Chronic Disease Epidemiology

- Provides an epidemiologic understanding of prevention, management, and control of chronic diseases in Michigan
  - support planning, targeting, & evaluation needs of the department
  - identify new trends in chronic disease and its prevention/management
# General Model of Chronic Disease

## Primary Prevention
- Behavior Modification

## Secondary Prevention
- Early identification and modification

### General population
- Susceptibility
- Subclinical Disease
- Clinical Disease
- Recovery, Disability, Death

- Secondary Prevention
  - Behavior Modification

- Clinical management
  - Self management
  - Health Utilization
Core Public Health Services

- Surveillance
- Communication
- Consultation
- Evaluation
- Investigation
- Innovation
Surveillance

Percentage of respondents reporting binge drinking
Adults by State, Behavioral Risk Factor Survey, 2006
Surveillance of “new” diseases

Epilepsy’s Impact on Quality of Life, Michigan Adults, 2005

Seizures in Past 3 Months

- None 70%
- One 12%
- 2 or more 18%

Epilepsy or Treatment Interfered with Normal Activities in Past Month

- Slightly 36%
- Moderately 28%
- Quite a bit 20%
- Extremely 16%

Source: 2005 Michigan Behavioral Risk Factor Survey, MDCH Chronic Disease Epid Section
Communication - reports

Health Risk Behaviors in the State of Michigan

Detroit – The Epicenter of Asthma Burden in Michigan

The State of Arthritis in Michigan

Michigan BRFSS Surveillance Brief

Preventive Health Practices by Race/Ethnicity & Local Health Department

Number of Deaths and Age Adjusted Diabetes-Related Mortality Rates, by County

African American Health and Hispanic Health Fact sheets

Diabetes in Michigan

Asthma Prevalence, Severity, and Management for Michigan Adults

Health Disparities by Legislative District

Annual Report on Asthma Deaths
Communication

Conferences
- MI Epidemiology Conf
- MI Premier Public Health Conf
- MI Information Integration Conf
- Am College of Rheumatology
- Behavioral Risk Factor Conf
- Council of State & Territorial Epid
- NHLBI & CDC Asthma Conf

Publications
- Am J of Health Promotion
- Am J of Public Health
- Archives of Internal Medicine
- Chest
- Epidemiology
- Health Promotion Practice
- J of Asthma
- J of Occupation & Industry
- J of School Health
- Morbidity & Mortality Weekly
- Neurology
- Pediatrics
- Preventive Medicine
- Public Health Reports
- Public Opinion Quarterly
Other communication….

- Grant applications and progress reports

- Powerpoint/speaker’s kits
  - Arthritis
  - Asthma in Michigan
  - Diabetes
  - Health Disparities
  - CU CO training

- Subsequent use …
  - Websites
  - State Plans
  - Newsletters (Asthma, family history)
  - News reports
  - Healthy Michigan report
  - Critical Health indicators
  - Kid’s Count report
Consultation

- Asthma case management sustainability
- HIV Prevention Business case for business leaders
- Recommended collection/use of race/ethnicity data
- Model of potential impact of physical activity & nutrition interventions

- Kidney Foundation of MI Scientific Advisory Board
- Chronic Disease Epidemiology Capacity Building
- **NACDD Arthritis Council**
- CDC Asthma surveillance indicators development
- National Asthma Education and Prevention Program
- National Workshop to Reduce Asthma Disparities
Specialized skills for consultation

- Proficient in use of advanced software: ARCView GIS, SAS, SUDAAN, SPSS, website
- Survey design, conduct, and analysis
- Experience in development and use of registries
- Routine use of Medicaid, hospitalization and other administrative data sets
- Evaluation experience
Evaluation

- Compare need for and current location of arthritis programming to aid in expansion & relocation of services
- Arthritis epidemiologist assists Arthritis Foundation in developing process to routinely evaluate their own programs
- BRFS data to assess smoke-free policy impact
Process: Materials Distributed During Outreach Activities, FY2007 to Date

Percent\(^1\) of Children (≤18 yrs) with Persistent Asthma\(^2\) with ≥1 Inhaled Corticosteroid Medication\(^2\), Medicaid\(^3\), Coalition Core Areas and Michigan, 2001-2005

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1. Age-adjusted to 2000 US Standard population
3. Medicaid population restricted to those continuously enrolled in Medicaid with full coverage and no other insurance.
Investigation

- The Asthma Mortality Review, an investigation into the preventable causes of asthma death in children and young adults in Michigan.

- A review of the risk factors and response to sudden cardiac deaths is also in development.
Innovation

- New sources of surveillance data
- Chronic conditions flag for MCIR
- Lupus Registry
- Gestational diabetes project
Epidemiology is essential at all stages of public health practice

Identify need:
Collect/analyze/interpret chronic disease data. Quantify risk factors.

Target Solutions:
Interpret data & literature to help decision makers target programs & policies.

Take Action:
Ensure data collected. Review progress & suggest improvements.

Assess impact:
Design & implement sound evaluations.