MERCER
Government Human Services Consulting

May 18, 2006

Mr. Jon Barley
Bureau of Managed Health Care
Ohio Department of Job and Family Services
255 East Main Street, 2nd Floor
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Subject:
ABD Risk Adjustment Methodology – DRAFT & Confidential

Dear Jon:

The Ohio Department of Job and Family Services (State) contracted with Mercer Government Human Services Consulting (Mercer) to design the risk assessment process that will be used to develop Managed Care Plan (MCP)-specific capitation rates that reflect the risk of the Aged, Blind and Disabled (ABD) managed care enrolled population. This methodology letter outlines the intended risk assessment process for the development of the MCP specific risk-adjusted capitation rates effective November 1, 2006 through December 31, 2007. The specific methodology applied may vary depending upon the available data, changes to the covered population and benefits, and any other refinements that occur subsequent to the contract release. A detailed explanation of the applied methodology will be released along with the semi-annual risk score results.

Methodology Overview

In general, payments to the MCPs will be determined by multiplying the region-specific ABD base capitation rate by each MCP's region-specific normalized case mix value and enrollment. Each MCP's case mix value will be derived from the average of the acuity factors of the enrollees in that MCP. Enrollees with at least six months of eligibility in the twelve-month study period will be assigned an acuity factor using diagnostic and demographic information. Unscored enrollees (with less than six months of eligibility) will receive the average MCP case mix for their enrollees. Once the case mixes are determined, a budget neutrality adjustment will be applied to ensure that the risk adjustment process does not result in unintended reductions or overages in capitation payments.

Data Requirements

The cornerstone of the Chronic-Illness and Disability Payment System (CDPS) risk-adjustment process, described in the attached Appendix, is the data used to assess the member demographics along with their diagnostic history. The CDPS model is calibrated based on twelve-months of data. As a result, twelve months of data is used to appropriately measure recipient risk. This twelve month time period is referred to as the study period. The initial risk adjustment calculations will be based on Calendar Year (CY) 2005 data, with six months of data extending to June 2006 to account for claims runout.

In order to calculate individual risk scores, eligibility and FFS claims data will be collected. The eligibility file will be used to determine each recipient's age, gender and the number of months eligible during the twelve-month study period. The FFS claims file contains the necessary diagnostic information used to classify members into CDPS disease categories.

Data that could contain questionable diagnostic information will be removed from the disease classification process. To reduce the number of chronic conditions being identified through false positives, diagnoses reported on laboratory, radiology, and durable medical equipment services occurring in a non-inpatient setting will be removed prior to risk assessment.

Since ABD managed care has not yet been implemented in Ohio, FFS data was the only available data source for risk assessment. Once mandatory managed care is implemented, MCP-provided encounter data will be used in conjunction with FFS claims to assess individual risk. As a result, the participating MCPs will be responsible for providing complete, accurate, and timely encounter data in support of the risk adjustment process

Individual Acuity Factors (or Recipient Risk Scores)

The cost weight values in the CDPS model were adjusted to reflect the population and benefits covered under Ohio's ABD managed care program. Using this version of the CDPS model and the data described in the previous section, a risk assessment will be performed for each scored recipient. A scored recipient is a recipient that has at least six months of Medicaid eligibility within the twelve-month study period. The risk assessment will be performed by classifying scored recipients into CDPS categories. Once the CDPS classification is completed, each individual's acuity factor will be determined by adding the relative costs (weights) based on their demographic profile and disease history.

MCP Assignment & Case Mix Calculation

A point in time, referred to as an enrollment snapshot, will be selected for MCP assignment. Once recipients and their individual acuity factors are assigned to an MCP and region, the MCP risk score will be calculated by averaging the individual acuity factors for each MCP and region combination. To avoid any terminology confusion between individual and MCP risk scores, MCP risk scores will be referred to as a case mix.

Some recipients enrolled in an MCP at the selected enrollment snapshot will not have an acuity factor. These unscored recipients include new recipients to Medicaid and those recipients that did not meet the six-month eligibility requirement within the study period. Based on the premise that MCPs will attract similar risk due to marketing efforts and contracted provider network, the unscored enrollees will receive the MCP case mix that was calculated from the average of the scored population of their residing region.

Budget Neutrality

For each region, an average case mix value will be computed for all ABD managed care enrollees. This value will be divided into each MCP's case mix value to produce a normalized case mix value for that MCP. The budget neutral case mix values determine reimbursement rates to the MCPs. Since the weighted average of the budget neutral case mix values is 1.0, distortions in the model due to changes in coding practices over time will be reduced.

Final Payment

In order to better match payment to the risk of the enrolled population, MCP-specific rates will be paid. These MCP-specific rates will be derived by multiplying the base capitation rates by the normalized case mix. The final payment will be the product of the member months and the MCP-specific rates.

The risk-assessment process described above was developed in accordance with the CDPS model, a generally accepted diagnosis grouper, and meets the requirements of the Centers for Medicare and Medicaid Services (CMS) Checklist, Appendix A, dated July 22, 2003. MCP case mixes will be reassessed on a semi-annual basis using data provided by the State. Please note that during the program phase-in, case mix updates will be performed monthly to account for the changing risk attraction patterns.

The resulting risk-adjustment scores from the methodology described above will be projections of relative risk. Actual relative risk will likely differ from that projected. ODJFS will use the risk-adjustment scores to adjust actuarially sound base capitation rates as a means of matching MCP payments to their relative risks. Use of risk-adjustment results for any purpose beyond that stated may not be appropriate, and Mercer disclaims any responsibility for any such use.

Sincerely,

Denise B. Blank

Copy:
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Appendix

CHRONIC-ILLNESS AND DISABILITY PAYMENT SYSTEM BACKGROUND

To measure the risk associated with each MCP, various risk-adjustment models that measure risk using demographic indicators in addition to disease history were evaluated. While many risk-adjustment models exist, the only risk-adjustment model that was specifically designed for Medical Assistance populations, CDPS, is the current model of choice selected by the State for the ABD program. CDPS is a diagnostic classification system that Medicaid programs can use to make health-based capitated payments for Disabled Medicaid beneficiaries. The CDPS model was designed by the University of California, San Diego (UCSD), in conjunction with 15 clinical consultants who assisted in the disease classification process. The CDPS model used will measure existing conditions and their ability to predict future health care resource intensity.

Model Components

The CDPS model was designed using data from California, Colorado, Georgia, Michigan, Missouri, Ohio, and Tennessee. The intent of the initial model was to include readily available demographic and disease characteristics that were valid and accurate estimators of current and future health care costs. As many services require the provision of diagnoses in order to receive payment for services rendered, the presence of diagnoses on electronic claims information is a viable method of collecting data for risk-adjustment purposes. The UCSD staff, along with their clinical consultants, reviewed the 1998 ICD-9 [1] diagnoses manual to determine which diagnoses were ill-defined and inappropriate for risk adjustment. Many diagnoses are indicative of symptoms rather than a specific disease condition which is likely to persist. For example, a diagnosis of chest pain can be indicative of many conditions and is most likely not a good estimator/predictor of health care expense.

Once the ill-defined conditions were isolated, the remaining diagnoses were placed into 19 major categories. Some are representative of specific body systems (e.g., cardiovascular or pulmonary) and others fall into a group of illnesses that affect multiple systems (e.g., infectious disease or diabetes). These major categories are further delineated into subcategories based on their perceived medical intensity. The following table provides a listing of the major categories, medical intensity subcategories, and sample conditions within each classification.

[1] ICD-9 is International Classification of Diseases, 9th Revision.

Table 1

The CDPS Categories with Sample Diagnoses[2]

Diagnostic Category	Sample Diagnoses
Cardiovascular	
Very High	Heart transplant status or complications
Medium	Congestive heart failure, cardiomyopathy, tricuspid and pulmonary valve disease
Low	Endocardial disease, myocardial infarction, angina, coronary atherosclerosis, dysrhythmias
Extra Low	Hypertension
Psychiatric	
High	Schizophrenia
Medium	Bipolar affective disorder
Low	Other depression, panic disorder, phobic disorder
Skeletal and Connective	
Medium	Chronic osteomyelitis, aseptic necrosis of bone
Low	Rheumatoid arthritis, osteomyelitis, systemic lupus, traumatic amputation of foot or leg
Very Low	Osteoporosis, musculoskeletal anomalies, thoracic and lumbar disc degeneration
Extra Low	Osteoarthrosis, skull fractures, other disc and vertebral disorders
Nervous System	
High	Quadriplegia, amyotrophic lateral sclerosis and other motor neuron disease
Medium	Paraplegia, muscular dystrophy, multiple sclerosis
Low	Epilepsy, Parkinson's disease, cerebral palsy, migraine, cerebral degeneration
Pulmonary	
Very High	Cystic fibrosis, lung transplant, tracheostomy status, respirator dependence
High	Respiratory arrest or failure, primary pulmonary hypertension, selected bacterial pneumonias
Medium	Other bacterial pneumonias, chronic obstructive asthma, adult respiratory distress syndrome
Low	Viral pneumonias, chronic bronchitis, asthma, COPD[3], emphysema

[2] *Richard Kronick, PhD, Todd Gilmer, PhD, Tony Dreyfus, MCP, and Lora Lee, MS,* Improving Health-Based Payment for Medicaid Beneficiaries: CDPS, *Health Care Financing Review/Spring 2000/v.21, no. 3, 32-33.*

[3] COPD is chronic obstructive pulmonary disease, GI is gastrointestinal. HIV is human immunodeficiency virus. AIDS is acquired immunodeficiency syndrome. A complete description of CDPS diagnostic categories by ICD-9-CM codes is available at http://www.medicine.ucsd.edu/fpm/cdps/.

Diagnostic Category	Sample Diagnoses
Gastrointestinal	
High	Peritonitis, hepatic coma, liver transplant
Medium	Regional enteritis and ulcerative colitis, chronic liver disease and cirrhosis, enterostomy
Low	Ulcer, hernia, GI[3] hemorrhage, intestinal infectious disease, intestinal obstruction
Diabetes	
Type 1 High	Type 1 diabetes with renal manifestations or coma
Type 1 Medium	Type 1 diabetes with complications or neurological or ophthalmic complications
Type 2 Medium	Type 2 or unspecified diabetes with complications, proliferative diabetic retinopathy
Type 2 Low	Type 2 or unspecified diabetes without complications
Skin	
High	Decubitus ulcer
Low	Other chronic ulcer of skin
Very Low	Cellulitis, burn, lupus erythematosus
Renal	
Very High	Chronic renal failure, kidney transplant status, or complications
Medium	Acute renal failure, chronic nephritis, urinary incontinence, cystostomy, or urinostomy
Low	Kidney infection, kidney stones, hematuria, urethral stricture, bladder disorders
Substance Abuse	
Low	Opioid, barbiturate, cocaine, amphetamine abuse or dependence, drug psychoses
Very Low	Alcohol abuse, dependence, or psychosis
Cancer	
High	Lung cancer, ovarian cancer, secondary malignant neoplasms, leukemia, multiple myeloma
Medium	Mouth, breast, or brain cancer, malignant melanoma, radiation, or chemotherapy
Low	Colon, cervical, or prostate cancer, carcinomas

[3] COPD is chronic obstructive pulmonary disease, GI is gastrointestinal. HIV is human immunodeficiency virus. AIDS is acquired immunodeficiency syndrome. A complete description of CDPS diagnostic categories by ICD-9-CM codes is available at http://www.medicine.ucsd.edu/fpm/cdps/.

Diagnostic Category	Sample Diagnoses
Developmental Disabilities	
Medium	Severe or profound mental retardation
Low	Mild or moderate mental retardation, Down's syndrome
Genital	
Extra low	Uterine and pelvic inflammatory disease, endometriosis, hyperplasia of prostate
Metabolic	
High	Panhypopituitarism, pituitary dwarfism, non-HIV[3] immunity deficiencies
Medium	Kwashiorkor, marasmus, and other malnutrition, parathyroid, and adrenal gland disorders
Very Low	Other pituitary disorders, gout
Pregnancy	
Complete/Incomplete	Normal pregnancy, complications of pregnancy, normal delivery, multiple delivery, delivery with complication
Eye	
Low	Retinal detachment, choroidal disorders, vitreous hemorrhage
Very Low	Cataract, glaucoma, congenital eye anomaly, corneal ulcer
Cerebrovascular	
Low	Intracerebral hemorrhage, precerebral occlusion, hemiplegia, cerebrovascular accident
Infectious Disease	
AIDS, High	AIDS[3], pneumocystis pneumonia, cryptococcosis, Kaposi's sarcoma
Infectious, High	Staphylococcal or pseudomonas septicemia, cytomegaloviral disease
HIV, Medium	Asymptomatic HIV infection
Infectious, Medium	Other septicemia, pulmonary, or disseminated candida, toxoplasmosis, typhus
Infectious, Low	Poliomyelitis, oral candida, herpes zoster, parasitic intestinal infections
Hematological	
Extra High	Congenital factor VIII and factor IX coagulation defects (hemophilia)
Very High	Hemoglobin-S sickle-cell disease
Medium	Other hereditary hemolytic anemias, aplastic anemia, splenomegaly, agranulocytosis
Low	Other white blood cell disorders, purpura, other coagulation defects

Each year an assessment is performed to map the ICD-9 codes introduced in the past year to the appropriate CDPS category. This mapping is not only reviewed by clinical consultants but the UCSD staff that designed the initial model.

[3] COPD is chronic obstructive pulmonary disease, GI is gastrointestinal. HIV is human immunodeficiency virus. AIDS is acquired immunodeficiency syndrome. A complete description of CDPS diagnostic categories by ICD-9-CM codes is available at http://www.medicine.ucsd.edu/fpm/cdps/.

Prior to assessing the value associated with each of the above categories, a protocol was established as to how individuals could be classified into one of the above CDPS diagnostic categories. To reduce the effects of data reporting and possible gaming, only a single diagnosis, regardless of position (e.g., primary, secondary, tertiary, etc.), is necessary to establish a CDPS diagnostic category. In the event that multiple conditions are identified within a major category, the individual is assigned to the subcategory with the highest intensity level. This protocol recognizes that individuals with multiple conditions in the same major category will most likely be treated simultaneously and not incur substantial additional cost. Although the CDPS model only incorporates the most serious diagnostic intensity within each major category, it recognizes the increased medical cost when multiple systems are affected with chronic conditions. For example, a person diagnosed with Panic Disorder (Psychiatric Low), Schizophrenia (Psychiatric High), and Hypertension (Cardiovascular Extra Low) would receive the relative cost weights associated with the Psychiatric High and Cardiovascular Extra Low categories.

The CDPS categories primarily represent chronic conditions that are likely to persist and correlate to additional medical expense. However, many conditions related to low-income acute populations (such as ear infections) are not included within the list above. Recognizing that not all risk is explained through the diagnostic categories, the CDPS model incorporates demographic factors to estimate the medical resources not contained in one of the conditions listed in Table 1. There are seven demographic classifications within this component of the CDPS model, which are listed below:

- Male Age 21 to 24
- Female Age 21 to 24
- Male Age 25 to 44
- Female Age 25 to 44
- Male Age 45 to 64
- Female Age 45 to 64, and
- Age 65 and older

To classify individuals into one of the demographic categories above, their age should be calculated at the end of the study period, which is also referred to as the base period.

More information is available on the CDPS model at the following web-address:
http://www.medicine.ucsd.edu/fpm/cdps/cdps_hcfr.pdf

Relative (Cost) Weights

Using 12 months of data, the cost with each Medicaid recipient was summarized. Then, each Medicaid recipient was classified into appropriate CDPS categories (diagnostic and demographic). A regression analysis was performed to develop the costs attributable to each of the CDPS categories. This cost information was then translated into a relative cost weight by comparing the cost associated with each CDPS category to the average cost of the population. For example a cost weight of 2.01 for Diabetes Type 1 High,

indicates that a Disabled individual with a Diabetes Type 1 High classification (without taking into account the member's demographic and additional, if any, diagnostic conditions) would be approximately two times more expensive than the average Disabled recipient.

The cost weights for Ohio were derived from the seven-state data used in the initial model design, with adjustments to reflect the population and benefits covered under Ohio's ABD managed care program.