PALLIATIVE CARE RESEARCH NETWORK VICTORIA

Palliative Care Research Network Victoria Forum

"AT WHAT COST?"

Collecting data for costing clinical research interventions

25th August 2015

5:00 – 6:00 pm, followed by networking drinks and nibbles

Victorian Cancer Agency
Linking research and patient care

Australian Government
Department of Health and Ageing

PALLIATIVE CARE RESEARCH NETWORK VICTORIA

Program

5:00 – 5:05 pm	Opening Address *Soula Ganiatsas, PCRNV Program Manager*
5:05 – 6:00 pm	"AT WHAT COST?" – Collecting data for costing clinical research interventions *Prof Marion Haas, Professor of Health Economics, Centre for Health Economics Research and Evaluation, University of Technology, Sydney*
6:00 – 7:00 pm	Networking Drinks and Nibbles

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Forum
22 October 2015

PCRNV Breakfast Forum: Recruitment, Implementation and Career Development

The PCRNV is sponsoring the Early Career Research Breakfast Forum as a part of the 3rd Australian Palliative Care Research Colloquium. Join us for an informal breakfast and discussion about forging a career in research.

- Hear from key palliative care researchers from a variety of disciplines
- Learn how to kick start your career in research
- Network with colleagues who are also early in their career

Date: Thursday, 22nd October 2015, 8:00 - 10:00 am
Venue: Rendezvous Grand Hotel, 328 Flinders Street, Melbourne
Inclusions: Breakfast, presentations and discussion. All welcome.
Cost: $30.00 including GST
Registration: http://www.cvent.com/d/drqqfb/2A

Program

Research and Implementation: The big picture
Dr Melanie Price, Executive Director, Psycho-Oncology Co-operative Research Group & Senior Research Fellow, University of Sydney

Recruitment in Palliative Care: Issues, challenges and strategies
Dr Clare O'Callaghan, Music Therapist, St Vincent's Hospital Melbourne & Senior Research Associate in Palliative Care, Cabrini Health, Australia;
Regina Kendall, Nurse Practitioner, Grampians Regional Palliative Care Team;
Belinda Fazekas, National Project Officer, Palliative Care Clinical Studies Collaborative.

Panel Discussion
Panel Chair: Professor Philip Larkin, President of the European Association for Palliative Care and Professor of Clinical Nursing Palliative Care, University College Dublin & Our Lady's Hospice and Care.

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PCRNV Membership

Who could become a PCRNV member?

Membership to the PCRNV is open to all researchers, students, health professionals with an interest in palliative care research.

There is no membership fee.

Why should I become a PCRNV member?

Our members will have access to a number of benefits including funding, development and networking opportunities.

How do I become a PCRNV member?

Join PCRNV online at: www.pcrnv.com.au

Key benefits of membership include:

Funding Opportunities

- Access to a variety PCRNV funding schemes including: PhD scholarship, small project and travel grants.

Networking Opportunities

- An opportunity to network and collaborate with other palliative care researchers through PCRNV forums and workshops.
- Early career researcher opportunities for mentorship, networking and collaboration.

Development Opportunities

- Opportunities for senior researchers to mentor early career researchers.
- Peer Review service for project proposals and grant applications.
- Support with developing your research idea into a potential project and grant proposals via the PCRNV Concept Development Workshops.

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AT WHAT COST? COLLECTING DATA FOR COSTING CLINICAL RESEARCH INTERVENTIONS

Marion Haas

In this presentation….

- Why costs are important (and why they are only half the picture)
- How economists view costs
- What minimum data are needed to assess costs?
  - Some information on sources of data
- What do we know about costs of palliative care?
  - An example of data sources for a project
- Where are all the health economists?
  - What does it cost to include an economic evaluation in research?
  - Ask CREST

- **Please interrupt and ask questions**

Why are costs important?

- Every day, many decisions are made about:
  - Introducing a new technology or treatment
  - Changing the way a service is delivered
- Such decisions are about Resource Allocation
- Can such changes be justified?
  - Is the new "thing" better in terms of value for money ie can it be justified in terms of its costs and benefits?

Why are costs important?

- You know the answers to this: Costs represent
  - What we (as individuals or society) are willing to pay
  - What we think the product or service is worth
  - A way in which we can compare the "value" of a particular product or service with another

  - What we are willing to spend on this and NOT on ANYTHING ELSE
  - THIS IS THE ECONOMIC VIEW OF COST AND IS CALLED:

Opportunity Cost

- **Opportunity cost:** the cost of something in terms of what else those resources could have been doing (and the benefits that could have been derived from that opportunity).

- Eg. Do the benefits produced by a new treatment A, justify its introduction relative to the resources required and outcomes from existing treatment B?
  - Economic evaluation is used to assess whether new treatments are a better use of limited resources compared with current practice.

Calculating Costs

- There is no magic to estimating the costs of a new intervention vs current intervention *or* adding a new treatment/service *or* expanding an existing one.
- Three steps:
  - Identify the resources used:
    - All inputs into a service
    - Before, during and after
    - Side effects and unintended consequences
  - Measure the number or amount of resources used
  - Assign unit costs (prices) to each type of resource

Calculating costs

- Types of inputs to consider:
  - Staffing (eg doctors, nurses, allied health etc)
  - Treatments (eg drugs, surgery, radiotherapy)
  - Other service use (eg. diagnostics, imaging etc)
  - Adverse Events (type, severity, treatment etc)
  - Capital equipment associated with the new treatment/program

Issues to Consider

- Prices are not the same as cost (and certainly not opportunity cost).
- Costs can differ by age, sex, disease severity, co-morbidities, case mix etc.
- Which costs - related to perspective *(covered later)*.
- Sources for costing information *(next slides)*.
- Is the resource use driven by the trial?

Sources of Data

- Clinical trials:
  - Measures of resource use
- Secondary databases (Medicare data, hospital datasets, longitudinal/repeated surveys etc.):
  - Can provide measures of resource use
  - Can also provide value of resource use
- Other primary data-collection:
  - Patient diaries (might be within the trial)
  - Clinician surveys

Trials as a Source of Data

- Resource use can be collected during a clinical trial
  - Intervention/s (eg dose, frequency, time to administer)
    - Active treatment
    - Comparator
    - Co-administered treatments
    - Treatment of adverse events
  - Number of GP/specialist/out-patient visits
  - Number and type of diagnostic tests
    - Blood tests, imaging
  - Procedures
    - Operation time
    - Radiation dose
    - Time in hospital

Issues with costs and clinical trials

- **Resource use driven by trial?**
  - Patients tend to receive more healthcare, such as diagnostic tests, than would normally occur in real life.
    - May overestimate costs
  - Analysis should be based on 'intention to treat'.
    - Costs incurred by drop-outs are still relevant.

- **Resource use beyond the trial?**
  - May need to extrapolate beyond the observation period of the trial.
    - Ignoring costs beyond the observation period may underestimate costs (eg progression).
    - Could be based on observational data, literature review.
  - Can test for statistical significance in differences in costs between trial arms
    - BUT studies are often underpowered
    - May miss sig diffs in resource items which are rare, i.e. side effects.

Staff, imaging and pathology services

- Medicare Benefits Schedule (MBS)
  - http://www.health.gov.au/internet/mbsonline/publishing.nsf/Content/Medicare-Benefits-Schedule-MBS-1
  - Benefits paid by Federal government for outpatient physician, imaging and pathology services.
  - Can obtain aggregate data online or gain consent from participants and request individual data from Australian Department of Health

Other staff-based costs

- Allied health services
  - Note that some are now paid via the MBS
  - Department of Veteran Affairs
    - http://www.dva.gov.au/service_providers/Fee_schedules/Pages/Dental_and_Allied_Health.aspx)
- Nursing salaries / home nursing
  - http://www.health.nsw.gov.au/nursing/employment/nurse_award_wage_rates_11.asp
- Ambulance services
- Home modification and appliances
- Other community based services e.g. Meals on Wheels
- Residential aged care and accommodation

Drugs: Use and Costs

- Main source is the Pharmaceutical Benefits Schedule (PBS)
  - http://www.pbs.gov.au/pbs/home
- Non PBS drugs
  - Arrow pharmaceutical price (www.arrowpharma.com/about.cfm#products)
- Over the counter drugs (OTC)
  - Recommended retail price (RRP) e.g. Pharmacy direct (www.pharmacydirect.com.au)
- Don't forget drug delivery systems
  - e.g. Pumps and infusers
  - Remember to consider economies of scale (i.e. used by multiple patients)
- Consider costs with and without wastage
  - Whole packs/vials

Hospital costs

- Non-admitted
  - Emergency department (data quality varies)
  - Outpatient services (data availability varies)
- Admitted:
  - Australian Refined Diagnostic Related Groups (AR-DRGs)
    - http://www.health.gov.au/internet/main/publishing.nsf/Content/Round_13-cost-reports
  - Average costs in public/private hospitals and day cases
  - DRGs can sometimes be too non-specific for use
    - Multiple procedures captured in same DRG – significantly different costs
    - Note some DRGs are split by complications (+/– CSCC)

Capital Costs

- One-time high cost (multiple users)
- Costs are independent of the level of output
- Inputs to consider:
  - Life expectancy of device/machine
  - Usage
  - Depreciation
- Issues
  - Use for multiple indications
  - Usage in large centres vs. small centres

Patient surveys and diaries

- Patients are asked to record every health care encounter and expense over a certain timeframe.
- Example: http://www.cancercouncil.com.au/html/patientsfamiliesfriends/downloads/Cancer_Care_Diary.pdf
- May be only source of patient out-of-pocket expenses and travel costs
- **Recall and compliance issues**

What do we know about costs of palliative care?

- Not very much in Australian context
  - Some utilisation data
  - Informal care (unpaid time, time lost from work, other activities) very important
- Canadian work (next slide)
- Lack of good databases on use/cost of community based support services
  - challenges in identifying costs & increases burden of data collection for patients/carers.

Chai et al 2013

- **Average cost $14,924/month**
- Public costs $3211/mth ($1144-$7479)
  - Ambulatory care 21% of total costs in last year
  - Inpatient
  - Home care
- Private costs $379/mth 2%
  - Out-of-pocket
  - Third party insurance
- Unpaid care $11,334 ($5797 – $23,263)
  - Time to care giving 77%
  - Time lost from work
  - Time lost from other activities

Example of planned collection

Component	Data collection	Participant forms required	Applications for approval
Private medical services – MBS (including those on Reap a/c)	Medicare	MBS consent form	• Medicare application form (21/2/13) Requires ethics approval, consent form & participant information sheet • DVA application form • DVA HREC application
Pharmaceuticals – PBS & RPBS	Medicare	MBS consent form	As above
Hospital care – NSW	APDC & EDDC linked by the CHeReL to identify episodes across all NSW hospitals	NSW Health consent form	• CHeReL application form • NSW Population & Health Services REC application
Hospital care - Victoria	Recruiting hospital data extraction Other hospitals - Interview	Study consent form? Resource use questionnaire	?
Hospital outpatients	Interview	Resource use questionnaire	
Out of hospital services – community and palliative care	Interview	Resource use questionnaire	

Sensitivity Analysis on Costs

- Sensitivity analysis asks the question "What would happen to the total cost if cost or assumption X changed?"
  - Used to identify how certain we are about the baseline cost value for an intervention.
  - Each estimate of unit costs and resource usage often has a range of possible values (e.g. due to uncertainty or patient or institution heterogeneity).
  - Sometimes we need to make assumptions (e.g. cost of drug, patient re-admission etc)

Summary of Costs in Economic Evaluations

- Economic evaluations measure **opportunity cost**: the cost of something in terms of an opportunity forgone. Not the same as accountancy costs.
- Key steps: Identify, Measure and Value.
- Clinical trial provides a good source for measuring resource use, but this can be bolstered by external data sources (eg Medicare utilisation).
- Various sources exist to value inputs: PBS, MBS, AR-DRGs etc.
- Once valued, costs can be aggregated. Sensitivity analyses are useful to assess the impact of assumptions on the certainty around resulting cost estimates.

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Where are all the health economists?

Cancer Research Economics Support Team (CREST)

Funded by Cancer Australia (2 contract periods)

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What does it cost to include economics in a research project?

- Depends:
  - On complexity of research design
  - Prospective or retrospective
  - Extent of modelling/additional data analysis
- Does the research design align with an economics question?
- Is additional data collection needed?
  - New methods/tools?
  - Access to administrative data?
- Will additional analysis be required?

What will be required?

- Advice and support
  - Might be "free" (see further on)
- Specific expertise will not be free
  - Design of data collection tools
  - Specific analysis of costs/outcomes data
- Access to secondary/admin databases will not be free
- Health economists NOT required for all aspects
  - Statisticians and trialists capable of undertaking some design & analysis
- Specify the HE activities (as for all research project activities) within the timelines and allow for PG researcher
  - Design stage 0.2- 0.4 FTE
  - Collection stage 0.4 FTE months 1-4 Yr 1, 0.5 Month 5-end
  - Analysis stage 0.4-0.6 FTE
- See http://www.crest.uts.edu.au/pdfs/Factsheet_CostingAnEconEval_FINAL.pdf

Introduction to CREST

- An Economics Support Team
  - Provide **specialist advice & support** related to the incorporation of economic evaluation in trials in all 13 Trial Groups (TGs)
  - **Actively engage all TGs to determine needs,** identify new opportunities to incorporate economics in planned, new & existing trials
  - Provide advice to assist each TG to competently undertake these studies **– build capacity**

Technical advice to trials groups

- Technical advice and support regarding
  - planning of economic evaluation (EE) for new and existing trials
  - data collection and analysis
  - economic modelling
  - interpretation of results of EE within trials
- Provided through written report/s of trial and protocol audits
- No funding for conduct and/or analysis of EE

Support for all trial groups

- Development of pro-forma documents and standardised data collection forms
- Development of consensus documents &/or best practice guidelines
- Horizon scanning and information dissemination for methodological economic issues
- Available on the website for review, download and comment/discussion:
  - www.chere.uts.edu.au/CREST

Capacity building

- Key component of services provided by CREST
- Formal and informal opportunities
- Tailored to individuals/groups needs, and specific to cancer clinical trials
- Workshops
- Structured training opportunities

Other activities

- Establishment of collaborative relationships with:
  - Cancer Australia QoL Chair and
  - Genomic Cancer Clinical Trial Initiative (GCCTI) (formed to develop mutation-specific cancer clinical trials protocols)
- Annual meeting with trials groups & Executive Officers
- Seek annual feedback from trials groups