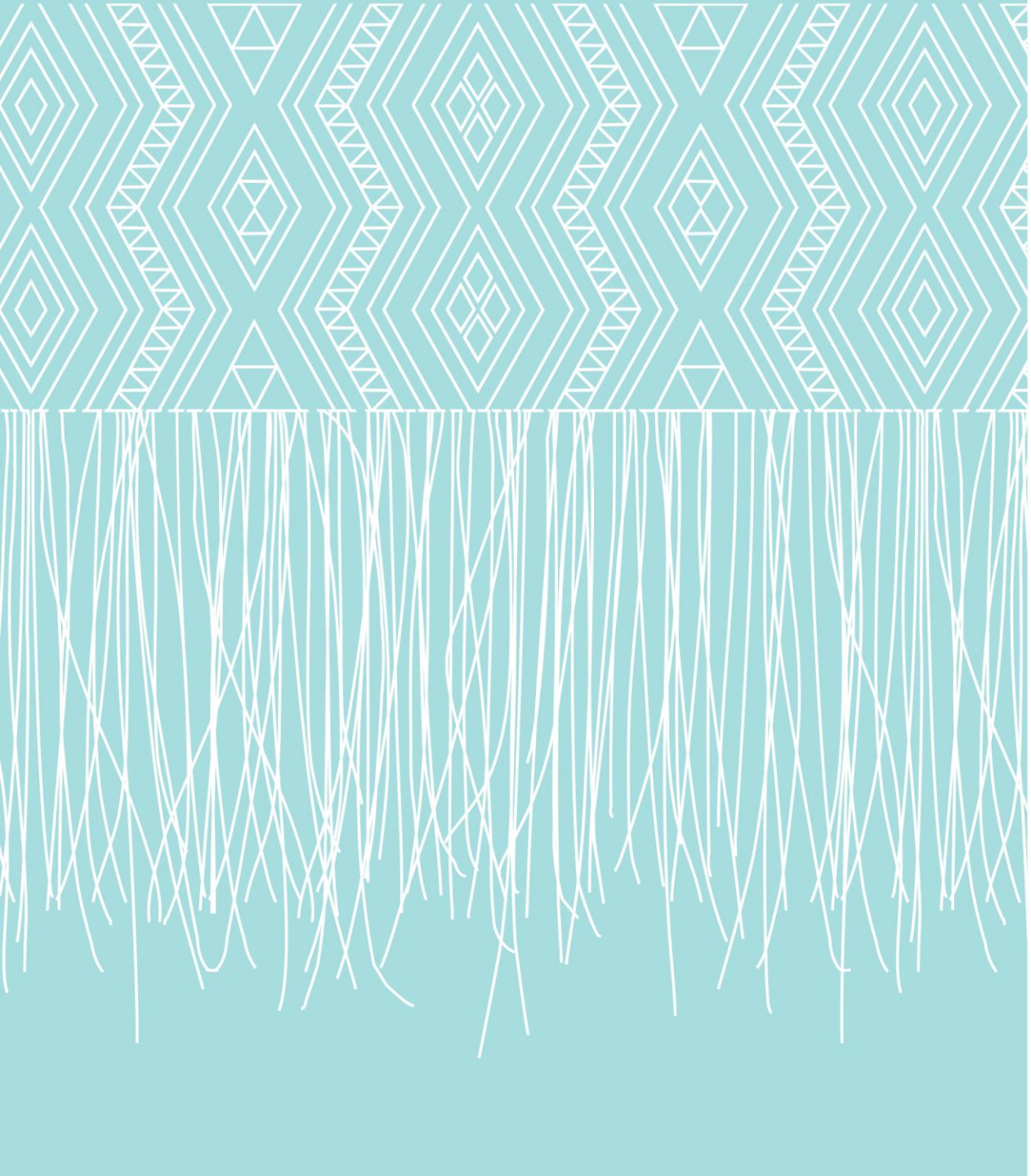
Cognitive decline is not uniform, and different faculties can decline at different rates

Frailty and cognitive impairment are strongly associated with:

- Major complications
- Prolonged hospital stay
- Failure to discharge home
- Failure to rescue from complications
- New disability and death



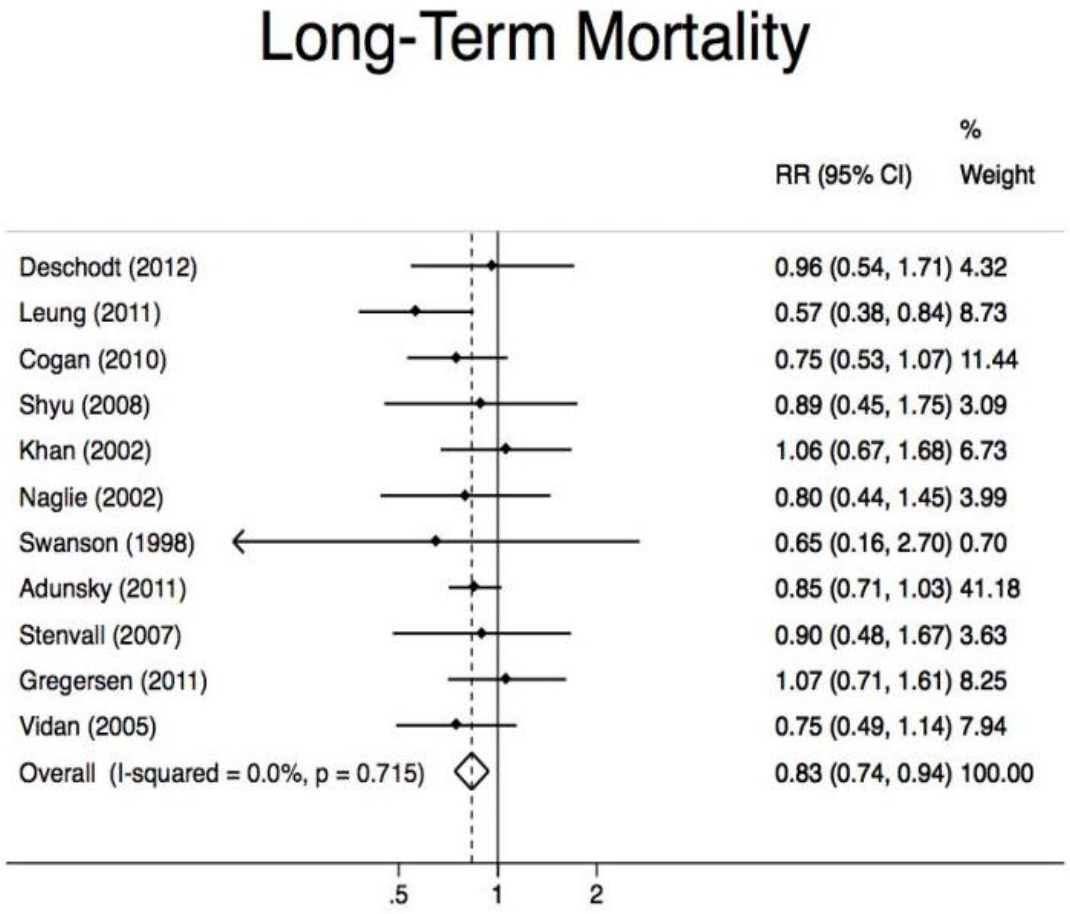
Comprehensive multi-disciplinary care reduces mortality, length of stay, loss of function/morbidity and IS cost effective



The evidence for collaborative perioperative care

The role of ortho-geriatricians[4]

- Meta-analysis involving 9,094 patients
- Advantages of collaborative care:
  - Reduced in-hospital mortality (RR 0.6)
  - Reduced long term mortality (RR 0.83)
  - Reduced length of stay (SMD -0.25)



Assessment ahead of complex orthopaedic surgery[5]

- Before and after study assessing the role of a comprehensive pre-assessment service for patients undergoing major arthroplasty surgery in an NHS hospital

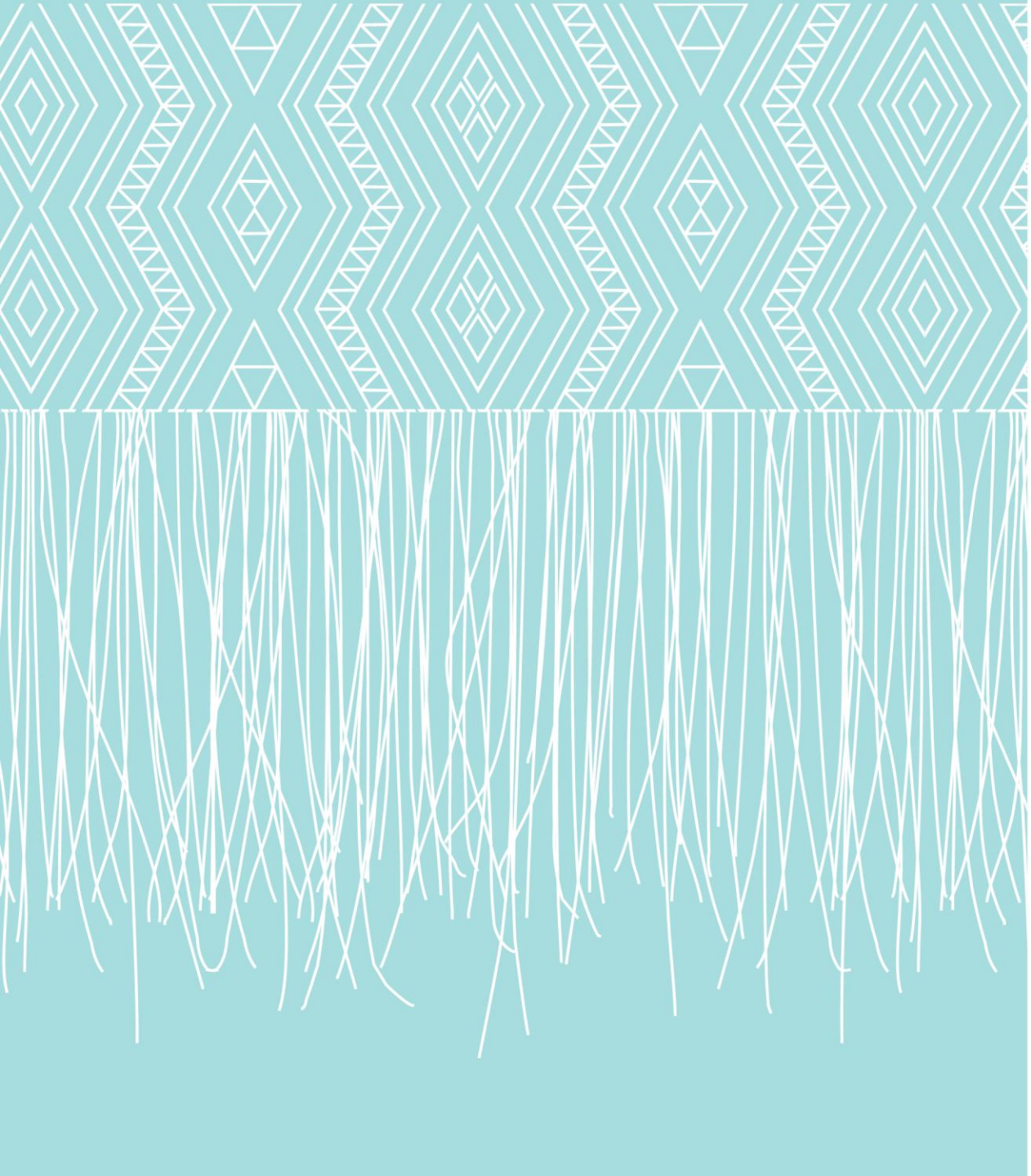
- Advantages of comprehensive pre-assessment:
  - Reduced mortality (6.1% down to 1.2%)
  - Reduced unplanned ICU admission (1.3% down to 0.4%)
  - Reduced HDU and ICU length of stay when required
  - Significant cost saving

Impact of comprehensive Geriatrician assessment on surgical outcomes[6]

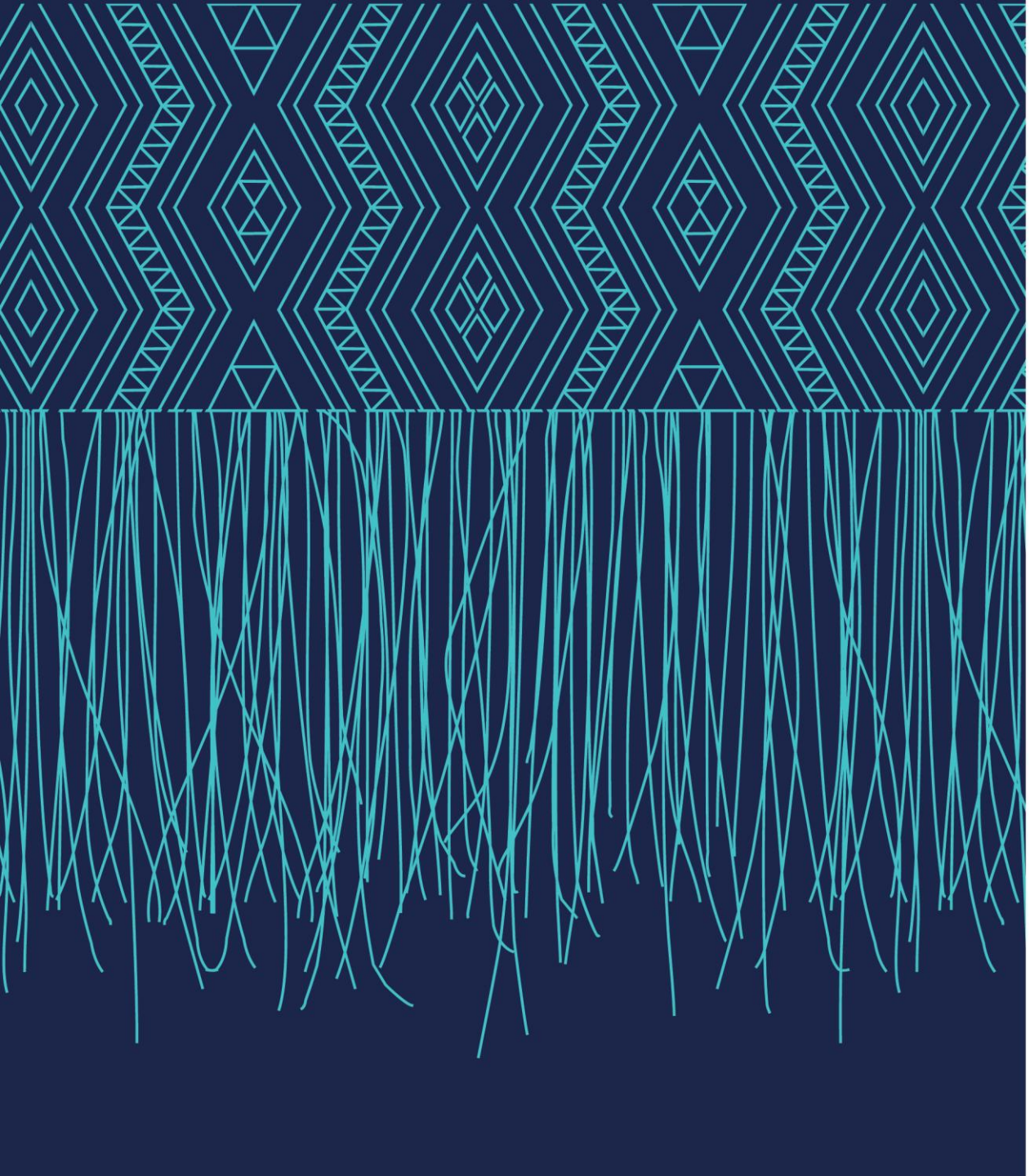
- Meta-analysis, but significant study heterogeneity
- Included general surgical, urological, orthopaedic, gynaecological, vascular and neurosurgical patients
- Potential advantages of comprehensive assessment included:
  - Reduced cancellations and delays to surgery
  - Reduced hospital length of stay
  - Reduced postoperative complications

Comprehensive geriatrician assessment for major vascular surgery[7]

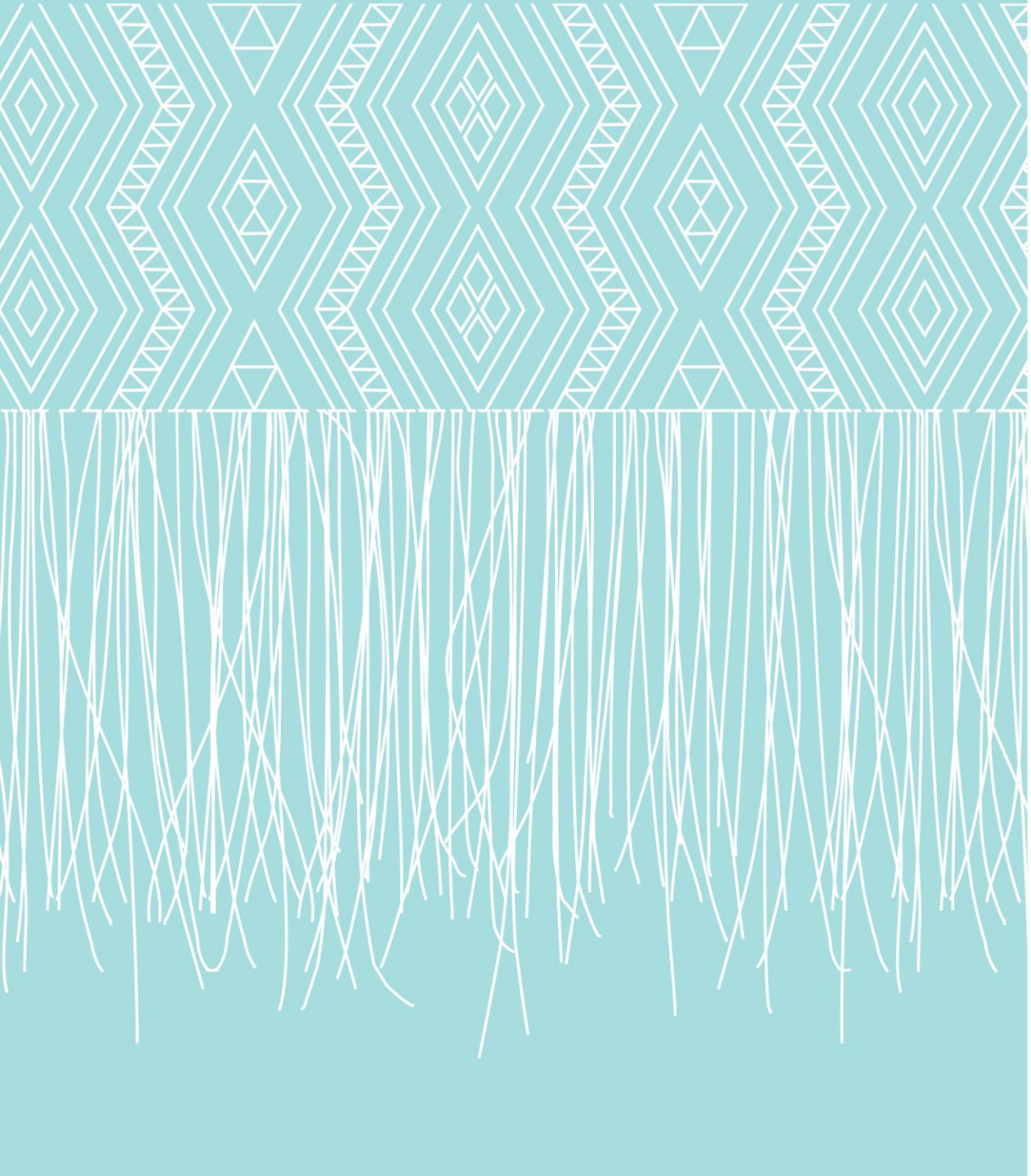
- 176 patients > 65 years of age undergoing AAA or lower limb arterial procedures randomized to standard preop assessment or comprehensive geriatrician assessment
- The primary outcome of hospital length of stay was lower in the intervention group (3.32 days vs 5.53 days)
- Several secondary outcomes also favoured the intervention:
  - Lower incidence of delirium (11% vs 24%)
  - Fewer cardiac complications (8% vs 27%)
  - Fewer bowel and bladder complications (33% vs 55%)
  - Lower likelihood of discharge to a higher level of care (5% vs 13%)



So, we had a simple idea…



What if we started a pre-assessment clinic that included comprehensive geriatrician assessment, with a focus on shared-decision making?



Cue, the CHRISP clinic

Humble beginnings

Group of dedicated nurses, anaesthetists and Katie wanting to provide the best possible outcomes for patients being considered for surgery

Strong focus on helping the patient and their family make the right decision FOR THEM

After a trial period, the team presented the initiative to our “choosing wisely” group

Business case made and funding received!

Patient selection and assessment

- Patient-centred, nurse led clinic, now with anaesthesia SMO support each morning
- High risk patients identified at first specialist appointment and referred:
  - > 65 year olds having high risk surgery (> 55 years for Maori and Pacifika)
  - Patients with one of more of frailty, comorbidity/polypharmacy, cognition, ambilvalence or complex social/cultural needs
- Patients attend, ideally with a support person and have a multi-dimensional assessment
  - Medical assessment and medication review (may include objective cardiorespiratory assessment)
  - Frailty assessment
  - Cognitive assessment
  - Assessment of social and cultural factors

Risk assessment

About

Prior to surgery, patients and clinicians decide whether to proceed, partly determined by the balance of risk and benefits. In addition to clinical assessment, risk assessment tools can help to inform these decisions.

nzRISK has been developed to be a simple and easy to use risk calculator based on the New Zealand population. It has been compiled using data from over 270,000 patients aged 18 or over undergoing non-cardiac surgery. It includes eight risk factors that can be entered below to give a 30 day, one and two year estimate of mortality. Each risk factor is associated with mortality and improves the performance of the calculator.

For more information see the publication in the British Journal of Surgery. The nzRISK tool is available on this website for personal use only.

Development

This work was developed by clinicians at Auckland City Hospital, through the Precision Driven Health research partnership with the support of the Perioperative Mortality Review Committee, Ministry of Health, New Zealand.

Calculate

Mortality
34.7% at 30 days
75.2% at 1 year
82.9% at 2 years

In the next 30 days mortality would be expected in **34.7** of every 100 similar people having this procedure, as shown in the right-hand graphic. At one year death would be expected in 75.2 of every 100 similar people having this procedure, rising to 82.9 at two years.

New Calculation

Contact

Contact Us

ACS NSQIP® | **Surgical Risk Calculator** | American College of Surgeons

Procedure: 43620 - Gastrectomy, total, with esophagoenterostomy
Risk Factors: 75-84 years, Partially dependent functional status, ASA Severe systemic disease, Diabetes (Oral), HTN, Class2 Obese

Outcomes	Your Risk	Average Risk	Chance of Outcome
Serious Complication	44.5%	30.9%	Above Average
Any Complication	48.7%	33.2%	Above Average
Pneumonia	11.9%	7.9%	Above Average
Cardiac Complication	2.8%	1.4%	Above Average
Surgical Site Infection	16.0%	10.8%	Above Average
Urinary Tract Infection	10.0%	3.0%	Above Average
Venous Thromboembolism	2.4%	1.5%	Above Average
Renal Failure	2.3%	1.1%	Above Average
Readmission	13.8%	8.9%	Above Average
Return to OR	12.6%	10.1%	Above Average
Death	5.0%	1.9%	Above Average
Discharge to Nursing or Rehab Facility	63.0%	0.9%	Above Average

Predicted Length of Hospital Stay: 15 days

Appropriate Potential Non-operative Treatment Options Are Available and Should Be Discussed

How to Interpret the Graph Above:

Disclaimer: The ACS Surgical Risk Calculator estimates the chance of an unfavorable outcome (such as a complication or death) after surgery. The risk is estimated based upon information the patient gives to the healthcare provider about prior health history. The estimates are calculated using data from a large number of patients who had a surgical procedure similar to the one the patient may have. Please note the risk percentages provided to you by the Surgical Risk Calculator are only estimates. The risk estimate only takes certain information into account. There may be other factors that are not included in the estimate which may increase or decrease the risk of a complication or death. These estimates are not a guarantee of results. A complication after surgery may happen even if the risk is low. This information is not intended to replace the advice of a doctor or healthcare provider about the diagnosis, treatment, or potential outcomes. ACS is not responsible for medical decisions that may be made based on the risk calculator estimates, since these estimates are provided for informational purposes. Patients should always consult their doctor or other health care provider before deciding on a treatment plan.

Definitions

Serious Complication includes important problems that occur after surgery including:
- Heart complication: Includes heart attack or sudden stopping of the heart
- Pneumonia: Infection in the lungs
- Kidney failure: Kidneys no longer function in making urine and/or clearing the blood of toxins
- Blood clot: Clot in the legs or lungs
- Return to the OR: The need to go back to the operating room due to a problem after the prior surgery
- Wound infection: An infection at or near the area where the surgery was performed
- Sepsis: Whole-body infection
- Intubation: The need to put the breathing tube back in after surgery to help breathing

Serious Complication (Continued):
- Urinary tract infection: Infection of the bladder and kidneys
- Wound disruption: Separation of the layers of a surgical wound

Any Complication also includes:
- Wound infection: An infection at or near the incision
- Extended time on the ventilator: Ventilator assistance for breathing longer than 48 hours
- Stroke: An interruption in blood flow to the brain

Discharge to Nursing or Rehab facility: Discharge to a facility other than home

Shared-decision making

- What are the possible outcomes if you have surgery?
- What are the possible outcomes if you DON’T have surgery?
- What are the less invasive options and how might they impact your quality and/or length of life?
- If things didn’t go the way you’d like, who would you want to manage your affairs and to act as your advocate?

- What are your goals and what constitutes an acceptable outcome for **you**?

What we've found so far

- Strengthening of inter-professional relationships
- Unveiling a lot of mild cognitive impairment
- Opportunities to reduce polypharmacy and pre-optimize co-morbidity
- Simple interventions to optimize physical condition and nutrition ahead of surgery
- Approximately a third of patients decide not to have surgery or to have a less invasive option
- At follow up many of the patients we see who choose not to have surgery die from illnesses unrelated to their surgical problem
- Ongoing data collection with a plan to assess "decision regret"

That’s all very well, but we don’t have this service in my hospital (yet), so what can I do in my busy clinic?

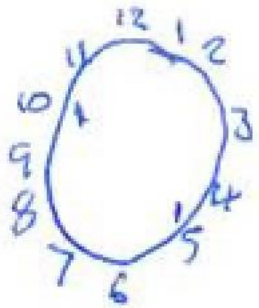
Three top tips from Dr Katie Thorne

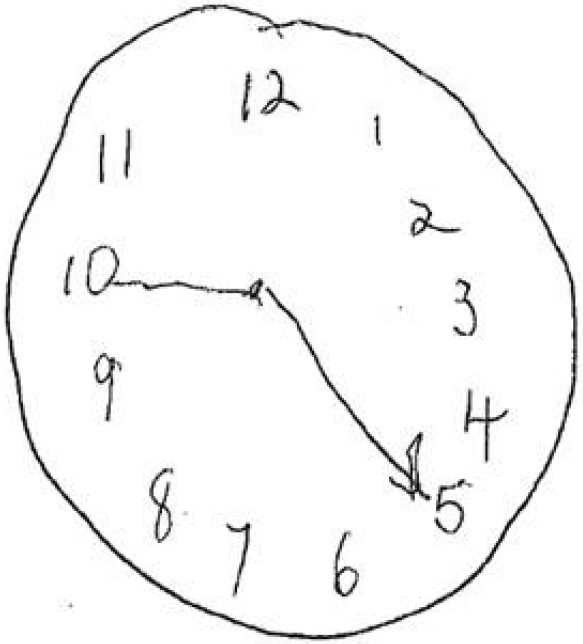
Top tip 1

Listen as much as you talk, and check at the end of the consultation what the patient has understood

Top tip 2

If you're not sure about cognition, get the patient to draw a clock





Top tip 3

It’s an opportunity to make positive choices and to encourage prehabilitation, so think about nutrition, strength and balance, and advanced planning like appointment of an EPOA

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Questions?