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## Hypertensive Disorders in Pregnancy: Partnering Health Services Research with Guidelines to Impact Maternal and Perinatal Outcomes

Diane Sawchuck, Peter von Dadelszen  
*University of British Columbia, Vancouver, BC, Canada*

**Background:** The hypertensive disorders of pregnancy (HDP), in particular pre-eclampsia, are the second leading cause of maternal mortality in the world, and the primary cause of maternal mortality in Canada. HDP affects 5-10% of pregnancies and the incidence is increasing due to increased maternal age, increased BMI and increased multiple pregnancies.

**Purpose:** The purpose of this project is to reduce the personal, family, and societal burden of maternal and perinatal morbidity and mortality associated with preeclampsia by implementing a clinically tested strategy (the pre-eclampsia integrated estimate of risk (PIERS) outcome prediction model) to identify those women who are at greatest risk of developing life-threatening complications of preeclampsia.

**Methods:** Model of active guideline implementation that includes knowledge translation tools to guide standardized clinical assessment and surveillance of women admitted to hospital with HDP and specific management protocols, based on the PIERS outcome prediction model. Pre and post population surveillance of specific maternal and newborn outcome indicators were used to evaluate population impact.

**Results:** 17,739 women were diagnosed with HDP in the province from 2000/2001 to 2007/2008. Outcomes were compared pre guideline implementation (2000/2001 to 2005/2006; n=13,150) and post-guideline implementation (2006/2007 to 2007/2008; n=4,589). The combined adverse maternal outcomes decreased from 277/13,150 (2.1%) to 59/4,589 (1.3%); RR 0.67 [95% CI 0.53, 0.85]. The combined adverse perinatal outcomes decreased from 233/13,672 (1.7%) to 56/4,749 (1.2%) RR 0.75 [95% CI 0.59, 0.95]. The median maternal length of stay decreased from 89 to 83 hours, translating into an estimated cost saving of \$250,000-\$500,00 per annum.

**Discussion:** The provincial success of decreasing both maternal and newborn morbidities associated with HDP has directed us to strategize both national implementation of the guidelines and international validation of a "miniPIERS" model for developing countries. This validation is currently being conducted in Africa, Pakistan, Brazil, Fiji and China.