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Patient Grouping: Converting Data into Actionable Insight using Pure Clinical Categorical Methodologies

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Introduction

There's a tendency in health systems to analyse one problem at a time; this approach is both bad medicine and bad analytics, people with multiple chronic diseases, all interacting with each other, will have clinical presentations and patterns of resource consumption greater than the sum of their individual diseases. Health systems need a wholeperson approach to measuring burden of illness, one that can distinguish between patients who may share the same diagnosis but differ widely in their severity of illness, overall health status, current and projected use of resources and/or their need for more immediate intervention.

Methods

This abstract makes the argument that a pure clinical categorical methodology is best suited to deliver this insight, one that would . . .

* assign individuals based on clinical data alone; diagnoses, procedures, drug codes, functional and mental health status (simple input)

* assign individuals into a single, mutually exclusive category by take a whole-person approach to measuring their burden of illness (not multiple vectors of segmentation around specific diseases)

* derive a patient's severity of illness from a clinical understanding of their disease burden (not derived simply from adding up co-morbidities),

* support a comparison of the types and amounts of services across clinically similar individuals ("apples with apples" comparisons, a foundational requirement for value-based care)

* offer granularity and specificity, with meaningful aggregation (turning the analytical microscope up and down whilst preserving clinical meaning)

Insight

Solventum Clinical Risk Groups (CRG) are a pure clinical categorical model and the breadth of insight these models can deliver may be demonstrated using their real-world application ...

* Better understanding the burden of illness of a population: Molise, Italy, Florida State

Aggregated CRGs enable analysts to step from the macro to the micro with ease whilst maintaining clinical relevance.

* Value Based Care - Casemix Adjusted Capitated Payments: New York State

CRGs enable the fairer reimbursement of care plans based on member burden

* COVID-19: Identification of "at risk" population and PPE distribution: Valencia, Spain

The Region of Valencia used CRGs to prioritize PPE distribution to their "at-risk" populations.

* Chronic Care Management and resource allocation to Primary Health Care Areas: Catalonia, Spain

CRGs are used to identify areas of need and responds with infrastructure and resource investment.

* Reducing Unwarranted Variation in Prescription Costs: Valencia, Spain

CRGs used to implement rational measures of cost containment in pharmaceutical expenditure.

* Clinical Variation within Disease Populations: Mt Sinai Health System, New York

"Not all Diabetics are the same", using CRGs to identify High-Risk Versus High-Opportunity Patients

* Improving Readmission Rates: North Carolina

CRGs identify patients whose risk of readmission, can be reduced through earlier follow-up post discharge.

* Focused Interventions: New York State

Critical reporting of longitudinal CRG variation within populations to drive investigation and/or prioritized intervention.

Conclusions

Unlike opaque and non-clinical statistical models, A pure clinical categorical model creates a common language for clinicians and administrators to improve health status and advance value based care ay both the individual and population level.

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