

# **Enterprise Business Intelligence Solutions**

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# Purpose of Today's Session

- **Provide an overview to the Ingenix (formerly Bull Services) Enterprise Business Intelligence approach and how it improves program outcomes**
- **Examples of enterprise-wide BI solutions in California, New York, and Minnesota state agencies, including Financial Benefits/Return on Investment**

# How to Get There: Business Intelligence

## A Definition:

BI is the process of linking and capturing raw data, often from disparate sources and databases, then **transforming it into information and knowledge** that can be proactively used to improve your “business” operations and your decision-making

Business  
Intelligence

data

Information

Knowledge

Excellence

# BUT, BI is **MORE** than Technology

**BI technology is vitally important, to be sure, but equally important are the people, processes, expertise, and methodology you have access to achieve the maximum benefit from a BI solution.**

**It's about analytics and results, NOT transaction processing**

Excellence

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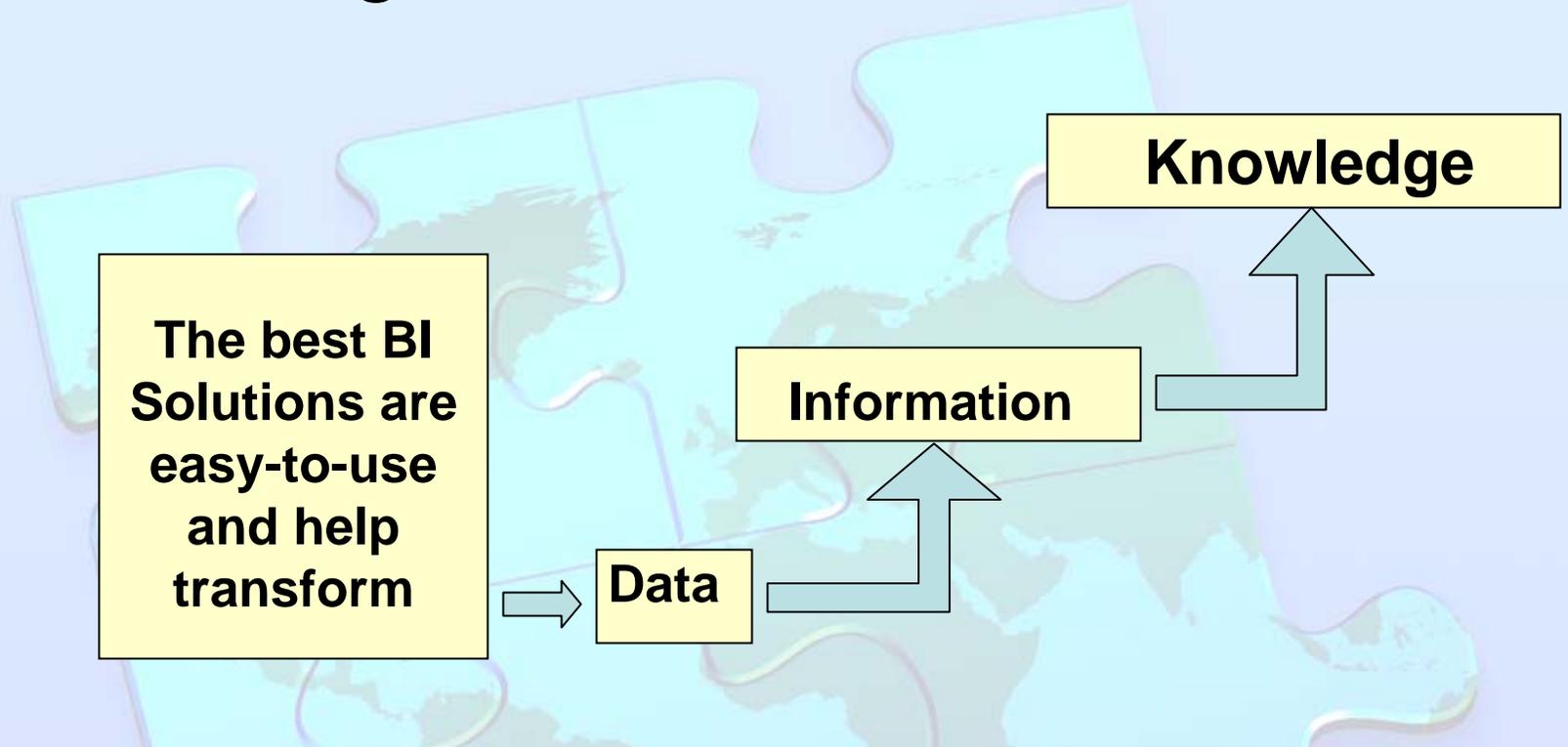
# Need for a Framework Solution

What we need is information, not just data, that gives us the knowledge that is relevant to our decision making....

We need a system that has built-in intelligence capabilities with a broad set of tools and services that supports our business decisions and can change as our needs change

*State HHS Official*

# Moving to the Next Level



**In the words of one State Agency Cabinet Secretary:**

**“We have plenty of data, we don’t have information or knowledge.”**

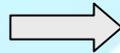
# What do We Mean by Knowledge? A Medicaid Example

## Knowledge

Analyze oxycontin prescriptions filled by pharmacy and compare with: a.) the stated length of the prescription and, b.) the frequency with which individual recipients filled them, to determine potential fraud patterns. If necessary, begin investigative actions and develop pharmacy outreach and awareness program to prevent further abuse.

## Data

List all pharmacies in the state

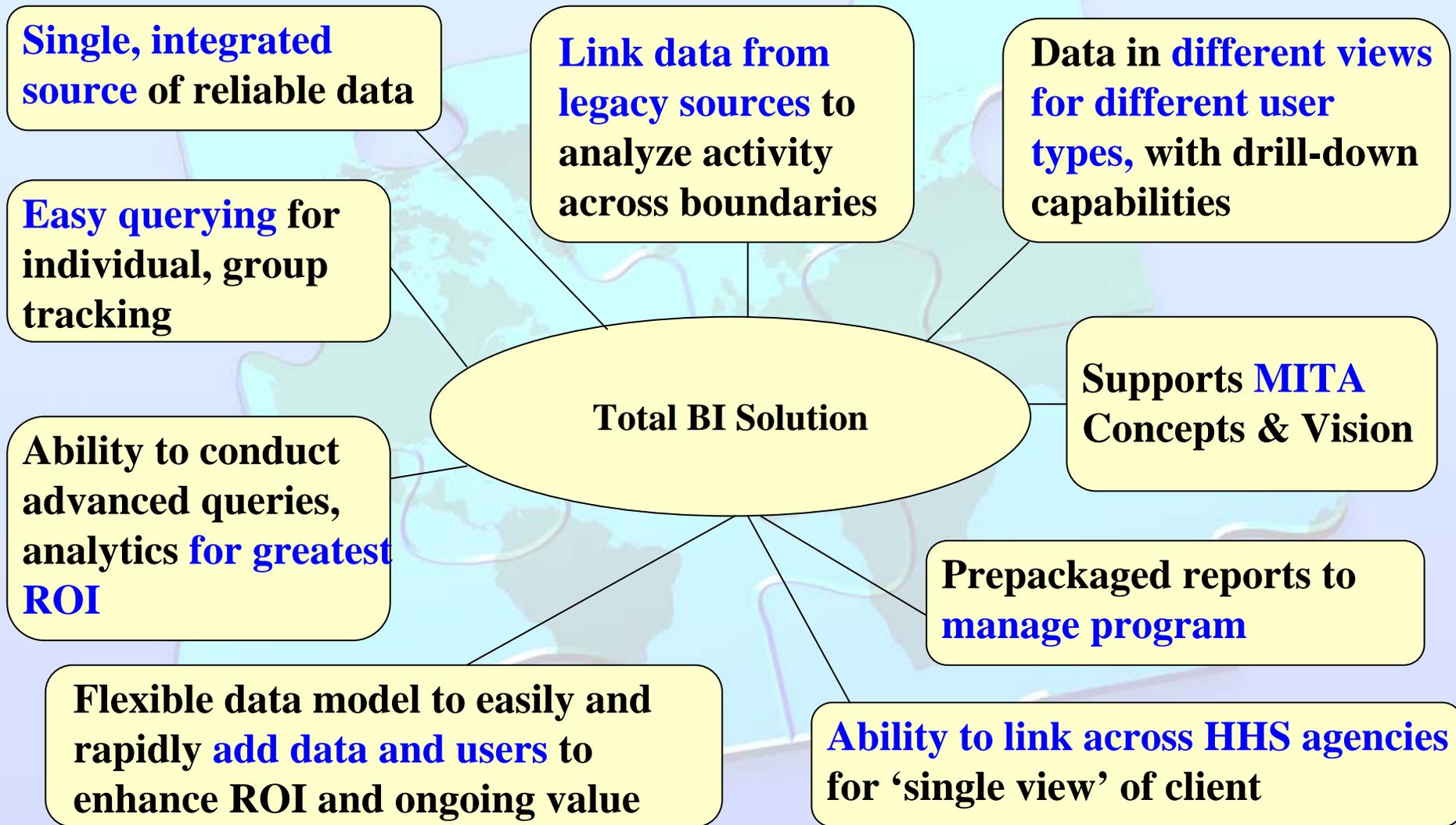


## Information

How many of those pharmacies filled prescriptions for oxycontin last year?



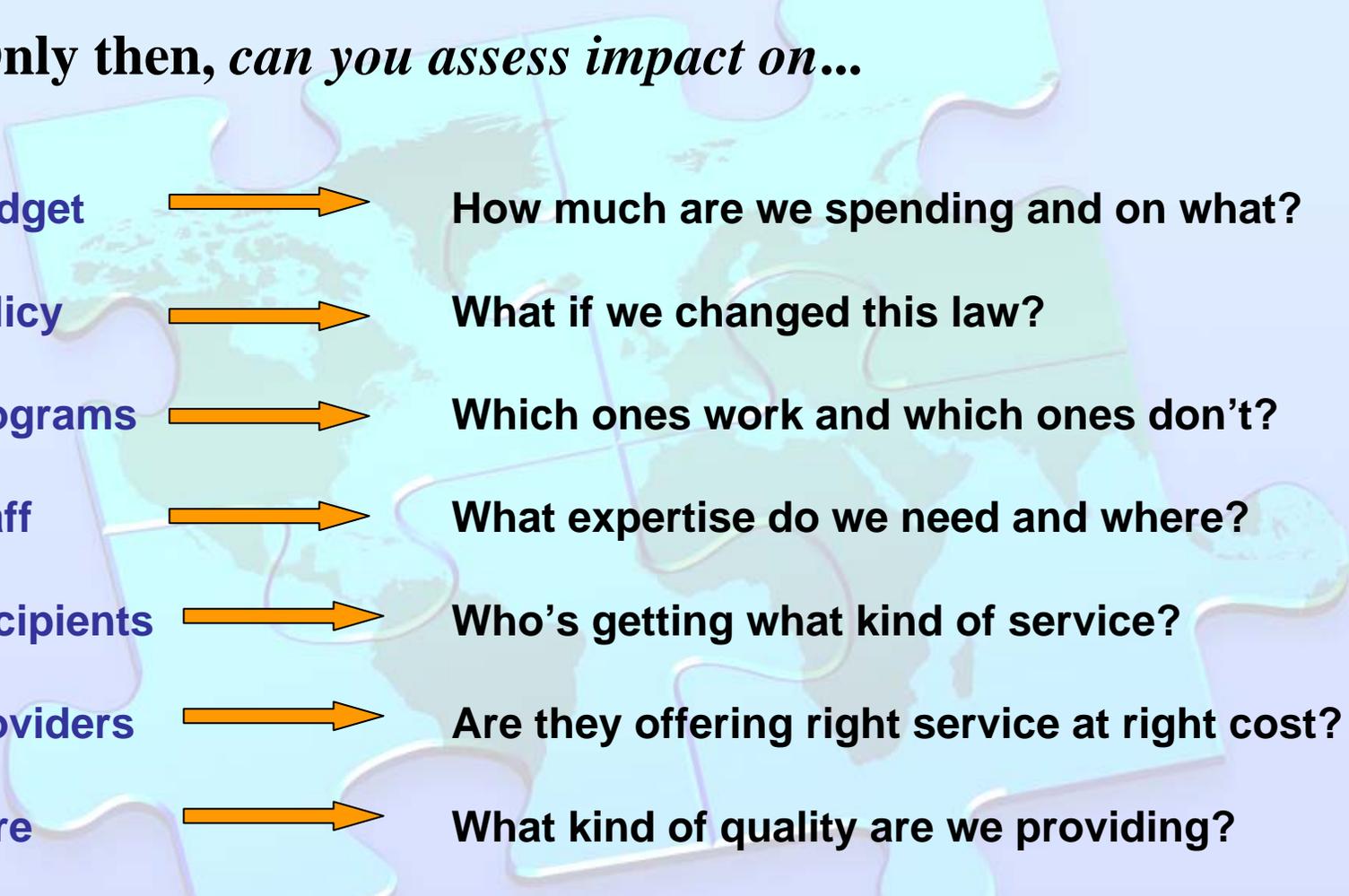
# This Provides States with a Strategic Edge



# Real Long-Term Value: *Knowing, Not Guessing...*

... how money is spent and how services are delivered.

Only then, *can you assess impact on...*



<b>Budget</b>	→	How much are we spending and on what?
<b>Policy</b>	→	What if we changed this law?
<b>Programs</b>	→	Which ones work and which ones don't?
<b>Staff</b>	→	What expertise do we need and where?
<b>Recipients</b>	→	Who's getting what kind of service?
<b>Providers</b>	→	Are they offering right service at right cost?
<b>Care</b>	→	What kind of quality are we providing?
<b>Taxpayers</b>	→	Are they getting their money's worth?



# Examples from Other States



**California**

**New York**

**Minnesota**



# NextGen MIS/DSS

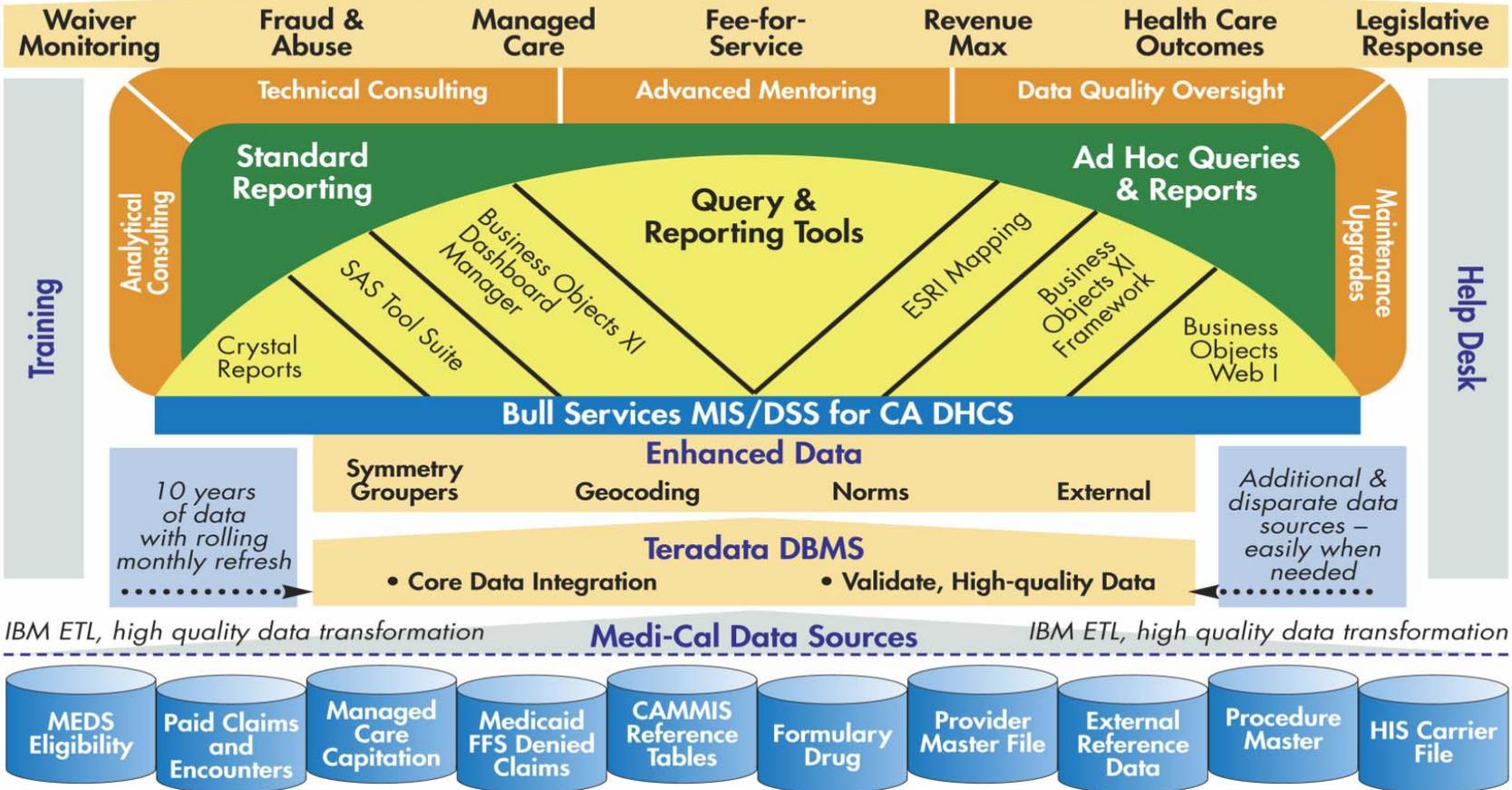
- **Management Information System/Decision Support System (largest Medicaid solution in nation)**
- **Provides an integrated Data Warehouse of Medi-Cal eligibility, provider, service, and financial records – 6.6 million beneficiaries**
- **Enables managers and staff the ability to generate standardized and ad-hoc reports**
- **Designed to provide efficiency improvements in areas of**

- *Program monitoring*
- *Data analysis*
- *Federal reporting*
- *Monitoring quality of care*
- *Anti-fraud activities*

# Architecture

## Next Generation MIS/DSS — Fast, Flexible, Open, Scalable

End Users: Analysts, Managers, Executives



Data ..... Information ..... Knowledge!



# Benefits

- Provides access to strategic and tactical information
- Easy creation of reports
- Provide timely responses to external and DHCS internal information requests
- Large scope of integrated data (most of any repository in HHS)
- Data “Gold Standard”
- Drill-down lowest-level (e.g. Beneficiary/Recipient level)
- Represents many different programs

# CALMEND-Quality Improvement: Clinically Informed Outcomes Management

*CALMEND is a transformed person-centered and recovery-oriented approach to providing and receiving mental health services—largely for adults with severe and persistent mental illness, in effort to guide consistent quality driven practices that truly promote and sustain each person’s individual recovery journey.*



## Actions

Identify clients with SMI and SED

- Develop algorithms to predict SMI and SED

- Develop well targeted intervention and prevention programs

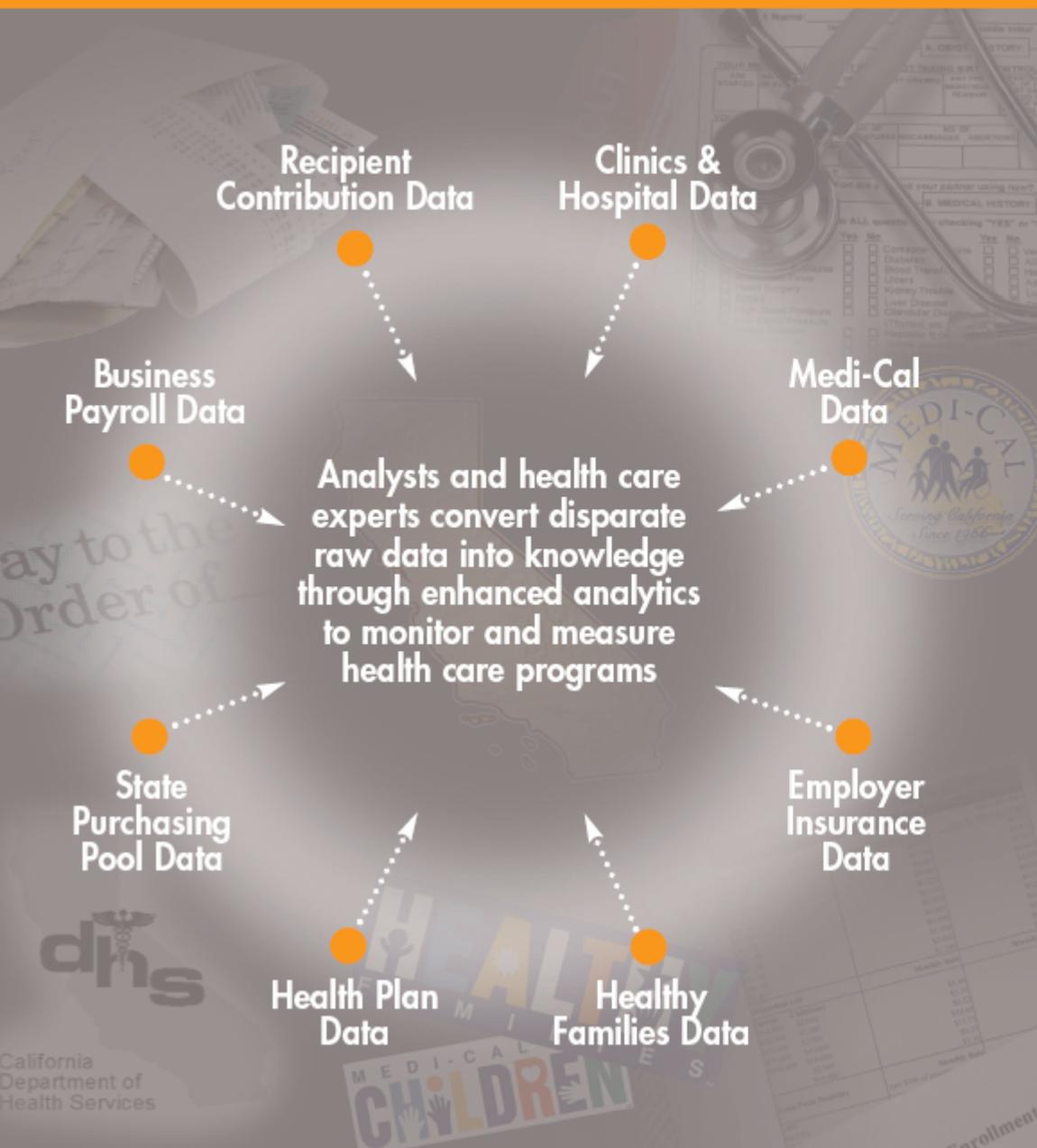
## Results

Identify effective treatment and care practices

- Enhance treatment/service outcomes by supporting the treatment team in identifying clients at risk of unfavorable outcomes

- Provide support to the treatment team to more effectively support client by prompting consideration of alternative strategies

# Using Business Intelligence to Monitor and Measure California Health Care Reform (Uninsured)



## Potential Actions

Enroll, measure and monitor health care coverage for the uninsured

- Monitor impact of business payroll fee on economic development
- Monitor and measure impact of adding uninsured to public insurance programs (Medi-Cal and Healthy Families)
- Monitor and analyze State Purchasing Pool as a low-cost insurance option

## Potential Results

Governor's plans will provide health insurance to 4.1 million of 4.8 million uninsured

- Key Performance Indicators and measurements can help develop health & wellness programs and precision outreach to this group
- Depending on business impact, state can develop comprehensive economic development plan to promote business and jobs growth
- All stakeholders (hospitals, clinics, state programs, private insurers) have comprehensive view of where funds are spent and improvements must be made

# Using Business Intelligence to Monitor California Health & Wellness Programs



## Potential Actions

Measure and monitor progress on broad health and wellness initiatives

- Reward Californians who fight disease and illness before they start (premium reductions, other benefits)

- Increase patient safety by requiring e-prescribing, infection control measures, surgical precautions

**Develop Precision Outreach programs to:**

Promote better diagnosis and self-management of diabetes

- Help Californians quit tobacco use

- Fight obesity through public awareness

## Potential Results

Lower health care costs—up to \$1.3 billion per year of \$13 billion over 10 years

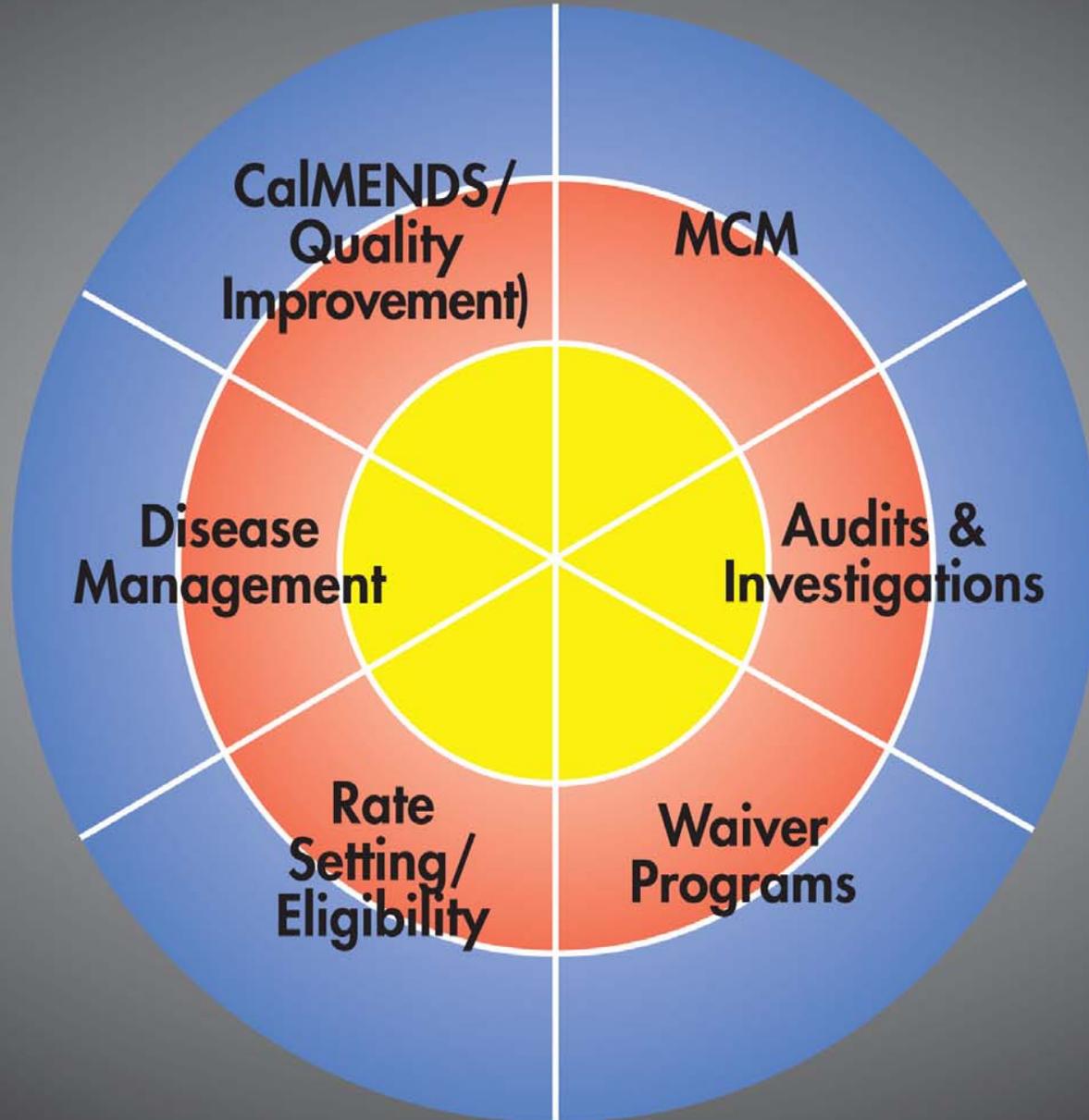
- 10 percent reduction in heart disease, or 7,000 lives saved annually

- 10 percent reduction in medical errors, saving an estimated \$450 million per year

- Improved student achievement based on healthier students

# Medi-Cal Next Generation MIS/DSS Developmental Opportunities

Ongoing Capability-Action-Results



# New York





# New York's Medicaid program: largest \$\$ in the country, supported by largest BI/DSS solution in state government

- Claims total more than **\$45 billion** annually
- Serving over 4.1 million participants
  - 2.7 million in New York City alone
- **325 million** claims annually
- **Highly visible program**
  - Governor, State Senate, State Assembly, county and federal officials, Medicaid subscribers, taxpayers all expect results – and quickly



# New York's BI Solution is being used across agencies, departments in an 'enterprise' way

- 750+ users, expected to **exceed 1,000+ users**
- User community is the **"Medicaid Enterprise"** in New York, serving:
  - **Every department within Office of Medicaid Management (OMM) in the Department of Health**
  - **9 additional State Offices and agencies** within and outside of DOH
    - OMC (Office of Managed Care)
    - OASAS (Office of Alcohol and Substance Abuse Services)
    - OMR/DD (Office of Mental Retardation/Developmental Disabilities)
    - OMH (Office of Mental Health)
    - OSC (Office of State Comptroller)
    - OAG (Office of the Attorney General)
    - FMG (DOH Fiscal Management Group)
    - DOH Division of Epidemiology
    - DOH AIDS Institute
  - **1 Federal Agency** (DHHS Office of the Inspector General)
  - **36 Counties/Local districts** (rollouts to continue this year)
- **Dedicated resource center** for focused one-on-one supplemental training



# New York is using its BI Solution to make major advances in the following areas:

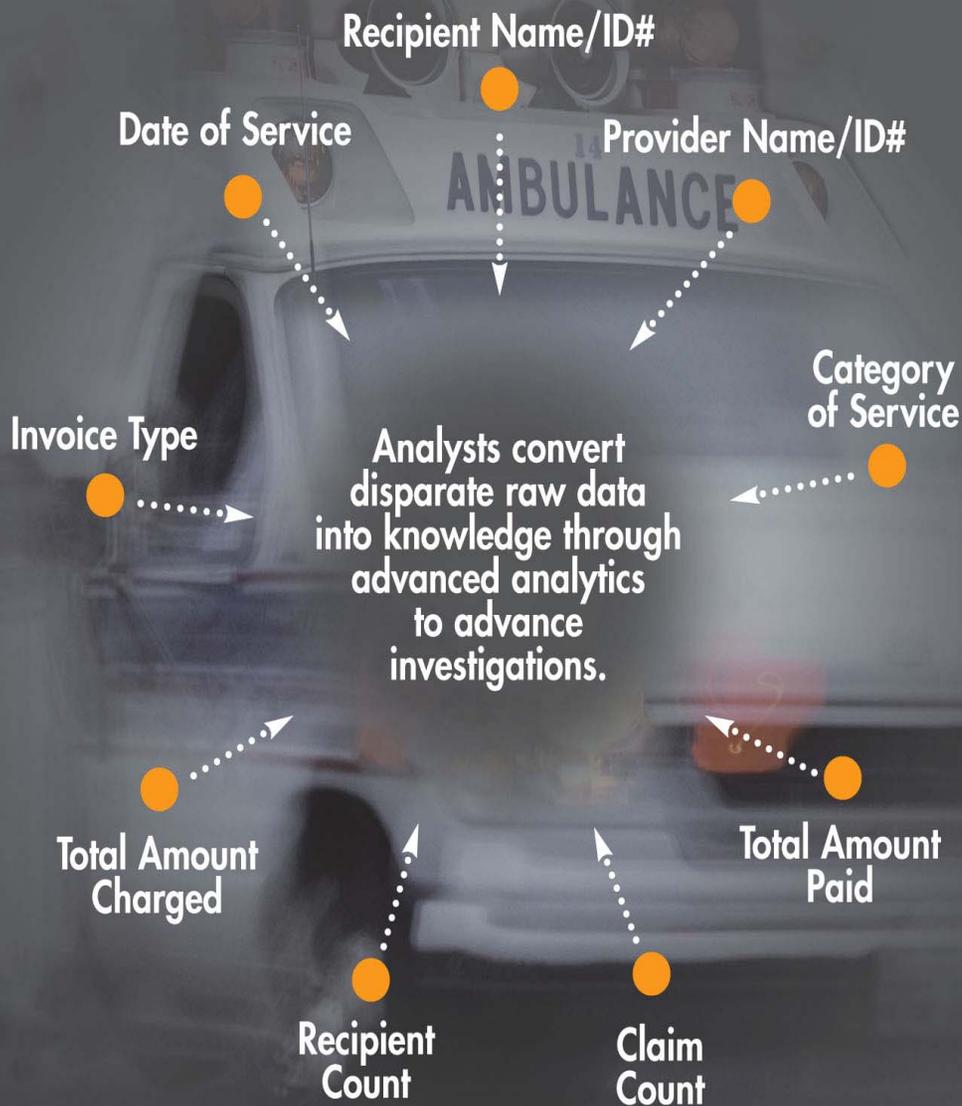
- Tracking potential **fraud and abuse** among providers and recipients (OMIG)
- Tracking **bioterrorism indicators** daily by pharmaceutical purchases with acute illness data from hospital emergency rooms
- Determining **disease patterns and trends** and the best possible treatment
- Tracking **drug pattern usage** to prevent abuse
- Forecasting the **cost and utilization of expensive prescription drugs**
- Delivering enhanced **audit control**
- Identifying billing overlaps to **prevent double-dipping**
- Responding quickly to **legislative queries**
- Analyzing **program and service delivery effectiveness**



# Examples of Initial Benefits in New York

- State has achieved **millions of dollars of savings in ROI**
  - Hard-dollar savings included **cost reductions in inappropriate billings, duplicate payments, questionable expenditures** by providers
  - Office of Alcohol and Substance Abuse Services (OASAS) **projects will save nearly \$80 million** in Medicaid costs over next year if all of its proposals are implemented
  - OMIG has cited more than **\$250 million in Program Integrity** (fraud and abuse) identifications, using warehouse as data source
  - State has built predictive model to identify recipients most likely to commit **fraud and abuse**
  - Data warehouse has helped State to **forecast and control the cost and utilization of expensive drugs** like Oxycontin, Risperadal, Serostim, and Zyvox
- State managing **health care outcomes** using Evidenced-Based Medicine (EBM)
  - identify the **utilization and cost of Medicaid asthma patients**
  - profile recipients who are stricken with **Lyme disease** to build a model to predict the disease

# Fighting Medicaid Fraud & Abuse with BI Knowledge (Analyzing Non-Emergency Transportation)



## Actions

- Implementation of sophisticated Medicaid fraud-ID techniques
  - Advanced analytics (data modeling techniques) developed to aid anti-fraud activities
  - Agency analyzes suspicious provider billing behavior to detect possible fraud
  - Agency supplies investigators with high quality data

## Results

- Identification of suspicious providers/dollars
  - Cost avoidance improvements due to observed deterrent effects
  - Subsequent year transportation costs decline
  - "Hit rate" percentages of investigators vastly improved due to better information
  - Top 4 Medtrans vendors ID'd as suspicious and referred for further scrutiny

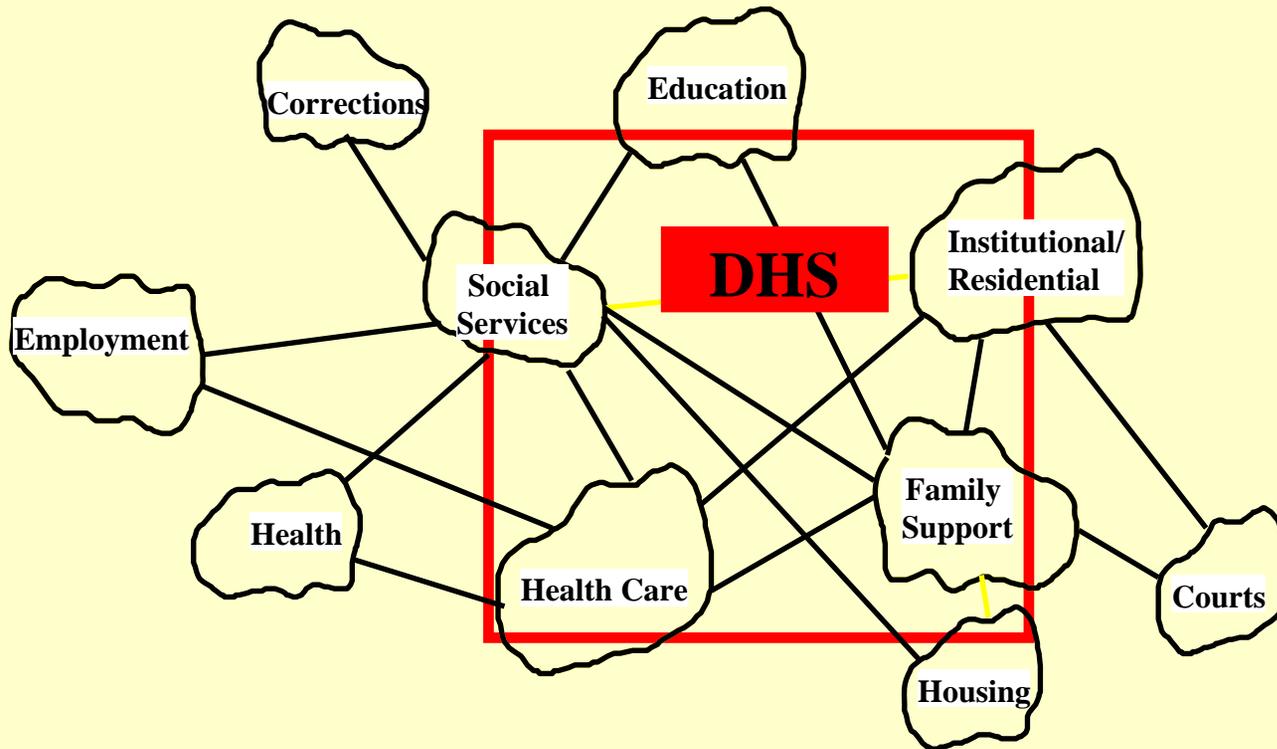
# Minnesota



# Minnesota Department of Human Services Enterprise Data Warehouse

- Encompasses major agency programs
- Health care/Medicaid
- Cash Assistance/Food Stamp Programs
- Child Support Enforcement
- Social Services
- Shared data from both:
  - Department of Employment & Economic Development and Minnesota State Colleges & Universities

# DHS Data Warehouse Data Sources



## Data Warehouse Partners

- 1997 - MMIS (Health Care)
- 1998 - MAXIS (Welfare)
- 1998 - CSES/PRISM (Child Support)
- 1998 - Economic Development (Employment)
- 2000 - SSIS (Social Services)
- 2002 - MnSCU (Training)

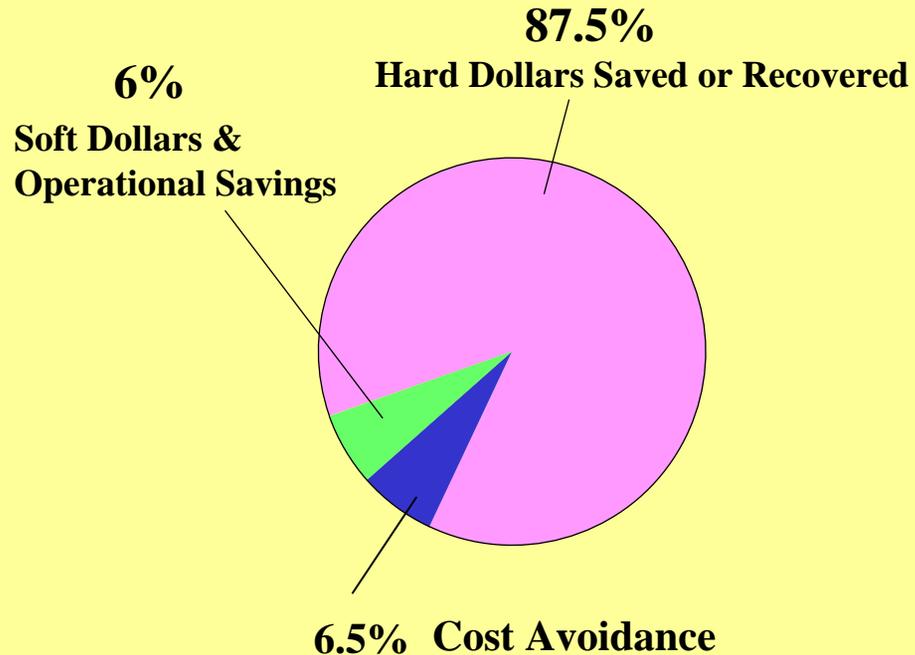
## Other Data Sources

- 1999 – Health – Death certificates
- 2000 – Soc Sec Adm – Retirement and Survivor Insurance
- 2000 – CMS – Medicare/Medicaid dual Eligibles
- 2001 – CHMRS – Adult mental health reporting
- 2002 – SEAGR - Social Service accounting information
- 2003 – Soc Sec Adm – Beneficiary Data Exchange
- 2003 – Tribes – Indian Health Service recipients
- 2004 – MEC<sup>2</sup> – Child Care Assistance Program
- 2005 – Natural Resources – Licenses and registrations
- 2005 – Health – Birth certificates
- 2006 – Food & Nutrition Service – Disqualified Recipients
- 2006 – CMS – Medicare Part D
- 2006 – State Master Index – Common client identifier

# Minnesota Department of Human Services

Agency uses data warehouse to manage all of its medical\welfare programs

Data warehouse  
has helped  
Minnesota DHS  
save tens of  
millions of dollars

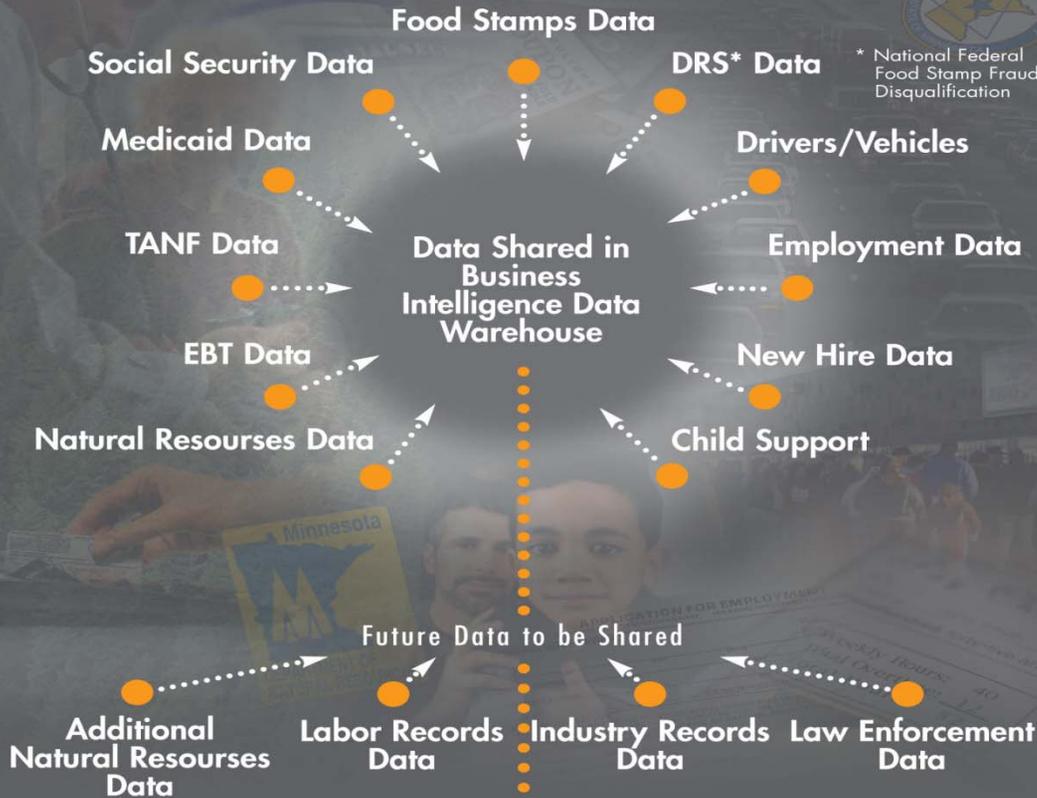


# Multi-Million Dollar Savings in MN Data Warehouse Due to Drill-Down Analytics

- Helped the State identify millions in combined fraud recoveries and inflated drug costs.
- Savings in cost avoidance as part of pharmacy and medical supplier investigations thanks to advanced analytics capabilities offered by data warehouse.
- Received TANF federal high performance bonus for third consecutive year bringing the total to over \$30 million.
- Data from the warehouse was used to identify recipients who were simultaneously utilizing state health care program, as well as Medicaid, and who, should have been assigned to a federally funded program rather than a state-funded program.

# Enterprise Data Sharing = Program Actions and Results

## Preventing and Eliminating Welfare Fraud



**Program Integrity Network (PIN) –**  
a three-step process that involves front-end analysis, criminal investigations, and collections – is designed to improve the accuracy of public assistance eligibility determinations, and to help prevent, control, recover, and evaluate public assistance program payments made to ineligible persons.

## Actions

Three-step process that involves front-end analysis, criminal investigations, collections

- More than 330 people served including fraud investigators, supervisors, support staff, child support workers, quality control reviewers, collectors

- Investigators are quickly able to build economic, demographic, and behavioral profiles to determine if further investigation is warranted

- Enterprise data warehouse/BI solution enables investigators to construct queries using their own knowledge, and drill down intuitively

## Results

- More than \$21 million collected by State in intercepted federal payments and tax return since program's inception

- More than \$12 million in annual cost avoidance and overpayments identified

- In single year (2006), stopped disbursement, or identified for collection, \$4.46 for every \$1.00 spent on program administrative costs

- In single year (2006), completed more than 7,400 front-end investigations; in 45 percent of them, benefits were stopped or reduced and nearly 2,500 criminal investigations resulted (in 60% of those, benefits had been illegally obtained)

A 3D puzzle of a world map is centered on the page. The puzzle pieces are light blue with a subtle gradient and a slight shadow, giving them a three-dimensional appearance. The map is rendered in a light greenish-blue color. Overlaid on the puzzle is the title "Financial Benefits and Moving Forward" in a bold, black, serif font. The text is centered horizontally and positioned in the middle of the puzzle.

# **Financial Benefits and Moving Forward**

# Key Factors in Boosting the BI “Financial Benefits Premium”

## Greater Financial Benefits!



**Enterprise-wide data sharing** – Follow money, people, services across programs, agencies

**Additional data** – Flexibility increases analytical capabilities

**End-to-End BI infrastructure** – Functionally rich, best people, products, processes, tools, technologies

**Professional Services on-site** – Mentoring helps you get the most from your investment

**Broadened user population** – Executives, power users, analysts

**User Maturity** – System familiarity compounds the ROI

# Benefits of A Business Intelligence Investment

- Quick ROI and financial benefits
- Faster and credible response to Legislature and Executive office
- Better oversight and compliance
  - Third Party Contractors
  - Program Outcomes
  - Waivers
  - Fraud and Abuse
- Ability to easily add data, users, to adapt as your needs change

# THE VISION:

## Business Intelligence = Integrated Data

### Business Intelligence from Various Sources

#### Human Services Data

- 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

#### Child Support Enforcement Data

- DOC – Corrections Data
- DNR – Hunting Licenses
- Personal Protective Orders
- Federal – Various
- MDOS – Driver License
- Treasury – New Hire
- Treasury – Tax Data
- DCIS – Professional Licenses
- Child Support Data
- Worker's Compensation
- Unemployment Data

#### Health Data

- Medicaid Beneficiary
- Medicaid Provider
- Death Certs & Stats
- Birth Certs & Stats
- Immunization Registry
- WIC
- PRAM
- MIHAS
- Lead Screening
- Substance Abuse
- Epidemiology

# Lessons Learned

- Vision of sharing data: Think big, start small
  - Building a design model that would share data
- Create leverageable, quick successes
- Executive-level support to build an Enterprise BI Solution to share data
- Annual funding streams
- Outside Contractor
  - To keep project workplan on track/full time focus on products
- Commitment to collaborate across divisions and bureaus

Thank You!



A 3D puzzle piece with a world map pattern, rendered in a light blue/cyan color with a slight shadow. The puzzle piece is centered on the slide. The text "Back up Slides" is overlaid on the puzzle piece.

**Back up Slides**

# Reporting Capabilities

- Standard Reports
- Re-usable Report Templates
- Modify Existing Reports
  - Reports created by you can be modified
  - Reports created by others can be borrowed
  - Standard reports can be customized
- Ad-Hoc Reports
- Dashboard Capabilities
  - Performance measures-key performance indicators (e.g Utilization, outcome measures, etc.)

# NextGen MIS/DSS and MCSS “Working Together”

- What NextGen MIS/DSS provides (Operational Capabilities)
  - User-friendly, self-service, access to on-going, Enterprise-wide, Medi-Cal data and reports
  - A common Business Intelligence platform for everyone at every level to access and use
  - Program specific Business Intelligence-data driven functionality to support Medi-Cal operations (e.g. Disease Management, Kick-payment, A&I Duplicate Billing, etc.)
  - The ability to automate and more efficiently generate many of the reports and summary datasets which MCSS has created and routinely updates for Fiscal Forecasting Section and the MCSS web site (including geographic visualization)
- What MCSS provides (Thought leadership and Modeling Capabilities)
  - Guidance and thought leadership to incorporate consistent Medi-Cal standard Business Rules that have been built over many years (e.g. Certified Eligible) in NextGen MIS/DSS
  - MCSS possesses the analytic experience, deep program knowledge and intimate familiarity with Medi-Cal data that is needed to put the NextGen MIS/DSS to work in the most productive fashion
  - Perform advanced modeling to test the impact of program and policy changes before they are proposed and operationalized

# GIS

