CREST
CANCER RESEARCH ECONOMICS SUPPORT TEAM
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CHERE
CENTRE FOR HEALTH ECONOMICS RESEARCH AND EVALUATION

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CREST Update—July 2013

CREST Funding Continued!

We are pleased to announce that CHERE has been awarded funding from Cancer Australia to continue the provision of health economics and pharmacoeconomics services to the Cancer Australia Clinical Trials Groups (CTGs).

We would like to thank you for your engagement and support over the last three years. The feedback you provided through the survey process helped us shape our successful tender bid and the services we will be providing in the future.

CREST's services will be provided through both core and enhanced activities. The core activities build on those which many of you have become familiar and already use, including: fostering understanding and collaboration with the CTGs and other Cancer Australia National Technical Service groups; providing advice and support to CTGs and their members by reviewing and auditing CTG trial protocols/ proposals; providing advice about data collection and analysis of health economics and pharmacoeconomics elements of trials; building health economics capacity within the CTGs through health economics workshops and training opportunities; and disseminating information through the website, emails, factsheets and CREST newsletter.

The enhanced activities include engaging with the broader EO Network and clinical trial managers' groups, providing in-house structured training opportunities, preparing standard operating procedures that apply to the use of health economics in cancer clinical trials, advanced health economics workshops, and publication of work related to CREST activities.

The CREST team is very excited to be able to continue to work with the CTGs and the cancer clinical trial community. We look forward to meeting many of you, and the opportunity to work together.

Your Views on CREST

Thanks to all of you who took the time to respond to our CREST survey back in March. We had feedback covering all the CTGs (from the Executives and members).

In general, the feedback from the survey was positive and constructive. Respondents felt that the services provided by CREST are useful, that they would be using them again in the future, and that they would recommend them to others.

A key objective of the survey was to assist CREST with planning for future services. Feedback from the survey highlighted interest in a number of topics; advanced health economics training; resource use and costing methodology; patient and carer quality of life; and measuring and valuing health outcomes. Look out for forthcoming factsheets or specific training on these topics.

Another area of interest noted in the survey was potential participation in CHERE based training opportunities. Discussion on how those are being implemented is provided elsewhere in this newsletter.

CREST plans to conduct another survey on its activities some time late next year. In the meantime, a copy of the report from the 2013 survey will be provided to Cancer Australia and the Trial Group Executive officers.

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CREST Spin-offs: Screening for MEN-2B, maintenance in multiple myeloma, and PET scanning in cervical cancer.

CREST is not funded to conduct the economic analysis of trials it reviews. However, sometimes funding is available from other sources that allows such projects to be undertaken. There are currently three such projects underway (or nearing completion) within CHERE that arose from within CREST or involve CREST team members. The following provides a brief summary of those projects.

FDG-PET for locally advanced cervical cancer

Collaborators: Changhao Hou[1], Shankar Siva[2], Marion Haas[1], Rosalie Viney[1].

[1] CREST, CHERE, UTS; [2] Peter MacCallum Cancer Centre, Melbourne

This project aims to assess the costs and potential cost-effectiveness of using a single post-therapy FDG-PET scan compared with standard hospital based follow-up for the ongoing management of care in women with advanced cervical cancer.

Results from a prospective cohort study of 105 patients conducted at the Peter MacCallum Cancer Centre indicate that a single FDG-PET scan after treatment for locally advanced cervical cancer predicts prognosis more strongly than any other factor. Only 1.6% of patients with a negative post-treatment PET scan would have a relapse that can be detected by clinical follow-up (Siva S *et al*., 2011).

Such results suggest that the exploration of less invasive and resource intensive follow-up without serial pelvic examinations may be warranted. Telephone-based follow-up plus a single post-therapy FDG-PET may potentially be a cost-effective strategy compared with the current standard, intensive clinical methods of follow-up. That is, it may be both less costly for health services and patients and more beneficial to patients in terms of convenience and reduced anxiety to use an FDG-PET based approach to follow-up in these women.

To test the cost-effectiveness of an FDG-PET approach to follow-up, a decision analytic model will be constructed. This will utilise existing data from a range of sources to estimate the cost-effectiveness of replacing the current practice of routine hospital-based follow-up with a new treatment algorithm using a single FDG-PET scan.

The results of this research have the potential to influence clinical practice at the Peter MacCallum Cancer Centre. If the new model of care appears to be cost-effective, the results will be used to justify a business case for a nurse led telephone follow-up clinic to undertake the routine clinical care of patients with locally advanced cervical cancer following a single FDG-PET scan.

In the longer term, this analysis could be used in the context of a nation-wide multi-institutional study designed to investigate the cost-utility of incorporating a single FDG-PET scan into the routine follow-up of patients treated for locally advanced cervical cancer. The results of a larger study could be used to inform an application for federal funding of post-therapy FDG-PET scans in this clinical context.

Siva S, Herschtal A, Thomas JM, et al. (2011). Impact of post-therapy positron emission tomography on prognostic stratification and surveillance after chemoradiotherapy for cervical cancer. Cancer, 117; 3981-3988.

Thalidomide for multiple myeloma maintenance

Collaborators: Richard De Abreu Lourenço[1], Anna Kalff[2], Andrew Spencer[2], Marion Haas[1], Rosalie Viney[2].

[1] CREST, CHERE, UTS; [2] Alfred Hospital, Melbourne

A cost-effectiveness analysis was undertaken of the use of thalidomide as maintenance therapy following an autologous stem cell transplant (ASCT) in patients newly diagnosed with multiple myeloma (MM). Data for this analysis were supplied by the ALLG, from the MM6 study.

The results from the MM6 study indicate that patients who received treatment with thalidomide in the maintenance setting enjoyed longer progression free survival, and longer overall survival (a difference in mean survival of 1.13 years) over the observed period of follow-up.

A trial based economic analysis was conducted comparing the costs and outcomes of thalidomide with no treatment in the post-ASCT maintenance setting. For the average patient within the two treatment groups, the analysis considered treatment exposure (to the primary drug and any co-therapies), the use of ongoing medical and diagnostic services, the occurrence and treatment of serious adverse events, post-progression therapy and the duration of survival. This information was com-

pared across treatment groups to derive the incremental cost per life year gained. Sensitivity analyses were conducted.

The results showed a difference in the average cost per patient in the two treatment groups of $24,912 (being higher for the thalidomide group). The resulting discounted incremental cost-effectiveness ratio was $26,996 per life year gained for thalidomide compared with no maintenance treatment.

The principal contributors to the difference in treatment costs were the cost of thalidomide itself, post-progression treatment and the costs associated with the acquisition and administration of zoledronic acid.

Subsequent analyses showed that this result was most sensitive to the estimated gain in survival and the assumptions regarding the manner in which post-progression therapy costs were included.

A number of important limitations apply to this work: (1) the economic evaluation was not prospectively specified, requiring a number of assumptions regarding treatment exposure, duration and effect that might limit the external applicability of these results; (2) information on some concomitant therapies and post progression therapy was limited; (3) results are reported as costs per life year gained whereas costs per QALY are preferred for external comparisons (these could not be estimated due to an absence of applicable quality of life data); and (4) all costs and treatment practices are presented from the Australian perspective, and might therefore not apply to other jurisdictions.

The applicability of the results to other jurisdictions is therefore limited to the extent that similar treatment practices apply.

Do you have a trials group newsletter?

CREST can provide articles which introduce CREST services, or which provide commentary on a health economics topic of interest to your members.

Please contact us if you would like to discuss the possibilities.

Screening for MEN-2B

Collaborators: Goodall S[1], Hou C[1], Church J[1], High H[2]

[1] CREST, CHERE, UTS; [2] Sydney Cancer Genetics

Multiple endocrine neoplasia type 2 (MEN2) is an autosomal dominant, inherited disorder resulting in a high lifetime risk of developing medullary thyroid carcinoma (MTC). The MEN2B subtype has a prevalence of ~1:600,000[1] and is associated with aggressive early onset MTC in children that metastasises early and responds poorly to conventional chemotherapy[2]. In 80% of carriers, MEN2B is associated with a specific phenotype that becomes more obvious with age and includes marfanoid body habitus and joint laxity[3].

The aim of this study was to evaluate the cost-effectiveness of the following scenarios: 1) Current practice – symptomatic diagnostic testing of MEN2B; 2) Targeted screening of MEN2B in presymptomatic patients expressing Marfanoid habitus; and 3) MEN2B screening as part of the national newborn screening program.

A decision analytical model was developed to capture the natural progression of MEN2B. The rationale of the model is that MEN2B screening will lead to fewer cases of MTC, which in turn leads to measurable impacts on both mortality and morbidity. Inputs for the model parameters were obtained from a review of the literature review or expert opinion. These included inputs for the prevalence of MEN2B, Marfans syndrome, the probability of MEN2B carriers having Marfanoid habitus, the probability of having metastatic MTC, and the sensitivity and specificity of genetic testing.

All costs are in Australian dollars (2012) and included those for newborn screening tests, genetic testing in the presence of marfanoid habitus, and subsequent treatment for MTC. Quality of life was assessed based only on the presence of subsequent thyroid disease. Costs and benefits were discounted at 5%.

Univariate (deterministic) and probabilistic sensitivity analyses were conducted to test the robustness of the model results to the various analysis parameters.

The results demonstrate the current practice (no testing) is dominated by targeted screening. That is, targeted screening is less costly and more effective than the current practice of no screening. This is due to the significant costs associated with treating late-diagnosed MTC. Targeted screening is cheaper than newborn screening, but is less effective. The incremental cost-effectiveness ratio for including screening for MEN2B as part of newborn screening is $1,216,551 per QALY, which is not acceptable in Australia.

The results are most sensitive to the cost of the genetic test (particularly for the newborn screening strategy). The model is also sensitive to the success rate of preventative surgery, the cost of treating late-diagnosed MTC and the prevalence of MEN2B.

Results of the probabilistic sensitivity analysis indicate that current practice is always dominated by targeted screening, whilst newborn screening becomes cost-effective beyond a threshold of $1,000,000.

This study provides the first comprehensive cost-effectiveness analysis for MEN2B testing. The Newborn Screening Policy in Australia[4] recommends that a condition should be included, provided that: there is benefit for the individual from early diagnosis; this benefit is reasonably balanced against financial and other costs; there is a reliable screening test available; and there is a suitable system in place to deal with diagnostic testing, counselling, treatment and follow-up of patients identified by the test. MEN2B newborn testing fulfils many of these criteria, however at present this option is not cost-effective.

For more details, see the poster on this research on the CREST website.

Ed., W., 1981 Medullary carcinoma and other disorders involving calcitonin, pp. 777-792 in Endocrinology,

Marx, S. J., 2011 Multiple endocrine neoplasia, pp. 1728-1767 in Williams Textbook of Endocrinolog

Sperling, M. A., 2008 Pediatric Endocrinology (3 ed). Elsevier Health Sciences.

http://www.nhmrc.gov.au/_files_nhmrc/file/your_health/egenetics/practioners/gems/sections/04_newborn_screening.pdf

Structured Training Opportunities

One of the core commitments from CREST is to build capacity for the conduct of health economics within the oncology clinical trial and research community. Being hands on is a great way to build skills and knowledge. To facilitate that learning, CREST is introducing a program of Structured Training Opportunities (or secondments).

Essentially, these are projects conducted by an eligible CTG member under the guidance of a CREST health economist. For suitable projects, 20-40 hours mentoring and training time will be available. Ideally, mentoring will be a combination of some face to face time (eg. coming to spend time at CHERE to work on the project with specific questions in mind), and follow-up via regular telephone or e-mail contact for guidance. Including time at CHERE and depending on the nature of the project, mentoring might typically be spread out over a three month period.

If you are a member of a Cancer Australia CTG, have a project with a health economics component, and you are interested in discussing whether it might be suitable as a Structured Training Opportunity project, please contact:

Richard.deabreulourenco@chere.uts.edu.au

Please be aware that CHERE is unable to sponsor individuals for participation in these training opportunities.

What has CREST been up to?

The CREST team had a productive last quarter:

Trial Group Collaborations:

- Conduct of trial protocol reviews/audits, and provision of advice on the use of health economic data (quality of life and cost information) for forthcoming trials.
- Participation in the PoCOG CDW and SAC (June 2013).
- Attendance and participation at the ANZUP ASM (July 2013).

Health Economics Workshops:

- One day workshop held in Sydney (Understanding Health Economics), with 32 participants.

Website Updates:

- Ongoing updates of the CREST website: http://www.chere.uts.edu.au/CREST

Other Activities:

- Awarded funding for 2013-2016 contract!
- Member survey completed.