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| Supplementary Table 1. Adjusted odds ratios (OR) and 95% confidence intervals (CI) for associations between influenza vaccination and non-cardiac birth defects using standard multivariable adjustment, National Birth Defects Prevention Study 2006 to 2011.  |
|   | Adjusted, Limited Modelc,d |
| Birth Defecta,b | OR (95% CI) |
| Central nervous system |  |
| Any neural tube defectse | 0.89 (0.42, 1.89)  |
| Hydrocephaly | 0.90 (0.39, 2.10) |
| Eye and ear |  |
| Anophthalmia/microphthalmia | 1.59 (0.62, 4.10) |
| Cataracts | 0.73 (0.29, 1.83) |
| Anotia/microtia | 0.68 (0.29, 1.58) |
| Orofacial |  |
| Choanal atresia | 1.54 (0.59, 4.04) |
| Oral clefts | 0.95 (0.71, 1.26) |
| Cleft lip w/wo cleft palate | 0.95 (0.68, 1.33) |
| Cleft palate | 0.94 (0.56, 1.58) |
| Gastrointestinal |  |
| Esophageal atresia | 1.13 (0.65, 1.96) |
| Duodenal atresia/stenosis | 1.86 (0.87, 3.98) |
| Anorectal atresia/stenosis | 0.93 (0.52, 1.66) |
| Genitourinary |  |
| Hypospadias second/third degree | 1.22 (0.86, 1.73) |
| Bilateral renal agenesis/hypoplasia | 1.59 (0.55, 4.63) |
| Musculoskeletal |  |
| Limb deficiencye | 1.02 (0.62, 1.67) |
|  Longitudinal limb deficiency | 1.39 (0.69, 2.83) |
|  Transverse limb deficiency | 0.69 (0.33, 1.43) |
| Craniosynostosis | 1.25 (0.89, 1.77) |
| Diaphragmatic hernia | 1.21 (0.69, 2.15) |
| Omphalocele | 0.55 (0.17, 1.78) |
| Gastroschisis | 0.80 (0.46, 1.37) |
| aExposure window is one month before pregnancy through the first pregnancy month for neural tube defects and one month before pregnancy through the third pregnancy month for all other defects. |
| bNeural tube defects analysis included 63 exposed and 4874 unexposed control children; hypospadias analysis included 87 exposed and 2457 unexposed control children; all other analyses included 197 exposed and 4740 unexposed control children. |
| cCounts in adjusted analyses were slightly lower than presented because of missing covariate values. |
| dLimited model adjusted for estimated date of delivery year and season, maternal age at delivery, maternal race/ethnicity, plurality, cigarette smoking, alcohol use, low folate intake, and, for neural tube defects, folate antagonist medication use. |
| eSubtypes of neural tube defects with <5 exposed case children are not presented: anencephaly, encephalocele, spina bifida.fSubtypes of limb deficiency with <5 exposed case children are not presented: intercalary limb deficiency, longitudinal preaxial limb deficiency, NOS limb deficiency. |

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| Supplementary Table 2. Odds ratios (OR) and 95% confidence intervals (CI) for associations between influenza vaccination and non-cardiac birth defects excluding children with mothers who reported influenza vaccination between 2 and 3 months before conception, regardless of actual vaccination status during the exposure window, National Birth Defects Prevention Study 2006 to 2011.  |
|   | Case Children | Adjusted, Limited Modelc,d |
| Birth Defecta,b | Exposed/Unexposeda | OR (95% CI) |
| Central nervous system |  |  |
| Any neural tube defectsf | 9/911 | 1.02 (0.48, 2.18) |
| Hydrocephaly | 7/190 | 0.91 (0.39, 2.11) |
| Eye and ear |  |  |
| Anophthalmia/microphthalmia | 5/86 | 1.67 (0.65, 4.34) |
| Cataracts | 5/154 | 0.74 (0.29 1.85) |
| Anotia/microtia | 7/260 | 0.72 (0.31, 1.67) |
| Orofacial |  |  |
| Choanal atresia | 5/64 | 1.55 (0.60, 4.04) |
| Oral clefts | 70/1835 |  0.99 (0.74, 1.32) |
|  Cleft lip w/wo cleft palate | 46/1238 | 0.97 (0.69, 1.36) |
|  Cleft palate | 24/597 | 1.02 (0.65, 1.60) |
| Gastrointestinal |  |  |
| Esophageal atresia | 15/296 | 1.27 (0.73, 2.21) |
| Duodenal atresia/stenosis | 8/113 | 1.78 (0.83, 3.84) |
| Anorectal atresia/stenosis | 12/376 | 0.91 (0.50, 1.67) |
| Genitourinary |  |  |
| Hypospadias second/third degree | 61/1141 | 1.30 (0.91, 1.84) |
| Bilateral renal agenesis/hypoplasia | 5/61 | 1.60 (0.55, 4.67) |
| Musculoskeletal |  |  |
| Limb deficiencyg | 23/474 | 1.04 (0.63, 1.70) |
|  Longitudinal limb deficiency | 10/170 | 1.48 (0.72, 3.01) |
|  Transverse limb deficiency | 11/285 | 0.70 (0.34, 1.45) |
| Craniosynostosis | 42/740 | 1.21 (0.85, 1.72) |
| Diaphragmatic hernia | 13/329 | 1.23 (0.68, 2.22) |
| Omphalocele | 6/142 | 0.57 (0.18, 1.85) |
| Gastroschisis | 18/672 | 0.72 (0.42, 1.25) |
| aExposure window is one month before pregnancy through the first pregnancy month for neural tube defects and one month before pregnancy through the third pregnancy month for all other defects. |
| bNeural tube defects analysis included 55 exposed and 4828 unexposed control children; hypospadias analysis included 83 exposed and 2436 unexposed control children; all other analyses included 189 exposed and 4694 unexposed control children. |
| cCounts in adjusted analyses were slightly lower than presented because of missing covariate values. |
| dLimited model adjusted for estimated date of delivery year and season, maternal age at delivery, maternal race/ethnicity, plurality, cigarette smoking, alcohol use, low folate intake, and, for neural tube defects, folate antagonist medication use. |
| eExpanded model adjusted for primary model covariates plus education, body mass index, gravidity, hypertension during pregnancy, fever, and respiratory illness.  |
| fSubtypes of neural tube defects with <5 exposed case children are not presented: anencephaly, encephalocele, spina bifida. |
| gSubtypes of limb deficiency with <5 exposed case children are not presented: intercalary limb deficiency, NOS limb deficiency |