Evidence for the value of allied health

Professor Kathryn Refshauge
Proportion of health expenditure, by source of funds and area of expenditure, 2015–16

[Bar chart showing the proportion of health expenditure by source of funds and area of expenditure. The chart includes areas such as Benefit-paid pharmaceuticals (a), Unreferred medical services, Research, Referred medical services, Administration, Public health, Public hospital services, Other health practitioners, Private hospitals, Aids and appliances, Dental services, Community health and other, Patient transport services, and All other medications.]
Demonstrating the Value of Allied Health Care in SA Health

Quantifying the inputs and outputs of Allied Health interventions to determine overall value to the healthcare system. (Feb 2015)

Office of Professional Leadership

A review of allied health workforce models and structures

A report to the Victorian Ministerial Advisory Committee for Allied Health

Prepared by:
- Prof James Buchan, Consultant
- Ms Deborah Law, Consultant

A realist review of allied health management in Queensland Health: what works, in which contexts and why

Jessica Dawber, Natasha Crow, Julie Hulcombe & Sharon Mickan

July 2017
Why do we need evidence of our value?

– Persuade institutions NOT to cut allied health first in tight budgetary conditions
– Persuade institutions to increase staff
– Increase facilities
– Commence new services
– Convince insurance companies, MBS etc to include adequate allied health
Data and types of evidence to prove our value

Level I: Meta-analysis and systematic reviews from RCTs
   – + cost effectiveness analysis
   – + impact

Level II: RCTs – including new directions

Levels III-VI: Studies using non RCT methods

Level VII: Clinical data, wisdom and observations
## Strong recommendations for the intervention

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Recommendation</th>
<th>Strength of recommendation</th>
<th>Quality of evidence</th>
</tr>
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<tbody>
<tr>
<td><strong>Land-based exercise – Knee</strong></td>
<td>We strongly recommend offering land-based exercise for all people with knee OA to improve pain and function, regardless of their age, structural disease severity, functional status or pain levels. Exercise has also been found to be beneficial for other comorbidities and overall health. We strongly recommend walking, muscle-strengthening exercise, and specifically, Tai Chi. Clinicians should prescribe an individualised exercise program, taking into account the person's preference, capability, and the availability of resources and local facilities. Realistic goals should be set. Dosage should be progressed with full consideration given to the frequency, duration and intensity of exercise sessions, number of sessions, and the period over which sessions should occur. Attention should be paid to strategies to optimise adherence. Referral to an exercise professional to assist with exercise prescription and provide supervision either in person or remotely may be appropriate for some people.</td>
<td>Strong for recommendation (all land-based exercise, walking, muscle-strengthening exercise, Tai Chi)</td>
<td>Low (all land-based, Tai Chi) Very low (walking, muscle-strengthening exercise)</td>
</tr>
<tr>
<td><strong>Land-based exercise – Hip</strong></td>
<td>We strongly recommend offering land-based exercise for all people with hip OA to improve pain and function, regardless of their age, structural disease severity, functional status or pain levels. Exercise has also been found to be beneficial for other comorbidities and overall health. The type of exercise that is most beneficial is not yet known. Clinicians should prescribe an individualised progressive exercise program, taking into account the person's preference, capability and the availability of local facilities. Realistic goals should be set. Dosage should be progressed with full consideration given to the frequency, duration and intensity of exercise sessions, number of sessions, and the period over which sessions should occur. The clinician should monitor the person's response to the exercise program, and could try a different form of land-based exercise if improvements are not evident. Attention should be paid to strategies to optimise adherence. Referral to an exercise professional to assist with exercise prescription and provide supervision either in person or remotely may be useful for some people.</td>
<td>Strong for recommendation (when combining all studies of land-based exercise)</td>
<td>Moderate (land-based)</td>
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<td><strong>Weight management – Knee and/ or hip</strong></td>
<td>We strongly recommend weight management for people with knee and/or hip OA. For those who are overweight (BMI ≥25 kg/m²) or obese (BMI ≥30 kg/m²), a minimum weight loss target of 5–7.5% of body weight is recommended. It is beneficial to achieve a greater amount of weight loss given that a relationship</td>
<td>Strong for recommendation</td>
<td>Very low</td>
</tr>
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</table>

## OA knee and hip

### Strong recommendations for the intervention

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Systematic reviews + RCT + impact:

Pulmonary rehabilitation

Patient Reasons

- Improves quality of life
- Increases functional capacity
- Keep well and out of hospital

(all Level 1 evidence: Cochrane Reviews)

Health Budget reasons

- Reduces hospitalisations (Level 1 evidence)
- Reduces inpatient bed days
- Reduces mortality if commenced after a hospitalisation (Level 1 evidence)
- Reduces healthcare costs (Level 2 evidence)

Jenny Alison et al 2015
Acute episode of COPD

Public

$4,500
4.5 days

Private

$7,700
7.7 days

AIHW 2012
Pulmonary Rehabilitation: Cost Effective Solution

Pulmonary Rehab
≈ $550
16 visits

Public
$4,500
4.5 days

Alison et al 2015
Post Hospitalisation for COPD
- If attend Pulmonary Rehab = 16% readmission
- If do not attend Pulmonary Rehab = 40% readmission
- NNT 4 to avoid 1 hospital admission
- Saving $2,380 (public) - $5,580 (private)

Cochrane Review of RCTs

Stable COPD:
- NNT 6 to avoid 1 hospital admission
- Saving $1,320 (public) - $4,520 (private)

Alison et al 2015
“MSAC considered that PR programs may best be offered under the existing MBS items for chronic disease management (CDM). As a complex intervention combining exercise and psychological aspects, PR may be similar to cardiac rehabilitation programs or back pain management programs, where it is not always known which components of the package are the most effective. CDM items allow access to a range of allied health providers, capped at 5 visits per calendar year. MSAC noted that including PR in CDM items would result in no net cost to government.”
RCTs + cost effectiveness + impact
Falls prevention

✓ Total dose of exercise – 50 hours minimum
✓ High level balance work
✓ Strength work for those who are deconditioned
  (2-3 sets, 10-15 reps)
✓ All exercises individually upgraded – progressed
✓ Close supervision – to allow for safe inclusion of high level balance work
✓ Maintenance program continued after initial conditioning phase
✓ Walking program (while beneficial for other health conditions) should not be considered a falls prevention program

Sherrington et al 2011, Tiedeman et al 2011
Number of falls
(N = 221, mean age 85 y.o.)

<table>
<thead>
<tr>
<th></th>
<th># falls</th>
<th>Falls rate</th>
<th>Cost-effectiveness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual care baseline</td>
<td>277</td>
<td>2.56</td>
<td>$670 per fall avoided</td>
</tr>
<tr>
<td>Usual care 12m follow-up</td>
<td>143</td>
<td>1.26</td>
<td>Estimated cost benefit = $120M</td>
</tr>
<tr>
<td>Intervention baseline</td>
<td>189</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention 12m follow-up</td>
<td>114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hewitt et al 2018

Hewitt et al 2019
Impact: Quality of life, independence, funding

Included in Revised Aged Care Funding Instrument
July 2020

Hewitt et al 2018
RCTs: Effective treatments are not necessarily put into practice

- ~560,000 new articles published each year
- 20,000 new RCTs registered each year.
  - i.e. 1500 new articles per day
  - 55 new trials per day
- A review of 80 studies of clinically important AND effective treatments found that clinicians could put the intervention into practice in only half of cases (Glasziou *BMJ* 2010)
- Worldwide >US$100 billion p.a. invested in research
- >66% invested in basic science research (in UK)
- <10% on evaluation of treatments
Clinical observation

Lymphoedema-related cellulitis treatment

Admissions prior to lymphoedema intervention

Individuals referred for management of lymphoedema post-cellulitis (January-July 2014)

N=44

Admissions following lymphoedema intervention

The same individuals following lymphoedema treatment reviewed July 2016

N=3

The University of Sydney
Clinical observation: Early intervention

- Speech disorder
- Learning difficulty
- Bullying – mental health problems – leave school
- Incarceration
The longevity gap

Expected length of life at birth, by sex, Australia 1901-10 to 2004-06

Sources: ABS Cat No. 3302.0; ABS Cat. No. 3105.0.65.001 (green line); the age of death in schizophrenia imputed from literature (ibid)
Trends in CVD mortality rates

†Controlling for age at first diagnosis & years of follow-up.
‡Standardized by gender & age distribution of the patients.

### ENROUTE

<table>
<thead>
<tr>
<th>Car</th>
<th>Incident</th>
<th>Destination</th>
<th>Distance</th>
<th>ETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1339</td>
<td>10661</td>
<td>Blacktown</td>
<td>2.3 km</td>
<td>2 mins</td>
</tr>
<tr>
<td>1333</td>
<td>10919</td>
<td>Blacktown</td>
<td>&lt;1 km</td>
<td>~2 mins</td>
</tr>
</tbody>
</table>

### ARRIVALS

<table>
<thead>
<tr>
<th>Car</th>
<th>Incident</th>
<th>Hospital</th>
<th>Waiting Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1162</td>
<td>11007</td>
<td>Blacktown</td>
<td>00:04:43</td>
</tr>
<tr>
<td>1348</td>
<td>11055</td>
<td>Westmead</td>
<td>00:09:50</td>
</tr>
<tr>
<td>1307</td>
<td>10970</td>
<td>Blacktown</td>
<td>00:12:27</td>
</tr>
<tr>
<td>1396</td>
<td>11003</td>
<td>Auburn</td>
<td>00:13:52</td>
</tr>
<tr>
<td>1311</td>
<td>10994</td>
<td>Blacktown</td>
<td>00:16:24</td>
</tr>
<tr>
<td>1364</td>
<td>10954</td>
<td>Westmead</td>
<td>00:32:13</td>
</tr>
<tr>
<td>1388</td>
<td>10980</td>
<td>Norwest Private</td>
<td>00:35:46</td>
</tr>
</tbody>
</table>

### MEDICAL BOOKINGS

Destination listed may only be indicative of nearest hospital.

### DELAYED AVAILABLE

<table>
<thead>
<tr>
<th>Car</th>
<th>Incident</th>
<th>Hospital</th>
<th>Elapsed Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1311</td>
<td>10994</td>
<td>Blacktown</td>
<td>00:00:43</td>
</tr>
<tr>
<td>1353</td>
<td>11000</td>
<td>Mount Druitt</td>
<td>00:03:00</td>
</tr>
<tr>
<td>1308</td>
<td>10951</td>
<td>Cumberland</td>
<td>00:11:18</td>
</tr>
</tbody>
</table>
Residents of aged care facilities

At any one time, up to 80% of ambulances are bringing residents of residential aged care facilities to hospital for “feeling unwell”
Value Proposition Canvas

Outcomes/value

Benefits

Features

Evidence

Experience

Company:
Product:
Ideal customer:

Consumer/patient

Wants

Fears

Needs

Substitutes

Based on the work of Steve Blank, Clayton Christensen, Seth Godin, Yves Pigneur and Alex Osterwalder. Released under creative commons license to encourage adoption and iteration. No rights asserted.
What can you do to forge the future?

- Know how to make and “pitch” a value proposition - DATA
- Collect data to objectively evaluate your work/demonstrate your value
- Have a vision and a strategic direction that will benefit the institution/patients/community
- Have a research perspective
- Have a voice
- Be a leader, whatever your role

- Argue for a Chief Allied Health Officer
Far better an approximate answer to the right question, than the exact answer to the wrong question, which can always be made precise....

Tukey J 1963