

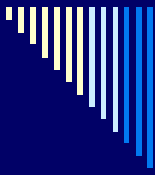
## Practical measures for evaluating outcomes: Australian Therapy Outcome Measures (AusTOMs)

- Jemma Skeat Evaluation and Analysis Coordinator
- Royal Children's Hospital, Melbourne
- Professor Alison Perry
- Professor Meg Morris
- Associate Professor Carolyn Unsworth

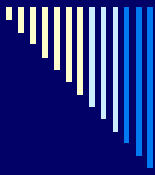
The project aims to develop a valid and reliable measure of therapy outcomes for the allied health disciplines of speech pathology, occupational therapy and physiotherapy, in the Australian context.

The AusTOMs project is being run at La Trobe University in Bundoora, with members of the Faculty of Health sciences as Chief investigators, including Prof Alison Perry from Human Communication sciences, Professor Meg Morris from the School of Physiotherapy, and Associate Professor Carolyn Unsworth from the School of Occupational therapy, and Prof Stephen Duckett from Public Health.

Co-investigators on the project include Dr Karen Dodd and Dr Nick Taylor from Physiotherapy, and myself from Human Communication sciences.



- 
- Background and development of the AusTOMs
  - How AusTOMs has been applied
  - Considerations when implementing outcome measures
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## Background and development

UK TOMs (Enderby)

Speech-Language Therapy

1992-1997

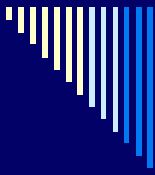
Physiotherapy and Occupational Therapy

1998

AusTOMs

2001-2003

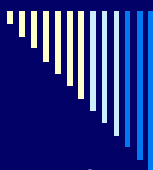
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## Background and development

- Funded by Commonwealth Department of Health and Ageing
  - Carried out at La Trobe University in Melbourne
  - Developed with input from clinicians across Australia
  - Study data from 14 health care sites across Victoria
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## Background and development

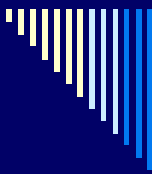
### 4 stage process

1. Examination of the UK TOM scales in the Australian clinical context.
2. Development of scale descriptors
3. Training clinicians in the use of the scales
4. Data collection and analysis

+ Dissemination and further development

Original project was the first 4 stages,

The final stage includes getting the scales ready for use in practice, and ongoing studies, not part of the original funding.

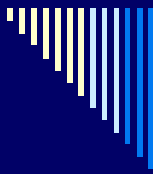


## What is an outcome measure?

### **Outcome measures tell us about**

- *“Patients’/clients levels of health, function, disability and quality of life after an episode of care. Outcome measures can provide an indication of the amount of recovery or decline in these variables” (Morris, 2005)*
- To measure **OUTCOME**, it is preferable to have an “initial” measure of performance, prior to commencement of the episode of care, and a “final” measure of performance at the end of the episode of care.

Start from a place of defining what we meant by an outcome measure, before we could create one!

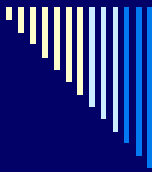


## What is needed from an allied health outcome measure?

- Reflect the goals of therapy
- Take into account the perspective of the patient
- Measure changes on more than just an impairment level
- Be easily communicated with other professionals.
- Contain good psychometric properties.
- Be quick and easy to administer.

Started from the perspective of developing a good allied health measure that addresses the needs of therapists, as well as managers.

In examining the literature and talking with clinicians, we decided that there were a few key areas that any new measure should address-

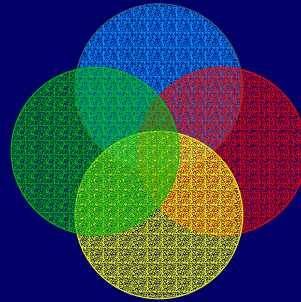


## TOMs CONSTRUCT:

Outcomes need to reflect goals of PT, OT, SP to:

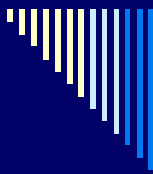
Improve, Remediate Impairment

Alleviate  
Emotional  
Distress



Extend  
Functional  
Performance

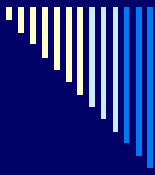
Improve Social Integration



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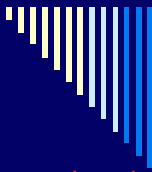
## Stage 1: Examining the UK TOM scales

- Update to ICF terminology
  - Update scale headings to reflect Australian context
  - Develop a 'core scale' to work from for all disciplines
    - Impairment, Activity limitation, Participation restriction, Wellbeing/Distress
    - Ordinal scale (0-5) where 0 = most severe, 5 = no difficulties.
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## Core AusTOMS Scale

- Impairment
- Activity Limitation
- Participation Restriction
- Well-being, Distress

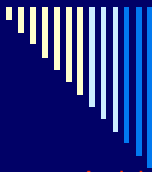


## Core Scale: Impairment of Body Structure or Body Function

Impairments are problems in body structure (anatomical) or function (physiological) expressed as a deviation or loss

- 0 The most severe presentation of impairment
- 1 Severe presentation of this impairment
- 2 Moderate/ severe presentation
- 3 Moderate presentation
- 4 Mild presentation
- 5 No impairment of structure or function

From "AusTOMS for Physiotherapy"  
Morris, Dodd & Taylor 2004 p 35



## Core Scale: Activity Limitations

Activity limitation results from the difficulty in the performance of an activity.  
Activity is the execution of a task by the individual.

- 0 Complete difficulty
- 1 Severe difficulty
- 2 Moderate / severe difficulty
- 3 Moderate difficulty
- 4 Mild difficulty
- 5 No difficulty

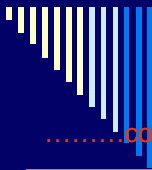
From "AusTOMS for Physiotherapy"  
Morris, Dodd & Taylor 2004 p 35



## Core Scale: Participation Restriction

Participation restrictions are difficulties the individual may have in the manner or extent of involvement in their life situation. Clinicians should ask themselves: "given their problem, is the individual experiencing disadvantage"?

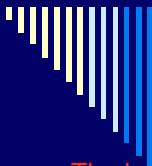
0. **Unable** to fulfil social, work, educational or family roles. No social integration. No involvement in decision making. No control over environment. Unable to reach potential in any situation.
1. **Severe difficulties** in fulfilling social, work, educational or family roles. Very limited social integration. Very limited involvement in decision making. Very little control over environment. Can only rarely reach potential with maximum assistance.
2. **Moderately severe** difficulties in fulfilling social, work, educational or family roles. Limited social integration. Limited involvement in decision making. Control over environment in 1 setting only. usually reaches potential with maximum assistance.



## Core Scale: Participation Restriction

.....continued

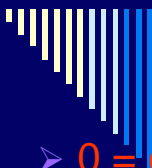
- 3 Moderate** difficulties in fulfilling social, work, educational or family roles. Relies on moderate assistance for social integration. Limited involvement in decision making. Control over environment in more than 1 setting. Always reaches potential with maximum assistance and sometimes reaches potential without assistance.
- 4 Mild** difficulties in fulfilling social, work, educational or family roles. Needs little assistance for social integration and decision making. Control over environment in more than 1 setting. Reaches potential with little assistance.
- 5 No** difficulties in fulfilling social, work, educational or family roles. No assistance for social integration or decision making. Control over environment in all settings. Reaches potential with no assistance.



## Core Scale: Distress / Wellbeing

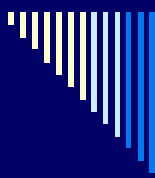
The level of concern experienced by the individual. Concern may be evidenced by anger, frustration, apathy, depression etc

- 0 High and consistent levels of distress or concern
- 1 Severe concern, becomes distressed or concerned easily
- 2 Moderately severe concern. Frequent emotional encouragement and reassurance needed
- 3 Moderate concern. May be able to manage emotions at times, although requires some encouragement
- 4 Mild concern. May be able to manage emotions in most situations. Occasional emotional support or encouragement needed
- 5 Able to cope with most situations. Accepts and understands own limitations.



## Selecting Points For Each Scale

- 0 = complete disability, no function, poor health
- 5 = no disability, normal function, normal health
  
- Decide on a rating according to 'best fit' - no patient will match every one of the descriptors
  
- Use half points only when absolutely necessary to discriminate performance between descriptors



## Stage 2: Development of descriptors

- Focus groups of expert clinicians in Victoria
- Modified 'Delphi' survey of clinicians across Australia
- Consumer feedback
- Clinician feedback (following training)

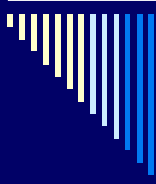
The scales were developed in 4 main stages. Firstly, focus groups of clinicians in each discipline were run throughout different health care sites in Vict. These groups developed the specific descriptions for each scale point. For example speech path clinicians attending a focus group on 'voice' were asked to describe what constituted a 'voice' impairment, and how they would describe the most severe impairment of voice (for a 0 rating).

The scales as developed by the focus groups were then sent out in a two round survey across Australia. Clinicians who participated in the survey were asked for their opinions on the accuracy of the scale descriptors, and to make any changes necessary. They also assessed the face validity of the tool.

The research team have sought the views of consumers (clients) in the process of developing these scales. Consumer groups were contacted and representatives attended a focus group at La Trobe University. Consumer feedback and advice on terminology was particularly useful for the development of the participation and wellbeing domains of the scales.

Final changes to the scales have been made following a one-month trial period- clinicians were asked to try the scales in rating real clients following training, and gave us feedback about how the scales were working in clinical practice. This feedback is still being gathered this month, and final changes will be made before data collection for the project proper begins in October.

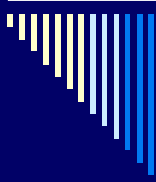
OVERHEAD. THESE ARE EXAMPLES OF THE SCALES AS THEY CURRENTLY STAND:  
SP OT PT



## Stage 3: Training clinicians in the use of the scales

- 14 sites across Victoria recruited for data collection
- Training of each clinician
  - 3-4 hours
  - Practice ratings
  - Reliability ratings
- Follow up session
  - Reliability ratings

We have recruited 11 sites across Victoria for our data collection in this project. We needed then to train all clinicians who would be using the tool in these sites. Training sessions were held throughout July and August. They ran for approximately 3-4 hours in each training group, and involved the clinicians making practice ratings on paper and video case studies. Ratings at the end of the sessions were made by each clinician individually, and collected to look at reliability. After getting clinicians to use the tool for one month, we have been holding follow-up sessions at each site to answer any questions and look at any changes needed to the scales before the real data collection starts. These follow up sessions again involve a rating by clinicians which we will use to look at the reliability of the measure.



## Stage 4: Data collection and analysis

- Data collection from 14 acute, subacute and community health care sites
- 6 months= 300 cases per profession
- Analysis of the validity of the AusTOMs tool

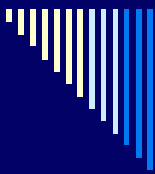
Data collection will begin in October and runs for 6 months. We are collecting data prospectively on 500 patients per profession, across 11 sites. And we are going to use this data to examine the validity of the Austoms tool.



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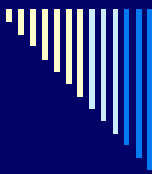
## Reliability

- Varied agreement- most above 70% for inter and intra rater reliability
  - Follow-up studies:
    - Rubos (2005, unpublished honours thesis)-
      - inter-rater reliability 99.0 (ICC) for distress/wellbeing
      - No difference b/w novice and expert rating
    - Scott et al. (In press)- OT Self-Care scale
      - Inter-rater .79 (AL, PR, DW), .70 (I),
      - Intra rater >.80 for all domains except impairment (.74)
-



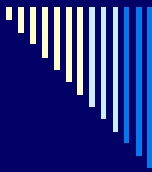
# Validity

- Face and content validity assessed in initial study
  - Focus groups
  - Delphi survey
- Construct (convergent) validity also assessed
  - Comparison with EQ-5D
- Further studies have examined sensitivity of the tool to detect change over time (Unsworth, 2005)
- Future work on other aspects of validity (e.g., predicting discharge from assessment status)



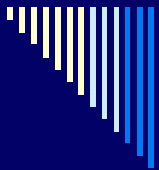
## Feedback from clinicians

- Following data collection:
  - Quick-
    - approx 5 mins once used to the tool
  - Easy-
    - practical difficulties in some settings- e.g., acute (high turnover, visiting wards)
    - Easier to use over time once used to the definitions
  - User friendly-
    - ? Applicability in some settings (e.g., acute)
    - useful tool for clarifying and targeting patient-therapist goals
    - legitimised working within the domains of participation and well/being distress



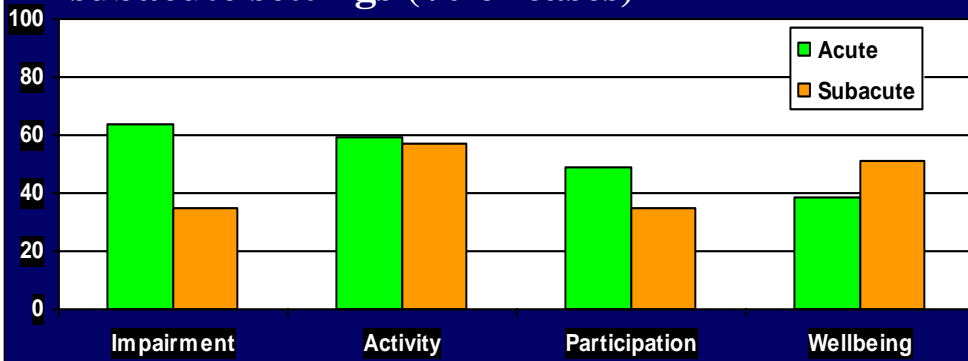
## Example data

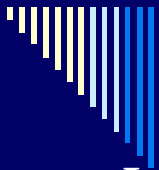
- Qu 1: Is there a difference in the profile of change for clients seen in acute and subacute settings?
  - Expect more impairment level change in acute, and more activity/wellbeing change in subacute
- Qu 2: Is there a difference in the profile of change for clients with progressive vs acquired neurological conditions?
  - Expect less improvement for progressive



## Acute vs Subacute

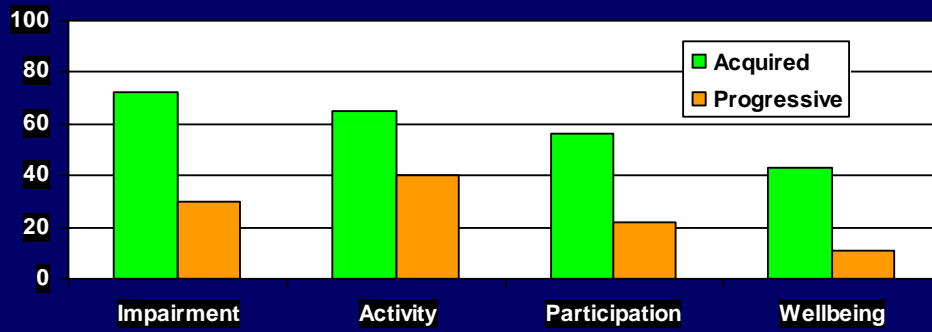
Improvement in swallowing in acute vs subacute settings (% of cases)

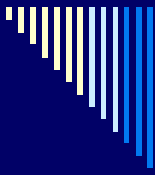




## Acquired vs Progressive neuro

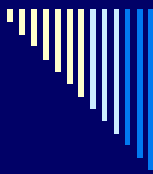
Improvement in swallowing in acquired vs progressive neurological disorders (% of cases)





## AusTOMs in practice...

- Around 300 of each scale sets have been sold and in use across Australia
- Some international interest, including Canada, NZ, UK, Brazil (!)
- Several ongoing studies (LTU and clinical)



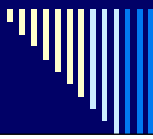
## SP outcome study- Melbourne

For patients who have had a stroke:

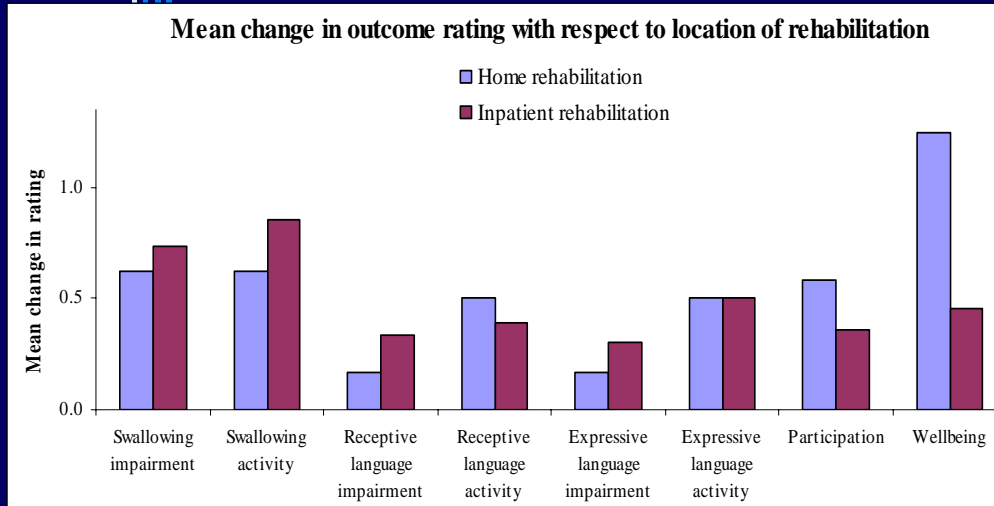
- Is there a difference in Speech Pathology outcome for patients seen as inpatients within the hospital, and patients who receive rehabilitation in the home?
- Is there an association between the amount of therapy input received and the Speech Pathology outcome?
- Is there an association between the age of the client (e.g., 'young' versus 'aged') and the Speech Pathology outcome?

1 and 2 are directly related to clinical management- ie, looking at service effectiveness, and therapy input- these questions will guide this site in choosing the most effective service type for these clients- e.g., if no real difference, but one option is cheaper, then push for having more clients seen in that mode.

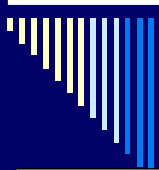
Third is partly a question with professional relevance- this is information that we don't necessarily know as a profession- do clients achieve better outcomes when they are 'young' vs 'older' stroke patients. We might presume that younger clients do better, but we don't have a lot of information about



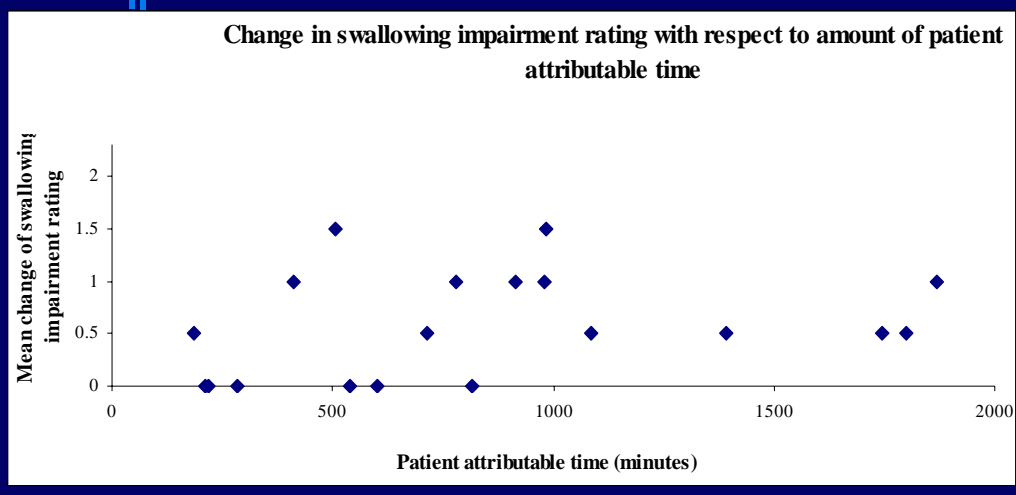
## SP study results (to date)



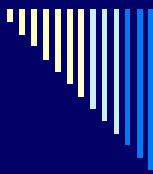
Results to date indicate that there is greater change in participation and wellbeing for patients seen at home, greater in impairment for inpatients



# SP study results (to date)



Results to date indicate no relationship between patient attributable time and change in impairment rating.

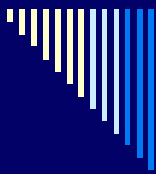


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## Considerations for implementation

Different roles for outcome measurement

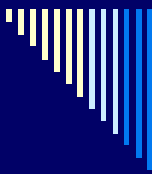
- Measuring individual client (e.g., progress over time)
  - Measuring and comparing change in groups (e.g., benchmarking)
  - Outcomes research (e.g., effectiveness studies)
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## Individual patient measurement

- Show change in individual patients over time
  - Monitor progress towards individual goals (e.g., improved communication)
  - Encourage clinical reflection (is this client making progress?)
    - Professional development/ mentoring
    - Job satisfaction
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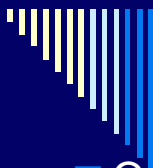


## Measurement of groups

- Evaluating services
- Comparing services (benchmarking)
- Useful for managers (e.g., for accreditation, clinical governance)
- Useful for the profession- with large enough groups, can make links between process (e.g., therapy types) and outcomes

Most common method in the USA- many large databases of outcomes- e.g., medical outcomes study (? SF-36 )- huge databases- reports of thousands of patients in their summary data.

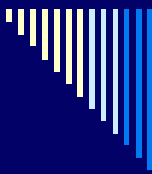
E.g., ASHA (Speech path professional body) have a large database called the National Outcome Measurement system (NOMs) and publish data that they claim can be used to show the value of SP services, etc- e.g., difference in outcomes between individual and group therapy.



## Measurement in research

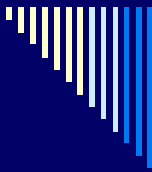
- Outcomes in research
  - Effectiveness studies in clinical practice
    - Wellbeing/QoL of patients with cancer who are referred to Social Work, versus those who are not
    - Functional independence of children seen in an inpatient rehab program vs those discharged home for community follow-up following traumatic injury
    - Outcome of patients who have swallowing assessed/monitored using FEES, vs those who have traditional 'bedside' examination/monitoring.
  - Efficacy studies (RCT or similar).

AusTOMs is a useful tool for research studies- in practice- e.g., effectiveness- allows consideration



## Considerations for implementation

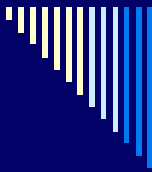
- What is the role (e.g. individual patient measurement vs group?)
  - Consider the specific question, if any, that you want to answer
- Is there a need for this role?
  - Role + Need = Value!
- Does your current environment support outcome measurement in this role
  - e.g., if group measurement, do you have a database, admin help, stats knowledge?
- Does the tool suit the role?
- If not, what can change?



## Some strengths of AusTOMs

- By therapists, for therapists
- Addresses differences across each profession
- Common language in ICF terms
- Framework for considering 'whole' of client difficulties and progress
- Can be aggregated for data analysis across groups

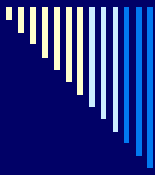




## Some weaknesses

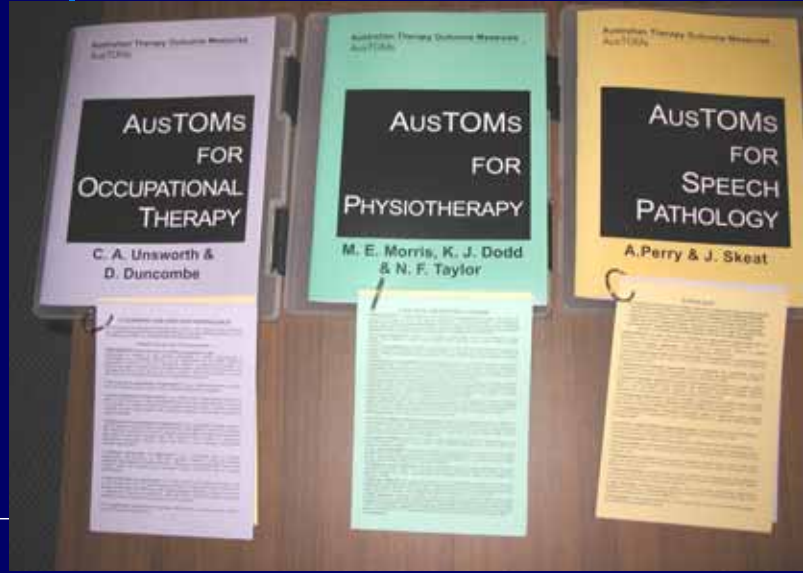
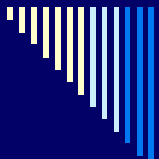
- Further analysis/ development of scales (e.g., further reliability studies) – in process
- ? Training needs- included in pack (but relying on users to do practice ratings, etc)
- ‘Snapshot’ overview of patient- not a detailed assessment

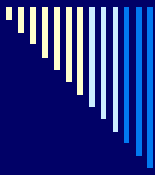




## AusTOMs

- ❑ Provides one way of evaluating the benefits of service provision
- ❑ Enables therapists to monitor change across health domains
- ❑ Allows benchmarking of outcomes for comparable service providers
- ❑ Supports feedback for therapists, managers and clients





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Thanks!

For further info, please visit

**[www.latrobe.edu.au/austoms](http://www.latrobe.edu.au/austoms)**

**Any questions?**

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