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**The Marshfield Epidemiologic Study Area (MESA): a Unique Resource  
for Population-Based Research**

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**Background:** The Marshfield Clinic Research Foundation (MCRF) maintains a unique resource for epidemiologic and clinical research concerned with the study of health-related events in populations. Founded in 1991, the Marshfield Epidemiologic Study Area (MESA) is a population cohort composed of a defined geographical region (24 Wisconsin zip codes) where the great majority of residents choose to receive medical care at Marshfield Clinic, its regional centers, and affiliated hospitals. MESA is divided into Central and North zip code groups.

**Methods:** MESA residency data is maintained passively through daily updates to Marshfield Clinic administrative data (new patients, HMO enrollment, births, deaths, and name, address and account changes). Active evaluation and adjustments are done to identify out-migration through utility disconnects, death index, and validation surveys. Research is accomplished through linking MESA residency with Marshfield Clinic's high quality electronic data: combined medical record (1992+), diagnoses (1960+), lab results (1985+), procedures (1985+), insurance claims (1985+), Regional Early Childhood Immunization Network (RECIN, 1997+), and registries (tumor, chemotherapy, heart care, neonatal). MESA-based research can quantify the occurrence of illness (incidence and prevalence), describe the full clinical spectrum of disease in the general population, and provide sampling frames for study cohorts or selection of population-based cases and controls.

**Results:** Validation surveys and comparisons with state data show a high percent of population capture (97% MESA Central, 92% MESA North) including, deaths (99% MESA Central, 97% MESA North), hospitalizations (95% MESA Central, 87% MESA North), and outpatient visits (90% MESA Central, 86% MESA North). Since its inception, MESA has contributed to over 50 publications in research areas including injuries, rural women's health, infectious diseases, antibiotic use, cancer screening, and heart disease. Current MESA-based research areas include influenza vaccine effectiveness, herpes zoster, skin cancer, asthma, lupus, Barrett's esophagus, defibrillator eligibility, cardiac resynchronization therapy, and atrial flutter/fibrillation. MESA has also been an integral part of other major MCRF research endeavors including the Vaccine Safety Datalink and the Personalized Medicine Research Project.

**Conclusions:** MESA is a unique resource for conducting population-based epidemiologic and clinical research that can have a direct impact on improving patient care.