

Crossing Paths Intersection of Risk Adjustment and Coding



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Objectives

- Define an outcome
- Define risk adjustment
- Describe risk adjustment measurement
- Discuss interactive scenarios

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What is an Outcome?

- An outcome is a health status change that occurs over time, where the change is intrinsic to the patient.
- The change can be positive, negative, or neutral
- The change can correspond to improvement, decline, or maintenance (no change) in the patient condition
- The definition does not include a presumed direction; therefore any deviation (or non deviation) in health status between the initial time point and the follow-up time point constitutes an outcome.

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What is an Outcome?

- Change in health status over the time interval during which care is provided can occur either as a result of the care provided or the natural progression of the disease and disability
- The challenge in outcome analysis is to somehow separate changes due to care from those due to natural progression.
- This is achieved through a process called risk adjustment

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What is Risk Adjustment?

- Statistical risk adjustment refers to a collection of analysis methods designed to separate the relationship of outcomes with care provided from the relationship of outcomes with natural progression of diseases and disability, which is critical to accurate outcome analysis.

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What is Risk Adjustment?

- In essence, the general intent of risk adjustment is to compensate or adjust for differences in case mix or risk factors (between the agency and a comparison sample)
- Did my patient's improvement in bathing result from the care my agency delivered or the natural improvement of the disability?

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What is a Case Mix?

- For purposes of outcome analysis the definition of case mix is a given agency's patient characteristics, circumstances, disabilities, and diseases. (i.e. such as a patient's environmental or living conditions, demographics, and baseline health status data)
- The definition is not synonymous with a prospective payment system case mix code which is a code that represents a disease or condition that will require extra agency resources.

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What is a Risk Factor?

- A patient condition or circumstance that (positively or negatively) influences the likelihood of a patient attaining the outcome.
- ICD-9 codes are some of the risk factors

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Risk Factor

- Diagnosis codes are incorrectly referred to as providing 'risk adjustment'
- ICD-9 codes are risk factors that are considered for inclusion in the risk adjustment statistical equation
- Approximately 15% of risk factors dependent on ICD-9 codes
- Approximately 85% of risk factors NOT dependent on ICD-9 codes

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Home Health Outcomes

- Home health agencies have always been concerned with measuring their own performance relative to other providers
- The agency's interest in self analysis is as strong as the external forces arising from payers, regulators and consumers.
- Only recently has it been possible to measure outcomes in our industry
- Outcomes have become increasingly important

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Home Health Outcomes

- Consumers and their families are becoming increasingly aware of the outcome driven market
- Payers such as Medicare, Medicaid, managed care plans want to know what they obtain on behalf of their patients for the dollars spent
- Organizations such as AARP are very active in obtaining outcome information for their members

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Home Health Outcomes

- The OASIS data set is the means used to collect home health outcome data
- OBQI (Outcome Quality Based Improvement) was implemented to achieve outcome measurement in our industry
- 49 outcome measures were selected on the basis of both clinical and statistical criteria

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49 Outcome Measures

- 33 End result outcomes
 - 20 Functional Outcomes
 - 13 Health Outcomes
- 4 Utilization Outcomes
- 12 Potentially Avoidable events
 - 10 of the 12 will be publicly reported

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Outcome Measure Criteria

- Display sufficient variation within the home care patient population (i.e. neither extremely rare or universally common)
- Can be affected by the care provided by a home care agency
- Reflect meaningful aspects of health status or quality of life for home care patients

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Functional Outcome Measures

- Improvement in bed transferring
- Stabilization in bed transferring
- Improvement in ambulation/locomotion
- Improvement in eating
- Improvement in light meal preparation
- Stabilization in light meal preparation
- Improvement in phone use
- Stabilization in phone use
- Improvement in management of oral meds
- Stabilization in management of oral meds

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Functional Outcome Measures

- Improvement in dyspnea
- Improvement in pain interfering with activity
- Improvement in speech and language
- Stabilization in speech and language
- Improvement in status of surgical wounds
- Improvement in urinary tract infection
- Improvement in urinary incontinence
- Improvement in bowel incontinence

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Functional Outcome Measures

- Improvement in grooming
- Stabilization in grooming
- Improvement in dressing upper body
- Improvement in dressing lower body
- Improvement in bathing
- Stabilization in bathing
- Improvement in toileting transferring
- Stabilization in toileting transferring
- Improvement in toileting hygiene
- Stabilization in toileting hygiene

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TABLE 5: Logistic Regression Model for Predicting the Outcome of Improvement in Bathing.

| Risk Factor Measured at SOC/ROC ¹ | Coefficient ² | Odds Ratio ² | (90% CI) ² |
|--|--------------------------|-------------------------|-----------------------|
| Acute condition: orthopedic (0-1) | 0.092 | 1.096 | (1.078 - 1.115) |
| Acute condition: oxygen therapy (0-1) | -0.197 | 0.821 | (0.802 - 0.841) |
| Acute condition: neurologic (0-1) | 0.072 | 1.075 | (1.049 - 1.102) |
| Acute condition: cardiac/peripheral vascular (0-1) | 0.078 | 1.081 | (1.063 - 1.098) |
| Age: 75 to 84, inclusive (0-1) | -0.078 | 0.925 | (0.909 - 0.940) |
| Age: 85 or more (0-1) | -0.268 | 0.765 | (0.750 - 0.780) |
| Disability in ambulation (0-5) | -0.206 | 0.814 | (0.802 - 0.826) |
| Disability in bathing: Level 2 (0-1) | 1.177 | | (3.174 - 3.314) |
| Disability in bathing: Level 3 (0-1) | 2.288 | | (9.588 - 10.132) |
| Disability in bathing: Level 4 (0-1) | 2.529 | | (12.152 - 12.938) |
| Disability in bathing: Level 5 (0-1) | 3.888 | | (46.243 - 51.529) |

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Risk Factor Categories

3 Risk Factor Categories

- **ICD-9 Code Classifications**

- 19 variables

- **Acute Conditions**

- 16 acute variables

- **Chronic Conditions**

- 9 chronic variables

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Risk Factor Criteria

3 Step Process

- Ordinary least square equation (OLS) is the standard linear regression procedure to narrow down the potential number of risk factors for each outcome measure.
- Logistic regression equation is used to predict the probability or occurrence of an event by subjecting data to a logistic curve
- Remaining risk factors and coefficients were reviewed by clinicians, nurses with home care experience. If there was consensus that for some reason the risk factor should not be included the nurses opinion always trumps the science.

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Risk Factor Inclusion

- 344 different risk factors included in the regression models
- 44 risk factors are wholly dependent on ICD-9 codes
- Every ICD-9 code was considered as a potential risk factor
- All V codes were considered as risk factors
- One E code (E888 fall) was considered as a risk factor

- Note: OASIS B1 = 150 patient level attributes
OASIS C = 272 patient level attributes

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ICD-9 Codes

- E888.9 was considered for inclusion but did not survive the three step process for inclusion as a risk factor
- Only Chapter 14 (congenital anomalies) and Chapter 15 (perinatal period) did not survive the three step process for inclusion as risk factors
- 35 V codes survived the three step process for inclusion as risk factors

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V Code Risk Factors

- V09.0 MRSA
- V43.64 Status hip joint prosthesis
- V43.65 Status knee joint prosthesis
- V45.81 Status Aortocoronary bypass
- V53.6 Urinary devices
- V54.11 Aftercare traumatic fracture ↑ arm
- V54.13 Aftercare traumatic fracture hip

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V Code Risk Factors

- V54.16 Aftercare traumatic fracture lower leg
- V54.17 Aftercare traumatic fracture vertebrae
- V54.19 Aftercare traumatic fracture bone
- V54.81 Aftercare following joint replacement
- V54.89 Other orthopedic aftercare
- V55.1 Attention gastrostomy
- V55.3 Attention colostomy

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V Code Risk Factors

- V55.6 Other artificial urinary tract opening
- V57.1 Physical therapy
- V57.21 Occupational therapy
- V57.3 Speech therapy
- V57.89 Multiple therapy
- V58.3x Attention to dressings
- V58.42 Aftercare following neoplasm surgery

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V Code Risk Factors

- V58.43 Aftercare following trauma surgery
- V58.49 Other specified aftercare surgery
- V58.61 Long term use of anticoagulants
- V58.62 Long term use of antibiotics
- V58.67 Long term use of insulin
- V58.73 Aftercare following circulatory surgery
- V58.74 Aftercare following respiratory surgery

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V Code Risk Factors

- V58.75 Aftercare following digestive surgery
- V58.76 Aftercare following genitourinary surgery
- V58.77 Aftercare following skin and SQ surgery
- V58.78 Aftercare following musculoskeletal surg
- V58.81 Fitting and adjust of vascular catheter
- V58.83 Encounter for drug monitoring
- V58.89 Other specified aftercare

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Risk Factors

- Disease or condition is either present or not
- Parentheses indicates the number or value in the risk factor (i.e. 0-1, 0-5)
- All codes within the ICD-9 chapter are included
- Only one code from the same classification will be included as a diagnosis risk factor
- All codes will be included as a severity rating risk factor when applicable

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TABLE 5: Logistic Regression Model for Predicting the Outcome of Improvement in Bathing.

| Risk Factor Measured at SOC/ROC ¹ | Coefficient ² | Odds Ratio ² | (90% CI) ² |
|--|--------------------------|-------------------------|-----------------------|
| Obese at SOC/ROC (0-1) | -0.138 | 0.871 | (0.854 - 0.888) |
| Number of diagnoses with severity rating ≥ 2 (0-6) | 0.030 | 1.030 | (1.025 - 1.036) |
| Severity rating for primary diagnosis (0-4) | 0.082 | 1.086 | (1.073 - 1.099) |
| Diagnosis: genitourinary system diseases (0-1) | -0.104 | 0.901 | (0.881 - 0.921) |
| Diagnosis: skin/subcutaneous diseases (0-1) | -0.193 | 0.825 | (0.801 - 0.849) |
| Diagnosis: neoplasms (0-1) | -0.154 | 0.857 | (0.835 - 0.881) |
| Diagnosis: mental disease (0-1) | -0.081 | 0.941 | (0.919 - 0.964) |
| Diagnosis: nervous system disorder (0-1) | -0.214 | 0.807 | (0.759 - 0.856) |
| Diagnosis: respiratory system diseases (0-1) | 0.084 | 1.088 | (1.066 - 1.110) |
| Diagnosis: digestive system diseases (0-1) | 0.079 | 1.082 | (1.058 - 1.107) |
| Resumption of Care with intervening in-patient stay (0-1) | -0.071 | 0.932 | (0.911 - 0.954) |
| Rehabilitation procedures: physical therapy (0-1) | 0.102 | 1.108 | (1.088 - 1.127) |
| Rehabilitation procedures: other than physical therapy (0-1) | 0.081 | 1.084 | (1.054 - 1.115) |
| Aftercare following surgery (0-1) | 0.172 | 1.188 | (1.153 - 1.224) |

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Symptom Control Risk Factors

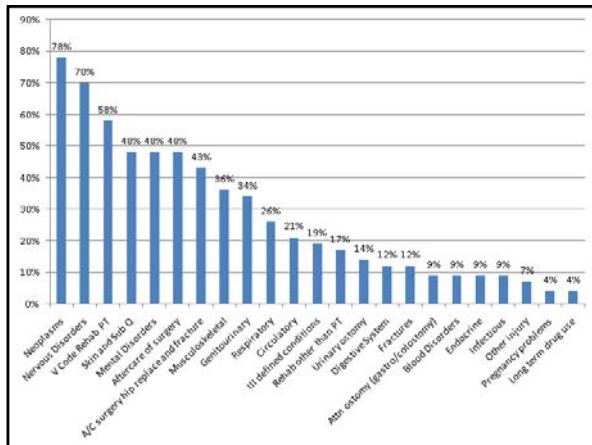
- Number of diagnoses with severity rating ≥ 2
- Severity rating for primary diagnosis (0-4)
- Maximum severity rating among all diagnoses

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Symptom Control Rating Scale

- 0 - Asymptomatic, no treatment needed at this time
- 1 - Symptoms well controlled with current therapy
- 2 - Symptoms controlled with difficulty, affecting daily functioning; patient needs ongoing monitoring
- 3 - Symptoms poorly controlled; patient needs frequent adjustment in treatment and dose monitoring
- 4 - Symptoms poorly controlled; history of re-hospitalizations

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Example

- Patient is admitted for surgical aftercare due to bladder cancer that resulted in a bladder resection with resulting urostomy. Patient also has diabetes and generalized weakness. Patient has always taken an oral hypoglycemic but since surgery has been on a sliding scale for insulin. Therapy will be seeing patient for the weakness but nursing is primary for aftercare. Patient will begin chemo after incision has healed.

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Answer

- M1020: V58.42 Aftercare for neoplasm
- M1022: 188.9 Bladder cancer
- M1022: V55.6 attn urostomy
- M1022: 780.79 Generalized weakness
- M1022: 250.00 Diabetes Mellitus
- M1022: V58.67 L/T use of insulin
- M1022: V45.74 Status absence of bladder

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Risk Factor Criteria

| MO Question | ICD-9 Code | % of 41 Measures | Primary Severity Rating | Any Severity Rating >= 2 | Maximum Severity Rating |
|-------------|------------|------------------|-------------------------|--------------------------|-------------------------|
| M1020 | V58.42 | 48% | 34% | 36% | 7% |
| M1022 | 188.9 | 78% | | 36% | 7% |
| M1022 | V55.6 | 14% | | 36% | 7% |
| M1022 | 780.79 | 19% | | 36% | 7% |
| M1022 | 250.00 | 9% | | 36% | 7% |
| M1022 | V58.67 | 4% | | 36% | 7% |

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Example

- Patient is admitted for surgical aftercare of hip joint replacement due to fracture. Co morbidities include a staph infected stage 2 pressure ulcer of heel. The patient fell while in the hospital causing a trauma wound to the forearm. Therapy and nursing will see patient.

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Answer

- M1O20: V54.81 A/C joint replace M1O24: 820.8
- M1O22: 707.07 Pressure ulcer heel
- M1O22: 707.22 Pressure ulcer stage
- M1O22: 041.10 Staph infection
- M1O22: 881.20 Trauma wound forearm
- M1O22: V43.64 Status hip joint

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Risk Factor Criteria

| MO Question | ICD-9 Code | % of 41 Measures | Primary Severity Rating | Any Severity Rating >= 2 | Maximum Severity Rating |
|-------------|------------|------------------|-------------------------|--------------------------|-------------------------|
| M1O20 | V54.81 | 43% | 34% | 36% | 7% |
| M1O22 | 707.07 | 48% | | 36% | 7% |
| M1O22 | 707.22 | 0% | | 36% | 7% |
| M1O22 | 041.10 | 9% | | 36% | 7% |
| M1O22 | 881.20 | 7% | | 36% | 7% |
| M1O22 | V43.64 | 0% | | 36% | 7% |
| M1O24 | 820.8 | 12% | | 0% | 0% |

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Example

- Patient admitted for surgical aftercare for a cardiac valve replacement due to aortic stenosis. The patient has been in a rehab facility 3 weeks prior to home health admission. Co morbidities are UTI, COPD with asthma, depression and senile dementia

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Answer

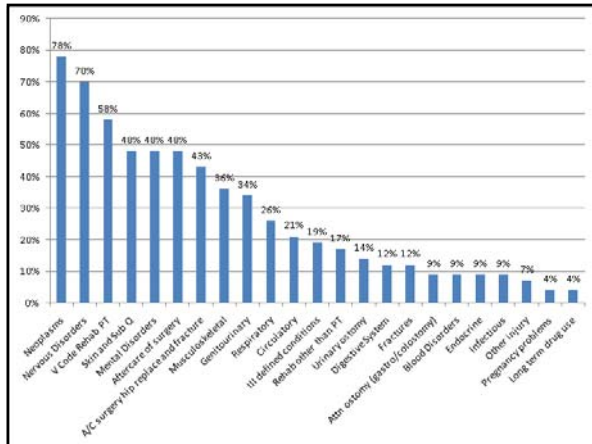
- M1020: V58.73 A/C circulatory system
- M1022: 599.0 UTI
- M1022: 493.20 COPD with asthma
- M1022: 311 Depression
- M1022: 290.0 Dementia
- M1022: V43.3 Status of valve replacement

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Risk Factor Criteria

| MO Question | ICD-9 Code | % of 41 Measures | Primary Severity Rating | Any Severity Rating >= 2 | Maximum Severity Rating |
|-------------|------------|------------------|-------------------------|--------------------------|-------------------------|
| M1020 | V58.73 | 48% | 34% | 36% | 7% |
| M1022 | 599.0 | 34% | | 36% | 7% |
| M1022 | 493.20 | 26% | | 36% | 7% |
| M1022 | 290.0 | 48% | | 36% | 7% |
| M1022 | 311 | 0% | | 36% | 7% |
| M1022 | V43.3 | 0% | | 36% | 7% |

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Take Away Points

- Home health continues to move toward an outcome based system with OBQI
- Consumers currently utilize home health compare
- OASIS C became effective January 2010
- Pay for performance is on the horizon
- Bundled services is part of health reform act

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Take Away Points

- Coding has an impact on risk adjustment calculation
- It's only one ingredient in the recipe
- Don't try to push the ball up the hill
- A coder's responsibility is to capture what is happening with the patient
- Accurate coding is a critical part of the risk adjustment equation

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