

APPLIED MATHEMATICS COLLOQUIUM

Date: Wednesday, February 24, 2016

Time: 3:30 – 4:30 pm

Location: MC Room 204

Cost-effectiveness of using a gene expression profiling test to aid in identifying the primary tumour in patients with cancer of unknown primary

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Abstract: Each year in Canada, approximately 5,000 new cancer cases (roughly 4% of new cancer cases) are of metastatic cancer types that are not readily classified and are thus diagnosed as cancer of unknown primary (CUP). We investigate the cost-effectiveness of a 2,000-gene-expression profiling test to help identify the primary tumor site when current clinicopathological diagnostic evaluation is inconclusive in patients with CUP. We built a decision-analytic-model, consisting of a set of Markov models, to project the lifetime clinical and economic consequences of different clinical management strategies for CUP. The model was parameterized using follow-up data from the Manitoba Cancer Registry, cost data from Manitoba Health administrative databases and secondary sources. The 2,000-GEP-based strategy compared to current clinical practice resulted in an incremental cost-effectiveness ratio (ICER) of \$44,151 per quality-adjusted life years (QALY) gained.