Michigan’s Statewide Data Warehouse

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MDW: A Critical Statewide Resource

- First Medicaid DW in nation ('93 pilot)
- Early focus on TANF, Medicaid fraud
- Growth accelerated after 2000
- Now, more than 9,000 users from across Michigan state government (One of the most broadly used state government enterprise DW in nation)
- Has transformed outcomes (health/human services) and saved hundreds of millions of $$
DW is State’s “Information Backbone” – and sharing data/info is key to results!

**Michigan’s Enterprise Data Warehouse**

- **DHS Services**
  - Dept. Human Services
  - Child Support Enforcement
- **DCH Data**
  - Community Health
- **Supreme Court**
  - Michigan Courts
- **Rev & Tax**
  - Treasury
- **Non-Gov. Homeless Providers**
- **Michigan Courts**
  - Dept. Human Services
  - Community Health

- **Child Support Enforcement**
- **DHS Services**
- **DCH Data**
- **Supreme Court**
- **Rev & Tax**
- **Non-Gov. Homeless Providers**

- Welfare Eligibility Data
- Welfare History Information
- Child Day Care
- Child Day Care Payment History
- Electronic Benefit Transfer
- Child & Family Services Data
- Services Provider Data
- Foster Care & Adoption Data
- Children’s protective services
- FAP Audit –Find and Fix
- Wage and Unemployment Data

- DOC - Corrections data
- DNR – Hunting Licenses
- MSP – Personal Protective Orders
- Federal – Various
- MDOS-Driver License
- Treasury-New Hire
- Treasury- tax data
- DCIS - Professional Licenses
- Child Support Data
- Worker’s Compensation or Unemployment Data

- Medicaid Beneficiary
- Medicaid Provider
- Medicaid Claims
- Death Certs & Stats
- Birth Certs & Stats
- Immunization Registry (MCIR)
- WIC
- Lead Screening
- Epidemiology
- Substance Abuse

- New Hire
- Federal Case Registry
- MI Individual Tax
- Federal Individual Tax
- MI Business Tax
- Federal Business Tax
- U. S. Customs Data
- Cigarette & Tobacco Tax

- COURT
  - Criminal
  - Civil
  - Probate
  - Traffic
  - Juvenile
- CASES
- OFFENDERS

- Usage and cost data for homeless services
MDW: Usage Examples

- Department of Community Health
  - Health care fraud
  - Medicare Part D conversion
  - Health care analysis and outreach
  - Managing Managed Care
  - Study patterns of use
  - Epidemiology studies
  - Analyzing mental health care
How Information Sharing Can Help

Calculate how many doses were administered under Medicaid and how much Medicaid pays in one month.

Determine immunization levels by provider, or for providers within a qualified health plan.

Identify participants in other programs (e.g. WIC), that are overdue for vaccines.

ANSWER QUESTIONS to improve health care & control costs:

- Are there children overdue for vaccines?
- How many duplicate children are in the immunization registry?
- How quickly is a child added to the registry after birth?
How Information Sharing Can Help

**Newborn Screening**

- **Birth, Death Records**
- **Medicaid**
- **Newborn Metabolic and Hearing Screening**
- **Child Immunization**
- **Other Programs**

**Match screen records with birth certificates to identify newborns who have not received hearing screens and/or who have not received a birth certificate.**

**Match children with positive metabolic screens to Child Immunization Registry data, particularly those with Sickle Cell Anemia, to assure they are receiving immunizations, since they are at increased rate of infection.**

**Link screen records to Medicaid beneficiaries to ensure that they are receiving screens, as well as to help identify current primary care physicians.**

**Assess whether infants and families are utilizing available programs (Medicaid, WIC).**
MDW: Usage Examples

- Department of Human Services
  - Fraud Detection
  - Error Correction
  - Foster Care (Family to Family)
  - Policy Improvements
  - Ad-hoc responses to the field and the legislature
  - Parent location for Child Support
  - Improve accuracy of grants
Department of Human Services

Enterprise Data Sharing = Program Actions and Results

**Uncovering Child Day Care Fraud**

**Actions**
- Michigan’s First-in-the-nation Reverse Wage Match links child day care benefits with wages data
- Analysts establish parameters for potential fraud hits (e.g., correlating high level of day care benefits due to “employment” but no income reported in wage data)
- Additional data sharing is expected to exponentially increase fraud detection

**Results**
- More than $17 million in fraud identified since project implemented (2004)
- Judicial system has established restitution for nearly $8 million
- Projected annual savings of $13 million
- Greater “hit rate” for investigators thanks to clean, shared data
- Reduced investigation time since analysts are pulling data from one central source

Through data sharing and advanced analytics, DIT Office of Inspector General (OIG) specialists and agents conduct “reverse wage match” analysis to identify clients who receive a high level of day care benefits due to “employment”, but have low or no income being reported in wage data.
MDW: Usage Examples

- Department of Treasury
  - Supports tax audit
  - Data exploration
  - Validate tax filings against other agency information
Latest Initiative: SHADoW

- Statewide Homeless Assistance Data online Warehouse (SHADoW)

A de-identified research database comprised of information from Human Services, Community Health and local Homeless services providers optimized for longitudinal, cost-based studies.
Latest Initiative: SHADoW

- Optimized for longitudinal, cost-based studies
- Client-Event model
  - Client data
    - DHS events
    - DCH events
    - Homeless provider events
SHADoW Sample Report

SHADoW Report Results For “Entered Shelter” – January 2005
38 People Found

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<th>Cost</th>
<th>Event</th>
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SHADoW: Possible Questions

- What is the cost of supporting the homeless?
- What patterns of service usage relate to patterns of homelessness?
- How many foster care children end up homeless and how do they differ from those who do not?
- How do changes in state programs and allocations impact the homeless population and the private sector providers?
- How effective are our efforts to help the homeless?
- What are the trends and patterns of homelessness that can direct policy makers with strategic directions?
SHADoW: Future

- Add new agencies to the SHADoW database
  - Corrections
  - Education
  - MSHDA
- Complete the implementation of SHADoW as a production system
- Complete the user friendly ad-hoc and reporting front-end for researchers
Michigan’s Data Warehouse

- The data warehouse provides one place for multiple agencies and organizations to get information about large segments of Michigan's citizen's and the government efforts to serve them. The warehouse has created a demand for information in the agencies that use it. Since its inception more than half a billion dollars in savings and benefits have been realized.
Michigan’s Data Warehouse

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