Supplementary Table 1: Examples of Economic Evaluations of Personalized Medicine Interventions in Canada

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| First Author, year | Design (Form Data, Time H, perspective,) | Personalized Medicine Intervention | Population | Results |
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| Dranitsaris, 2002(18) | CMA, third-party payer 5 years | a) HER2 test at diagnosis (stages I-III)  b) HER2 test at metastatic breast cancer | Pre- and post-menopausal  women diagnosed with  stages I-III breast cancer | PMI cost-saving |
| Marra, 2002(52) | CEA, third-party payer, one-year time horizon | a) Polymerase chain reaction to determine polymorphisms leading to TPMT deficiencies prior to azathioprine with a reduction in dose;  b) no testing | Individuals with rheumatologic conditions requiring azathioprine | PMI cost-saving (14 CAD) with fewer adverse events (5%) |
| Dendukuri, 2007 (19) | CEA, lifetime, third-party payer | a-g) Seven unique testing strategies for HER2 Breast Cancer Status  h) screening all patients followed by confirmatory testing of 2+ scores with fluorescence in situ hybridization | Patients who received a new diagnosis of invasive breast cancer with immunohistochemistry | Cost per accurate diagnosis of three best strategies  5) 3351–12 230 CAD  6) 3913–13 630 CAD  7) 5315–13 260 CAD  Compared to (a) |
| Mittmann, 2009 (53) | CUA/CEA, third-party payer, 18-19 months | a) KRAS test/cetuximab plus standard care  b) KRAS test /standard care\* | Patients with chemorefractory colorectal cancer | PMI 186,761 CAD /QALY vs. 299,613 CAD /QALY |
| Donnan, 2011(54) | CEA, third-party payer, 3 months | a) Dose based on patient weight, using body surface area If severe adverse event, a TPMT genotype test is conducted  b) TPMT gene test, then (a)  c) TMPT enzyme activity, then (a) | Children with acute lymphoblastic leukemia receiving 6-mercaptopurine starting dose 75 mg/m2  daily | PMI no survival benefit and (b) 277 CAD (c) 298 CAD more per child |
| Chen, 2011 (55,56) | CUA/CEA, third-party payer, lifetime | a) EGFR + then gefitinib  b) No testing then conventional chemo | Patients with advanced non-small cell lung cancer | PMI 81,071 CAD /QALY |
| Najafzadeh, 2012(57) | CUA, third-party payer, 10-year time horizon | a) Fine-needle aspiration biopsy (FNAB) + cytologic standard (The Bethesda System for Reporting Thyroid Cytopathology ) (current practice)  b) Fictitious molecular, cytopathologic, or gene-based diagnostic adjunct to (a) | Individuals diagnosed with thyroid nodules requiring investigation | PM intervention cost-saving (1087 CAD /person) with more QALYs (0.046) |
| Hannouf, 2012(21) | CUA, third-party payer, lifetime | a) 21-gene recurrence score assay plus standard care  b) standard care | Women with early-stage estrogen- or progesterone-receptor-positive, axillary lymph-node negative breast cancer | PMI cost-savings in pre-menopausal women otherwise  60,000 CAD /QALY |
| Paulden, 2012(20) | CUA, third-party payer, lifetime | a) Strategies involving 21-gene recurrence score assay plus standard care or Adjuvant! Online (AOL) + standard care (2 regimens)  b) Standard care (2 regimens) | Women with early-stage estrogen- or progesterone-receptor-positive, axillary lymph-node negative breast cancer | PMI cost-saving or <50,000 CAD /QALY in high to low AOL risk |
| Health Quality Ontario, 2012 (17) | CUA, third-party payer, lifetime | a) KRAS testing + anti-EGFR (3 regimens)  b) no KRAS and treat (3 regimens)  c) no KRAS and no treat | Patients with advanced chemorefractory colorectal cancer | PMI less costly and effective than (b) PMI more costly and effective than (c) |
| Davis, 2013 [in press] | CUA, third-party payer, lifetime | a) 21-gene recurrence score assay plus standard care  b) standard care | Female patients with estrogen receptor-positive (ER+), HER2/neu negative (HER 2-) by immunohistochemistry (IHC) or fluorescence in situ hybridization (FISH), lymph node-negative (N-) stage I-II breast cancer | PMI 6,630 CAD /QALY |