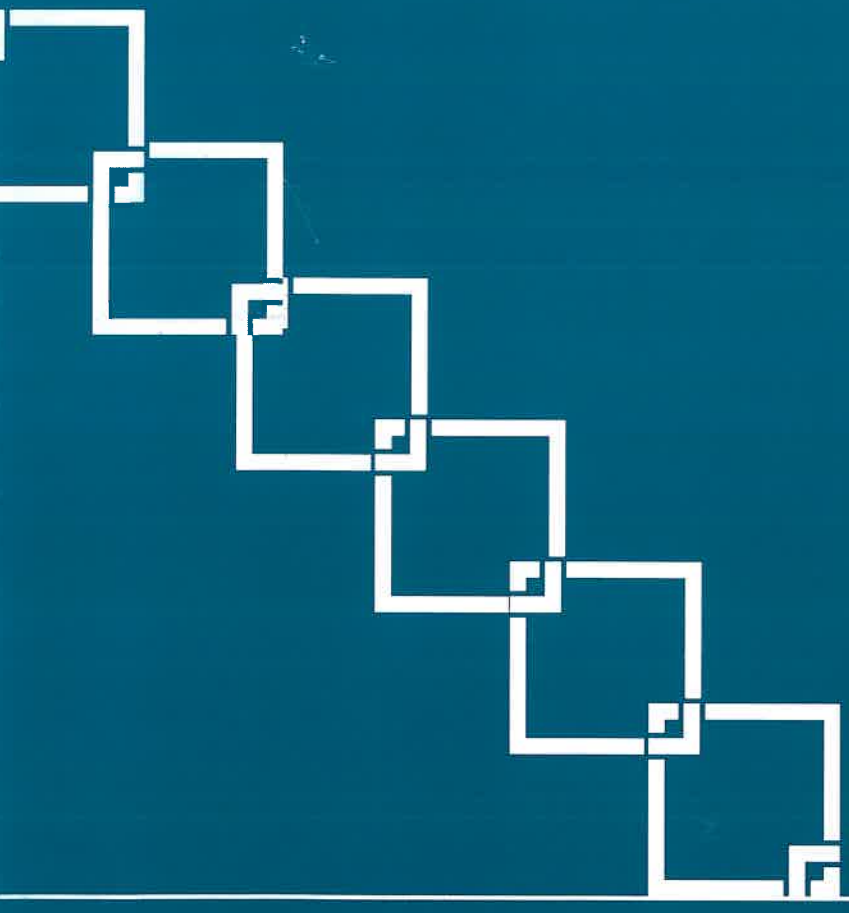
NORA Symposium 2003

Working Partnerships: Applying Research To Practice



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Reported Parental Occupational Exposures and Birth Defects

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There have been many published reports suggesting an etiologic role for various occupational exposures (anesthetic gases, solvents, metals) in the development of certain birth defects (limb defects, cardiac defects, neural tube defects). However, attempts to confirm these reports have yielded inconsistent results. In part, this may be due to difficulties in determining exposure status. Parental occupational exposures were usually classified using industry or occupational titles, which are only a proxy for actual exposure. Even where specific screening questions are used, results may be inaccurate. A previous study using industrial hygienist-assessed exposure as the gold standard found that the sensitivity of maternal self-report of agricultural chemicals was quite low (14%).

The National Birth Defects Prevention Study (NBDPS) collects information on occupational exposures both in the form of job history and as responses to five questions about specific types of exposures. This information can be extremely important in elucidating current questions about risks of maternal job exposures to the fetus. However, before associations between specific exposures and specific malformations are explored, it will be necessary to assure that exposure information is as accurate as possible. Therefore, in collaboration with researchers at NIOSH, we will use industrial hygienists to review parental reports of occupation in case groups of interest and assign exposure status to these cases for selected chemicals. If the selected chemicals overlap those for which the NBDPS inquires specifically, we will compare the self-reported data with the industrial hygiene assigned exposures.

This study has many advantages over previous studies of parental occupational exposure and birth defects, including a larger number of cases, greater diagnostic accuracy, the ability to control for confounders, and a short recall period. The multi-center nature of the study gives the opportunity to investigate a range of exposures that might not be possible in a study limited to only one state or metropolitan area. If analyses of these data show increased risks of certain birth defects with parental occupational exposures, then exposure limits can be reassessed.