Centre universitaire de santé McGill

McGill University Health Centre

ANNUAL REPORT 2018-19

Technology Assessment Unit of the McGill University Health Centre

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MANDATE

Mission Statement

- To advise the hospital in difficult resource allocation decisions, using an approach based on sound, scientific technology assessments, and a transparent, fair decision-making process.
- To publish its research in peer-reviewed journals when appropriate, and contribute to the training of personnel in the field of health technology assessment.

Vision

Using the best available scientific evidence, TAU aims to aid in the delivery of quality health care, and the efficient utilization of medical resources.

"Doubt is not a pleasant condition, but certainty is an absurd one."
Voltaire (1694 - 1778)

TAU COMPOSITION

The TAU is composed of a scientific research staff, and an inter-disciplinary policy committee representing physicians, nurses, allied health professionals and patients.

Policy Committee

TAU Representatives

James Brophy	Chairperson
Maurice McGregor	Chair Emeritus
Nandini Dendukuri	TAU Director

External Committee Members	Discipline
André Bonnici	Pharmacy & Therapeutics
Christos Calaritis	Multidisciplinary Council
Todd Lee and Emily McDonald	Council of Physicians and Dentists
Patricia Lefebvre & Teresa Mack	Quality, Risk Management & Performance
Brenda MacGibbon-Taylor	Patients' Committee
Nancy Mayo	Division of Clinical Epidemiology
Alyson Turner	Council of Nurses

Research Staff

Nisha Almeida	Research Scientist
David Felipe Forero	Research Assistant
Marie Belmonte	Administrative Technician
Alain Lapointe	Consultant

TAU REPORTS

NOTE

Projects are researched and drafts prepared by the research staff of the MUHC TAU, referred to below as "the authors". They are assisted by expert consultants appointed for each project. Draft reports are then circulated, reviewed, amended and finally approved by the full TAU Policy Committee who thereby take ownership of the recommendations made.

DIFFUSION

- Our reports are indexed in the international database for the Center for Reviews and Dissemination, York University, UK: http://www.crd.york.ac.uk/CRDWeb/
- Our reports are diffused from our website: www.muhc.ca/tau

The following reports were completed this year, and are described in greater details in the following pages:

- Hydrogel Spacer to reduce rectal toxicity in prostate cancer radiotherapy: a health technology assessment

Hydrogel Spacer to reduce rectal toxicity in prostate cancer radiotherapy : a health technology assessment

Requestor

Dr. Tarek Hijal, Department of Oncology

Publication Date

April 16, 2018

Authors

David Felipe Forero, Nisha Almeida, Nandini Dendukuri

Background

SpaceOAR is an injectable polyethylene-glycol hydrogel intended to increase the distance between the prostate and rectal wall in patients undergoing radiotherapy for prostate cancer, thus decreasing the amount of radiation received by the rectum. Prostate cancer patients are conventionally treated with external beam radiotherapy (EBRT). Hypofractionated radiotherapy is an alternative technique for delivering the same overall radiation dose as EBRT but in fewer daily treatments; patients thus receive a larger daily dose of radiation (>2 Gy) in comparison with conventional EBRT. While both radiotherapy techniques have similar survival outcomes, there is interest in spacing devices which would allow the use of hypo fractionation or dose escalation to shorten treatment time, while sparing adjacent organs from increased radiation doses and subsequent radiation toxicity

Conclusions

- SpaceOAR is a device intended to increase the distance between the prostate and rectal wall, and thus decrease the amount of radiation received by the rectum during prostate cancer radiotherapy. While the evidence indicates that the use of SpaceOAR is effective for this purpose, it remains unclear whether the reduction in rectal dose-volume results in reduced rectal toxicity and improved quality of life.
- We identified one RCT and five non-randomized studies, none of which found important differences between the SpaceOAR and control groups for rectal

toxicity and long-term quality of life. Furthermore, all of these studies had serious limitations. The estimated risk difference between the SpaceOAR and control group in terms of the risk of Grade 2 or greater toxicity at 3-15 months was 1.5%, implying that it would require treating 68 people in order to avoid one Grade 2 or greater event of rectal toxicity.

- We estimated that the use of SpaceOAR in 70 prostate cancer patients at the MUHC would result in an additional cost of $198,114.34, which is considerable given the equivocal effectiveness outcomes. Assuming a risk reduction of 1.5% in Grade ≥2 rectal toxicity with the use of SpaceOAR, it would cost $191,230.06 to avoid one additional case of Grade 2 or higher rectal toxicity. The data are too unreliable to permit calculations of cost utility metrics such as QALYs**.**

Recommendations

Given the limited and inconclusive evidence of the clinical benefit of SpaceOAR, and the high costs associated with its use at the MUHC:

Routine use of SpaceOAR in prostate cancer patients receiving radiotherapy is not-approved. This recommendation is subject to re-evaluation as and when new evidence becomes available.

CLINICAL PERTINENCE INITIATIVES

NOTE

The Clinical Pertinence Coordinating Committee (CPCC) of the MUHC was established in March 2018 with the goal of: identifying and prioritizing initiatives most likely to improve the appropriateness of care; supporting their implementation; and measuring results.

The CPCC convenes heads of all hospital missions, representatives from pharmacy, laboratories, imaging, upper administration, and the health technology assessment unit, as well as patient representatives.

The CPCC is currently chaired by Dr. Carolyn Freeman.

As summarized below, the Technology Assessment Unit provided support to the CPCC by way of human resources. TAU staff helped the CPCC to identify suitable projects and to implement them.

Development of a questionnaire for prioritization of clinical pertinence projects

Requestor

Carolyn Freeman, Chair, Clinical Pertinence Coordinating Committee

TAU Staff involved

Nisha Almeida, Nandini Dendukuri

Summary

In order to create a systematic process for the submission and selection of clinically pertinent projects, the TAU:

- Created a request form for clinicians to submit their proposals;
- Adapted the TAU recommendations checklist to create a similar tool for the prioritization of pertinence projects;

- Developed a project charter template for selected projects.

Educational intervention to improve blood transfusion

Requestor

Emily McDonald, General Internal Medicine

TAU Staff involved

Marie Belmonte

Background

- The MUHC currently does not have guidelines to curb overuse of unnecessary blood transfusions.
- An hour-long online educational intervention, Bloody Easy Lite, was proposed for all physicians (trainees and attending staff) who have the capacity to prescribe blood transfusions at the MUHC (adult sites) including RVH, MGH, Chest institute, MNI, and Lachine site.

Goal

- Reduce unnecessary blood transfusions, improve patient safety, and reduce associated direct and indirect costs

Project Description

- In July 2019 during orientation week, incoming residents would be given a presentation on the online course, and subsequently all residents would complete the online Bloody Easy Lite training modules and submit a completion survey.
- By direction of the CPDP, over the course of two years, July 2019-July 2021 we would aim to have all staff physicians (who transfuse blood at the MUHC) complete the course.

Early referral to palliative support to improve end-of-life care in advanced lung cancer patients at the MUHC

Requestor

Chantal Guevremont, Department of Pharmacy

TAU Staff involved

Nisha Almeida

Background

- There is concern that cancer patients at end-of-life (EoL) may receive sub-optimal care, particularly receiving aggressive, but ultimately futile, treatment in the 14 to 30 days before death.
- Indicators of non-beneficial treatment at end-of-life include chemotherapy or immunotherapy in the 14 to 30 days before death, hospitalizations, ICU admissions, and ED visits in the 30 days before death, and death in-hospital.
- Non-beneficial treatment leads to a reduction in the quality of life of both patients and their families, reduces survival time, and represents inefficient allocation of limited resources.
- Studies have found that referral to palliative support earlier in the course of the disease, and early discussion of advance care directives, can reduce non-beneficial treatment at end-of-life.

Goal

To reduce non-beneficial treatment at end-of-life by promoting early referral to palliative support for advanced lung cancer patients.

Project Description

- Multiple subgroup meetings were convened to evaluate physician interest and define the scope of the project.
- Literature review was carried out to identify relevant variables that can be used to develop a guideline.
- Meetings were held with personnel involved in the Data Warehouse project to determine if data could be obtained from there.

KNOWLEDGE TRANSLATION ACTIVITIES

Teaching Activities

- Dr. Nandini Dendukuri taught a workshop entitled “Evaluating a New Diagnostic Test in the Absence of a Perfect Reference Test: Applications in Health Technology Assessment” at the 2019 CADTH Symposium held in Edmonton, April 14-16.

Presentations

Oral

- Nisha Almeida presented “Herding cats: Corralling the subjectivity in HTA decision-making” at the 2019 CADTH Symposium held in Edmonton, April 14-16.
- Felipe Forero presented “Describing catheter performance and rTPA use in hemodialysis: Longitudinal analysis from a university-affiliated hospital centre” at the High-Value medical care symposium.

Poster

- Nandini Dendukuri presented “Offering Proton Beam Therapy for selected types of cancer in children and adults at the MUCH: A budget impact analysis” at the 2019 CADTH Symposium held in Edmonton, April 14-16.

Publications

Selected Peer-Reviewed Publications Related to Technology Assessment Activities:

- Almeida ND, Mines L, Nicolau I, Sinclair A, Forero F, Brophy JM, Mayo N, Dendukuri N. A framework for aiding the translation of scientific evidence into policy: The experience of a hospital-based technology assessment unit. Int J Technol Assess Health Care. 2019 Jan;35(3):204-211.

Work in Progress

HTA projects:

- Use of Alteplase to preventing catheter malfunction in hemodialysis (requested by André Bonnici, Department of Pharmacy)
- Evaluating the feasibility of integrating Apolipoprotein B tests alongside traditional lipid panel tests across the McGill RUIS (requested by Drs. Andre Dascal and Alan Sniderman)
- What is the added clinical value of pre-operative brain natriuretic peptide (BNP/NT-proBNP) in predicting post-operative cardiac complications in patients undergoing non-cardiac surgery across the MUHC RUIS? (requested by Drs. Andre Dascal and Gabriele Baldini)

Working papers for submission to peer-reviewed journals:

- Forero DF, Almeida ND, Hijal T, Cury F, Dendukuri N. Hydrogel Spacer for the Treatment of Localized Prostate Cancer with External Beam Radiation Therapy: A Systematic Review and a Cost Effectiveness Analyses.

HTA Symposium:

- TAU will organize a symposium titled “Health Technology Assessment in Practice” in July 2019 featuring invited speakers known for their contributions to Health Technology Assessment in Quebec at the hospital and provincial level.

TAU STAFF NEWS

- In September 2018, after 18 years of service, Ms. Lorraine Mines retired from her position as Administrative Technician of TAU. The unit is extremely grateful for her tireless contribution over the years.
- In October 2018, TAU welcomed Marie Belmonte as the Administrative Technician. Marie has enthusiastically taken on the challenge of organizing the HTA symposium and assisting with the many ongoing projects.

POSTSCRIPT

"The TAU attempts to adjust the services we offer to conform to the resources available in a transparent, logical, fair, and consistent fashion. While some of our recommendations have not supported the acquisition of a technology, and have thus "saved money", others have supported new developments because they have identified the benefits, and found them to be sufficient to justify the increased expenditure. Our sincere thanks are due to the many members of the MUHC who have assisted with data collection, to those who have served as Consultants, and to the members of the Committee who have dedicated many hours to the consideration of these problems."

Maurice McGregor