Appendix 5: Rates of Surgery and Wait-Times for Indigenous and non-Indigenous populations

Renal Transplantation. All six studies on renal transplantation found that patients of Indigenous identity were significantly less likely to receive a renal transplant for end-stage renal disease(1-6). After adjustment for age, sex, comorbidities and cause of renal disease, relative effect sizes ranged from 0.34-0.54 (where relative effect size <1 indicate lower rates of transplant in Indigenous populations). It should be noted that five of these studies derived data from the same database and during overlapping study periods and therefore there is potential overlap between study populations (2-6). Two studies found that wait-times for transplant were longer for Indigenous compared to non-Indigenous populations (1.2 vs 1.5 years, p-value=0.03 and 1.5 vs 2.1 years, p-value<0.01) (7,6).

Caesarean section. Five studies (8–12) evaluated caesarean section rates in First Nation parturients. Four (9–12) studies found that rates were 3-5% lower in First Nations women (adjusted OR 0.67, 95%CI 0.62-0.71, p<0.01 (12), rates 18% vs 13%, p<0.0001 (11), 39% vs 42% p=0.345 (8) and 35% vs. 40%, p<0.001 (9) for non-Indigenous and First Nations populations respectively) Two of these studies (8,9) specifically compared rates of caesarean section in First Nations compared to non-Indigenous women with diabetes in pregnancy. One study assessed indications for caesarean section in nulliparous First Nations parturients and found a decreased rate of caesarean section for the indication of labour dystocia, non-reassuring fetal monitoring and elective cases (risk difference -1.9 per 100 cases, 95%CI -2.5 to -1.3, -2.0, 95%CI -2.5 to -1.6 and -2.4, 95%CI -2.7 to -2.1 respectively)(10). The risk difference remained significant after adjustment for maternal characteristics (maternal age, prepregnancy body mass index, pre-existing or gestational hypertension, pre-existing or gestational diabetes as well as after adjustment for distance from residence to nearest hospital.
Cardiac Surgery. Two studies found First Nations patients presenting to hospital with an acute myocardial infarction (AMI) to be significantly less likely than patients who were not First Nations to undergo angiography (13,14), with one study reporting an adjusted OR of 0.73, 95% CI 0.62-0.87 (13). Both studies found that patients of First Nations identity had similar rates of coronary artery bypass following an AMI. One retrospective study assessing overall rates of cardiac surgery of any type found Indigenous patients had significantly decreased rates of cardiac surgery (age and sex adjusted rates 0.76 vs. 1.15 per 1000 population per year; P < 0.001) (15). Subgroup analysis of those with urban residence revealed that rates of cardiac surgery in Indigenous patients were one-quarter those of non-Indigenous (0.31 vs 1.04 per 1000).

Diabetic amputation. Three studies found an association between Indigenous identity (First Nations and Métis) and increased rates of amputation for diabetic complications (16-18). The proportion of Indigenous compared to non-Indigenous patients requiring amputation in each study was 24% vs. 15% (p<0.05) (18), 26% vs. 17% (p<0.05) (17) and 3.39 vs. 0.19 per thousand (p<0.05)(16). One study also assessed time to amputation and found Indigenous populations to have a significantly decreased time to amputation from initial clinic visit (50 weeks for Indigenous vs. 64 weeks for non-Indigenous, p<0.01) (18).

Other. The remaining three studies involving data on utilization of surgical services found increased rates of surgical treatment for First Nations compared to non-Indigenous individuals with uveitis (19), increased rates of operative treatment for First Nations and Métis compared to non-Indigenous patients admitted to hospital for burns (20) and decreased rates of hip or knee arthroplasty (rate ratio adjusted for age and sex: 0.48, 95%CI 0.47-0.49) (21) in Indigenous compared to non-Indigenous patients with osteoarthritis.

References