Description of DHCS Datasets that Can Support the Improvement of Maternity Care: A User's Perspective

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Using Data to Improve Maternity Care in California: Research Collaborations and Future Opportunities

Sacramento, CA
June 19-20, 2014

Objectives and Acknowledgements

- Objectives
  - Experiences Working with Medi-Cal Data
  - Medi-Cal Programs and Maternity Care
  - Medi-Cal Data
    - Focus on data relevant to maternity care

- Acknowledgments
  - Content from this presentation was borrowed from *Optum*—the vendor that manages the Medi-Cal data warehouse

Experiences Working with Medi-Cal Data

Medi-Cal: A Researcher's Dream

- My role:
  - Nearly 2 years working as a "data scientist" at Medi-Cal
    - Data retrieval, statistical analyses, and interpretation

- Medi-Cal data are vast and complex—never a boring day
  - Data are not perfect, but data QI projects are underway
  - Seemingly endless research questions can be addressed

- MIS/DSS - Management Information System/Decision Support System
  - Queries using SQL and SAS run extremely fast on "Big Data"
  - Symmetry™ Episode Treatment Groups/Episode Risk Groups

- Challenges:
  - Evaluating the quality of particular data (e.g., encounter data)
  - Assessing and understanding "data about the data"

Medi-Cal Programs and Maternity Care

Medi-Cal: Patchwork of Programs

- Aid codes
  - Eligibility pathways define available benefits
    - Over 200 active codes; most members eligible through a few dozen codes

- "Share of Cost"
  - Monthly deductible amount; Medi-Cal pays for the rest

- Plan Codes
  - Different groups responsible for care (e.g., managed care plans, fee-for-service program)

Medi-Cal Programs and Maternity Care

- Medi-Cal pays for half of all births in California

- Special pregnancy-related programs
  - Presumptive Eligibility – immediate, temporary prenatal care coverage to low-income pregnant women
  - 200 percent FPL Pregnancy Income Disregard Program
  - Transfer from Limited to Full-Scope Coverage
  - Postpartum Program
  - Access for Infants and Mothers (AIM)

- Pregnancy Education Programs
  - Comprehensive Perinatal Services Program
  - Black Infant Health Program
  - Prenatal Care Guidance Program

- Family PACT Program
  - Established in 1997; 1115 Medicaid Waiver, 1999 to 2010
  - Provisioning a limited set of reproductive health benefits

Maternity Care Research Questions

- **Access**
  - What sub-populations get access to specific services?

- **Quality**
  - Do Medi-Cal pregnancies have high rates of medical errors?

- **Costs**
  - What are the costs for specific procedures, diagnoses, or populations?

- **Utilization**
  - Are procedures over or under utilized?

Medi-Cal Data

Types of Data

- 10 to 10.5 years of history

- Transaction Data Sources (examples)
  - Paid Claims and Encounters
  - Eligibility data per person-month
  - Providers: fee-for-service and managed care providers
  - Capitation payments
    - Maternity supplemental payment (KICK)

- Reference Data Sources
  - Providers
  - Procedures
  - Pharmaceuticals

- Derived Data: Groupers, Primary Aid Code, GIS

Medi-Cal Eligibility System "MEDS"

- Monthly information: nearly complete:
  - Patient ID: SSN, CIN, and "AKA CIN"
  - Age, Sex, Ethnicity, Gender, Birthdate
  - Aid Codes
  - Medicare coverage
  - Other insurance coverage status

- Not always complete:
  - Person name
  - Country of birth
  - County of birth
  - Date of death
  - Term date and reason

- Derived information:
  - "certified" eligibility status
  - Number of continuous months
  - Plan type and plan model
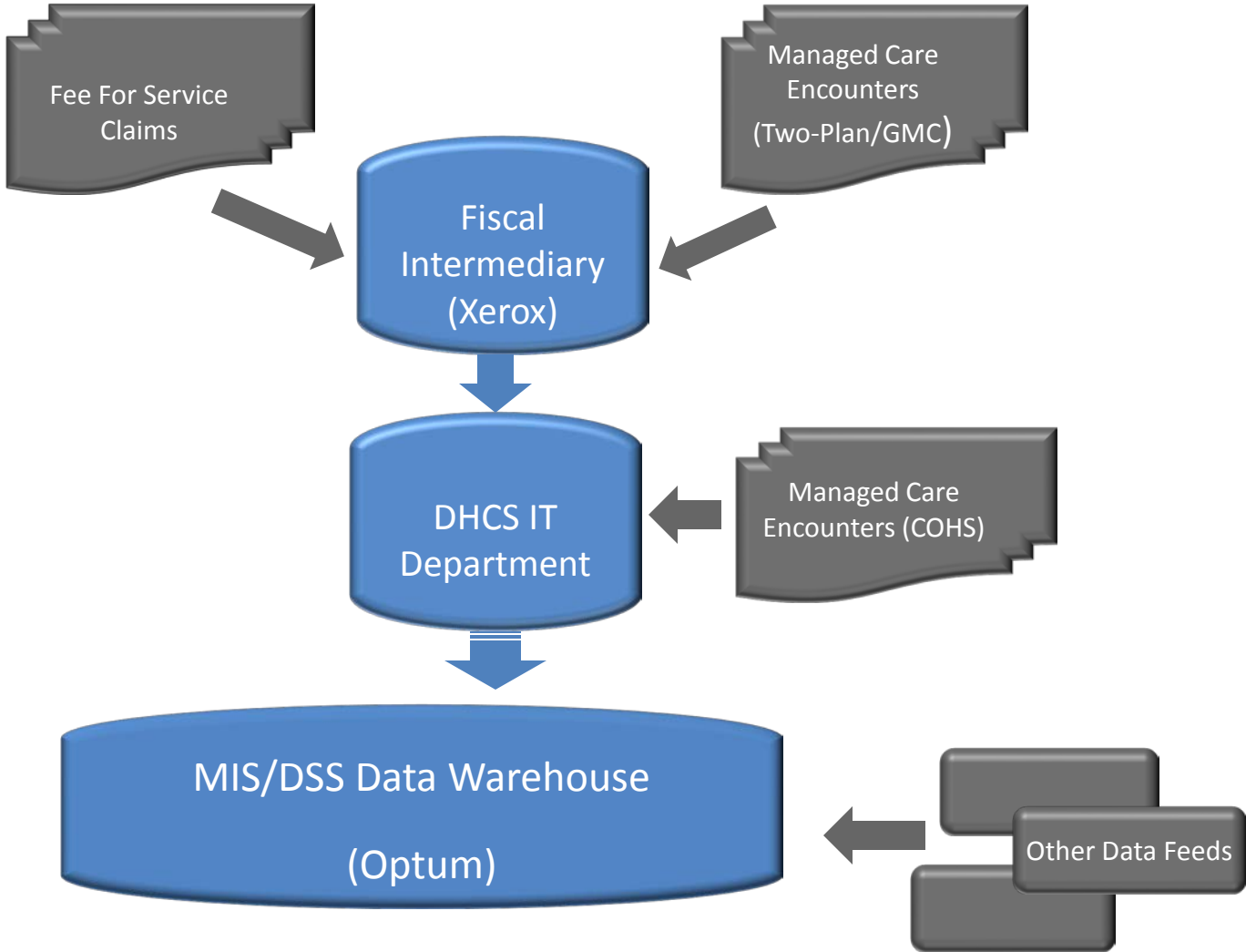 - Geographic coordinates (latitude and longitude)

Claims and Encounters

- Claims data is the core of the MIS/DSS
  - Over 3.8 billion detail claim records as of June 2014
  - 10 years of data with payment lag of 1-9 months (98%)

- A claim represents a medical care event, or transaction
  - A record of a Medi-Cal beneficiary receiving a medical service from a given provider on a given day

- Two types of transactional records:
  - Paid claims (Fee-For-Service)
    - Provider is paid per service
  - Managed care encounters
    - Plan is paid a monthly capitation

- Major efforts to change how data are submitted
  - Medi-Cal's 35-C to industry standard of 837

Claim Origin: Example of Treatment Scenario

- Patient is taken to a hospital by ambulance. ER physician admits the patient overnight and discharges to home with referral for follow-up care.

- The following claims or encounter records might be generated:
  - Emergency medical transportation claims
  - Hospital inpatient claim with Room & Board and ancillary charges (e.g., labs, X-rays, drugs, supplies)
  - Medical or Outpatient claim for a follow-up office visit
  - Pharmacy claims for prescriptions filled

Claims and Encounter Data Flow

Fee For Service Claims

Managed Care Encounters (Two-Plan/GMC)

Fiscal Intermediary (Xerox)

DHCS IT Department

Managed Care Encounters (COHS)

MIS/DSS Data Warehouse (Optum)

Other Data Feeds

Claim Type: Medical/Allied and Outpatient

- Claims and encounters documenting:
  - Office visits
  - Hospital outpatient department services
  - FQHC services
  - Lab and x-ray
  - Physician administered drugs
  - Medical transportation
  - Dialysis services
  - Physician services delivered to hospitalized patients (e.g. surgery)
  - DME
  - … and much more

- Primary and secondary diagnosis codes
  - Until new 837 data structures, only 2 diagnoses per claim

- Procedure code

- Billing and rendering provider

Claim Type: Hospital Inpatient

- Room & Board and ancillary services (e.g., pharmaceuticals, anesthesia, labs) provided during hospital stay

- Important Data Elements:
  - Primary and secondary diagnosis codes
  - Revenue code
  - Surgical procedure code
  - Inpatient admission and discharge dates
  - Inpatient days stay

- Important Facts:
  - Reimbursements vary between contract and non-contract hospitals
  - More than one bill may be found for a single hospitalization
  - Physician services may be billed separately as outpatient
  - Babies may initially show up under mother's ID
  - Diagnosis Related Groups (DRGs) have changed the way hospitals are reimbursed

16

Claim Type: Pharmacy

- National Drug Code (NDC)/Universal Product Code

- Provider fields:
  - Billing provider (typically pharmacy)
  - Prescribing provider (typically physician)

- Drug units and days supply

- Groupers help analyze drug utilization by therapeutic class, route of administration

- Diagnosis codes are <u>not</u> reliable on pharmacy claims

Provider Data

- Claims/Encounters
  - Billing/Reporting
  - Rendering/Operating
  - Referring/Prescribing

- Provider Reference data:
  - Provider Master File
  - Database of enrolled Medi-Cal providers
  - Maintained by Provider Enrollment Division
    - Does NOT include many renderers, prescribers and managed care providers
  - National Plan and Provider Enumeration System (NPPES)
  - Database of all valid NPIs
  - Maintained by CMS

Family PACT Data and Reports

- To facilitate prompt access, enrollment is onsite at the provider's office
  - 1 page enrollment form (front and back) based on self-certification
  - Eligibility data differs from Medi-Cal (~2.8 enrolled annually)

- Uses Medi-Cal's Fee-for-service claims system (~15 million claims annually)

- A variety of detailed reports use enrollment and claims data to describe provider and client populations, the types of services utilized, fiscal issues, and county profiles. Examples include:
  - Family PACT Annual Reports
  - Access to Family Planning Services
  - Cost Benefit Analyses
  - http://www.familypact.org/Research/reports-and-research

Efforts to Improve and "Free" the Data

- Encounter data
  - In contrast to the more complete and reliable fee-for-service data, managed care encounter data are often incomplete
    - Quality depends on specific plans and specific data elements
    - "Encounter Data Improvement Project"
      - Using analytics to identify high-quality data fields
      - "Use drives improvement"

- DHCS Eligibility records have been linked to OSHPD datasets and Vital Statistics Data Files
  - Medicare data are available

- "Free the Data" Project – Dr. Linette Scott
  - Data Research Committee and external data requests

Conclusions

- Medi-Cal's massive data warehouse can be used to study maternity care
  - Data quality varies, but use will likely drive improvement

- Data can be extracted and analyzed with relative ease

- Biggest challenges:
  - Understanding the complexity of the claims data
  - Applying "meta-data" to transform results into actionable information
  - Accessing high-quality data
    - New efforts and policies are being established to improve the data and "free the data"

Reference Slides

Finding Additional Information

- Medi-Cal Managed Care Claims and Encounter Data Reporting
  - http://www.dhcs.ca.gov/dataandstats/data/Pages/MMCDClmsEncDataRpt.aspx

- Medi-Cal Provider Billing Manual
  - http://files.medi-cal.ca.gov/pubsdoco/manuals_menu.asp

- Accessing DHCS protect data for research and public health
  - http://www.dhcs.ca.gov/dataandstats/data/pages/accessingprotecteddata.aspx

Aid Codes

- Aid Codes Master Chart
  - **Code**
    - Over 200 active codes
  - **Benefits**
    - e.g., Full; Restricted to pregnancy and emergency services; Restricted
  - **Share of cost**
    - Yes, No
  - **Program/description**
    - Example: Abandoned Baby Program. Provides full-scope benefits to children up to 3 months of age who were voluntarily surrendered within 72 hours of birth pursuant to the Safe Arms for Newborns Act.

- http://files.medi-cal.ca.gov/pubsdoco/publications/masters-mtp/part1/aidcodes_z01c00.doc

Important Data Elements

- Patient identifiers:
  - AKA CIN, CIN, SSN-OR-MEDS-ID

- Dates:
  - Service-From Date, Service-To Date, Paid Date, Adjudication Date, Admission Date, Discharge Date

- Program Code:
  - Fee-For-Service, Managed Care, COHS, Short Doyle

- Claim Type:
  - Pharmacy, Hospital Inpatient, Outpatient, Medical/Allied

- Plan Code:
  - FFS or managed care; medical and dental plans

- Clinical:
  - Primary and Secondary Diagnosis
    - for now, only 2 per claim
  - Procedure Code,
  - Revenue Code,
  - NDC

- Provider:
  - Billing, Referring/Prescribing, Rendering/Operating
  - Provider type
  - Specialty
  - Vendor code

- Financials:
  - Allowed Amount, Billed Amount, Paid Amount, Reimbursed Amount

Medi-Cal Providers

- Medi-Cal providers include nursing homes, hospitals, clinics, labs, pharmacies, physician groups, solo practitioners

- Fee-For-Service:
  - Must be enrolled in Medi-Cal to bill
    - Must bill using NPI
  - Does not have to be enrolled if rendering or referring/prescribing provider only
  - Does not have to use NPI, although that will be changing soon

- Managed Care:
  - Does not have to be enrolled in Medi-Cal
  - Does not have to use NPI, although that will be changing soon

Roles of Providers

- Billing/Reporting
  - Provider who submitted a Fee-For-Service claim or Managed Care encounter

- Rendering/Operating
  - Rendering: medical and outpatient claims
  - Operating: hospital inpatient claims

- Referring/Prescribing
  - Prescribing: pharmacy claims
  - Referring: all other claims

Claim Program Codes

PGM_CD	PGM_SHORT_DESC	PGM_LONG_DESC
00	**Delta Dental Claims**	Delta Dental Services (DELTA)
01	**IHSS (DSS)/DDS Waiver/TCM**	Dept of Social Services (DSS) In-Home Supportive Services Program/ Dept of Developmental Services (DDS) Waiver Program/ DDS Targeted Case Management/ Medi-Cal Targeted Case Management
02	**Managed Care**	Encounter Data
04	**COHS**	County Operated Health Systems (COHS) in: Santa Barbara County, Santa Cruz County, Napa County, Solano County, Orange County (most - remainder are encounters), San Mateo County, Yolo County, Monterey County, Ventura County, Merced County, Sonoma County, San Luis Obispo County
05	**EPSDT**	Early Periodic Screening, Diagnosis and Treatment (EPSDT)
06	**State Hosp/DDS Cntr**	State Hospitals/State Developmental Centers (DDS is the claims processor for both DMH and DDS)
08	**Short Doyle**	Short-Doyle/Medi-Cal (SD/MC) Administered by Department of Mental Health and Department of Alcohol and Drugs
09	**FFS Medi-Cal**	ACS/ HP/EDS Claims
29	**FPACT**	Family Planning, Access, Care, and Treatment

Claim Source Codes

SRC_CD	SRC_DESC	SRC_CD	SRC_DESC
01	COHS - YOLO	23	Medical FI Claims - BREAST CANCER (Electronic Data Processing) EDP
02	COHS - SANTA CRUZ	24	Medical FI Claims - HEALTHY FAMILY
03	COHS - MONTEREY	25	DELTA DENTAL - HEALTHY FAMILY
04	COHS - SANTA BARBARA	26	Medical FI Claims - CALIFORNIA CHILDREN Services
05	COHS - SAN MATEO	27	Medical FI Claims - GENETICALLY HANDICAPPED
06	COHS - NAPA	28	Medical FI Claims - CMSP
07	COHS - SOLANO	29	DELTA DENTAL - County Medical Services Program (CMSP)
08	COHS - CALOPTIMA	30	DELTA DENTAL - Children Health and Disability Treatment Program (CHDTP)
09	DELTA DENTAL - REGULAR	31	Medical FI Claims - EARLY ACCESS PRIMARY Care
10	DELTA DENTAL - SPECIAL	32	DELTA DENTAL - California Children Services (CCS)
11	DELTA DENTAL - ROOT CANAL	33	DELTA DENTAL - Genetic Handicap Person Program (GHPP)
12	DELTA DENTAL - Immigration Reform and Control Act (IRCA)	34	COHS – SAN LUIS OBISPO
13	Department of Developmental Services (DDS) STATE HOSPITAL	35	COHS - Merced
14	Department of Social Services (DSS) Personal Care Services Program (PCSP) - CMIPS I	36	COHS - Sonoma
15	Department of Developmental Services (DDS) WAIVER	37	MEDI-CAL/SHORT-DOYLE (MSD) Alcohol Drug Program (ADP)
16	Department of Developmental Services (DDS) Targeted Case Management (TCM)	38	COHS-MARIN
17	MEDI-CAL Targeted Case Management (TCM)	39	COHS-MENDOCINO
18	Medical FI Claims - MENTAL HEALTH INPATIENT	40	COHS-VENTURA
19	Medical FI Claims - Fee For Service Medi-Cal	41	Department of Social Services (DSS) Personal Care Services Program (PCSP) - CMIPS II
20	Medical FI Claims - ENCOUNTERS	42	DELTA DENTAL - Targeted Low Income
21	MEDI-CAL/SHORT-DOYLE (MSD) Department of Mental Health (DMH)	70	Medicare Modernization Act (MMA) Prescription Drug Plan (PDP) - WELLCARE
22	Medical FI Claims - Child Health and Disability Program (CHDP)		Unknown