

30 TRENDS IN STATE/POPULATION-BASED DOWN SYNDROME (DS) SCREENING AND INVASIVE PRENATAL TESTING WITH THE INTRODUCTION OF FIRST TRIMESTER COMBINED DS SCREENING, SOUTH AUSTRALIA 1995-2004 PETER MULLER<sup>1</sup>, CHRIS WILKINSON<sup>1</sup>, ROBERT COCCIOLONE<sup>2</sup>, RHONDA HUTCHINSON<sup>2</sup>, ERIC HAAN<sup>1</sup>, ANNABELLE CHAN<sup>3</sup>, <sup>1</sup>Women's and Children's Hospital, Perinatal Medicine, North Adelaide, South Australia, Australia, <sup>2</sup>Women's and Children's Hospital, Genetic Medicine, North Adelaide, South Australia, Australia, <sup>3</sup>Women's and Children's Hospital, Department of Genetic Medicine, Adelaide, South Australia, Australia, <sup>4</sup>Department of Health, Pregnancy Outcome Unit, Adelaide, South Australia, Australia

**OBJECTIVE:** A state-based first trimester combined DS screening program was introduced in South Australia (population 1.54 million) in 2000. We reviewed trends in utilization of maternal serum DS screening and invasive prenatal testing (CVS and amniocentesis) before and after the introduction of this program.

**STUDY DESIGN:** A retrospective population-based study was performed on the utilization of DS screening and prenatal invasive testing in South Australia from the South Australian Birth Defects Register and the Department of Cytogenetics at the Women's and Children's Hospital (South Australia's sole cytogenetics laboratory) from 1995 to 2004. Chi-square tests were used to evaluate trends in utilization of first and second trimester DS screening and invasive prenatal testing.

**RESULTS:** There was an average of 18,031 confinements per year from 1995-2004. During this period, there was a significant decrease in second trimester DS screening from 75% of confinements in 1995 to 28% in 2004 ( $p < 0.0001$ ), and a significant increase in first trimester combined screening, 0.8% in 2000 to 44% in 2004 ( $p < 0.0001$ ). Despite a significant increase in the proportion of confinements with maternal age  $\geq 35$ , 12.5% in 1995 to 17.9% in 2004 ( $p < 0.0001$ ), this age group underwent less invasive prenatal testing, 43% in 1995 to 27.4% in 2004 ( $p < 0.0001$ ) and the rate of total invasive testing also fell in the state, 9.3% in 1995 to 7.9% in 2004 ( $p < 0.0001$ ). There was a significant decrease in the number of invasive prenatal tests to detect one aneuploidy fetus from 1:39 in 1995 to 1:23 in 2004 ( $p < 0.001$ ).

**CONCLUSION:** The introduction and increase in utilization of first trimester combined DS screening has been associated with more effective utilization of invasive prenatal testing in South Australia.

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