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Achieving Healthcare's Social Imperative: Is It How We Pay, or How We Plan?

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Healthcare economics -- financing, cost control, and payment reform – dominates our national conversation and has been the primary driver of care delivery redesign, especially around the concept of 'value-based care'. However, "value" is contextual, and currently grounded in a financial calculus of efficiency, risk-reduction and managed resource utilization. Value-based payments are either embedded in capitated fees or tied to utilization-associated metrics and quality measures with known health-economic value.

This focus puts patients and professionals in a subordinate position: despite substantial investments of time, money and energy, neither the adoption of information technologies nor expanded access to coverage has demonstrated the 'value' of improved patient outcomes[1], but both are associated with the unintended consequences of professional dissatisfaction and burnout.

What if achievement of healthcare's intent and purpose is not grounded in economics or technology? What if the traditional organizing principles of medicine are insufficient to allow for adoption of the kind of problem representations that can support the intent, purpose and needs of 21st Century systems of care?

Assuming the social imperative for our healthcare system is to reduce suffering, prevent morbidity and disability (and associated avoidable costs), and improve (or sustain) the quality of health of individuals and communities, the solution to healthcare's current challenges may be less about how we pay for care and more about how we plan for care.

If we learned anything from our experience with electronic medical records, it's that we should consider the intent and purpose of the systems we envision before building out infrastructure. Imagine what our EMR systems would look like if we had considered how they could enhance our capacity to improve health rather than replicating the artifacts of encounter capture for billing and coding?   It's the underlying information architecture – the "systemic, structural, and orderly principles to make something work". that makes the difference, not just the existence of the platform.

In 1977 Dr. George Engel published a report that advocated for a more inclusive scientific model, if, "physicians in the future are to apply the same scientific rigor to the approach and understanding of patients and their care as they customarily apply to the diagnosis and treatment of disease".[2] He was prescient; much of what we consider innovation today – such as the recent interest in social determinants of health -- would be superfluous if we had taken Dr. Engels advice to incorporate behavioral dimensions and social factors into our mental model, and organizing principles, for care.

In 1983, Dr. Robert Gordon, Special Assistant to the Director of the NIH, published a critique of the traditional approach of classifying prevention strategies based on 'origins of disease', proposing a new framework for "operational classification" of patient-focused clinical strategies.[3] Gordon defined prevention strategies by their predictable outcomes, targeted to those 'for whom the measure is advisable on a cost-benefit basis."

Despite these recommendations, medicine still doesn't have an accepted information architecture for care planning: there isn't even a collective definition for the nature of a "care plan". Before designing any framework or platforms for "universal coverage", perhaps there needs to be clear understanding of what we expect such coverage to accomplish and how.

In our current systems, the responsibility for the elements of a patient's care is apportioned independently among a "Health Resource-Community" (primary care and specialist physicians, nurses, case managers, therapists, social workers, etc.) who, based on the mental model of their discipline, contribute insights and related orders or action items.

Unfortunately, even when everyone is at the table (or facing the patient for that matter), integration in healthcare is often is no more real that the parallel play of toddlers. This 'aggregation" model can result in conflicting priorities in terms of resource allocation, limitations on sharing knowledge and resources, redundancies, mis-communications, clashes in advice and counsel, and potential risks due to conflicts in evidence, especially when judgements are made in isolation of other members of the patient's health resource-community.

In reality, an individual's health resource-community is much larger, including are all those individuals, organizations, entities and environments (including the patient and their family) that have any involvement -- actual, virtual or potential -- to manage or influence variables that have an effect on a patient's health status.

We can increase the scope and power of care, and better ensure patient-centered success, by orchestrating the actions of a patient's health resource-community (irrespective of any formal affiliations or lack thereof) and managing the system-level context in which they work. This includes both goal-based and role-based interactions, as well as the interaction design of the resource-community itself.

However, as we know from the symphony, orchestration is difficult without a common 'score' that integrates the diverse instrumental voices while accounting for their different, but potentially harmonious roles; equally, truly integrated care is impossible without a similar "single source of truth" for a patient's health-related goals and associated plans of care.

A universal care plan architecture would integrate these perspectives and serve as the 'single source of truth' for the patient, orchestrating collaboration and accountability across all the members of a patient's health resource-community.

An integrated, person-centered architecture for how we plan for care would allow us to more accurately determine the requirements, and value, of investments to improve the health of our citizens, and allocate resources to ensure care plan goal achievement. See Appendix 1 for an example as derived from Gordon; adopting such an operating framework would ensure that every member of society has the same opportunity to optimize their health status, while accounting for both individualized "person-level" goals and the "system-level" (USPHS, HEDIS, ACO measures) goals imposed or required by third parties.

A universal architecture for how we plan for care, and allocate resources to ensure care plan goal achievement, would allow us to determine the requirements, and value, of investments to improve the health of our citizens. Such an architecture would:

a) Orient all the members of a patient's health resource-community toward the 'whole-person',
b) Account for all the possible system- and person-level goals necessary to improve or sustain a patient's quality of health, including lifestyle/wellness, selected and indicated prevention, risk and condition management, and palliation,
c) Eliminate artificial boundaries related to the biopsychosocial determinants (molecular, physiological, structural, neuropsychological, environmental, genomic, biomic, or social) of a patient's conditions or risks, and,
d) Integrate, and account for, acute, chronic, preventive, functional and spiritual conditions.

Drawing on robust mathematical models that support optimized decision-making in the presence of uncertainty[4], such a framework would also require a shift in the focus on diagnosis as the basis of decision making to a more precise understanding -- and description -- of a patients 'condition' in terms of their *current state* relative to their health-related goals. Under this model, 'condition' will be defined by three key state-related variables that are often referred to, but are rarely operationalized in medical care:

- Physical state: primary observable, tangible variables
- Informational state: secondary or derived knowledge about a state
- Belief state: the perspective of the agent under observation about their state

Two patients with the same symptoms or diagnoses may have very different 'conditions'; this new clinical vocabulary will be used to better describe conditions in terms of state-related variables, and, as such, better shape the strategies-to-goal for care.

The purpose of a care plan is then grounded in the strategies and resources required to effect change from 'current-state' to 'goal-state'. This is accomplished by monitoring the state of the patients risks and conditions and escalating and de-escalating clinical and other resources to effect productive changes in the patients' health status and/or associated molecular, physiological, structural, neuropsychological, environmental, genomic, biomic, or social benchmarks (see Appendix 2). In the case of diagnostic processes, it would involve orchestrating an optimized scope and sequence by which state-related variables are identified and categorized.

The adoption and integration of a universal integrated care plan framework would ensure that every member of society has the same opportunity to optimize their health status, enhance the capacity of a patient's entire health-resource community to monitor and contribute to progress towards goal and allow for a rational and individualized approach to intervention design and resource allocation towards healthcare's social imperative while assuring a concordant, harmonious experience for the patient.

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[2] Engel G. The Need for a New Medical Model: A Challenge for Biomedicine. Science, 1977; 196(4286): 129–36.

[3] Gordon RS. An Operational Classification of Disease Prevention. Public Health Reports. 1983; 98(2): 107–109

[4] Powell WB. A Unified Framework for Stochastic Optimization. European Journal of Operational Research. 2019; 275(3): 795-821. https://castlelab.princeton.edu/wp-content/uploads/2017/09/Powell-UnifiedFrameworkStochasticOptimization_July222017.pdf

APPENDIX 1: Revised Gordon Care Plan Architecture

HEALTH-GOAL CATEGORY	**Wellness/ Lifestyle**	**Universal Prevention**	**Selected Prevention**	**Indicated Prevention**	**Condition Management**	**Compassionate Care**
OPERATIONAL FOCUS	***Individual focus***	***Community-based***	***Characteristic-based***	***Condition or risk- based***	***Diagnosis or event-based***	***Prognosis-based***
STRATEGIC TARGETS	Individuals who seek to achieve or sustain personal goals for physical, mental and social well-being, independent of any associated risks or conditions	Targets whole population (nation, community) and aims to prevent or delay universal health risks or conditions	Targets groups or individuals whose risk is distinguished by non-clinical traits, such as age, gender, family history, geography, occupation	Targets groups or individuals with an existing condition or other data or identifiers indicating condition-related risks (failed screenings, co-morbidities, risks associated with existing diagnoses)	Targets groups or individuals with confirmed diagnosis or other condition with influence over quality of health; focus on improving the condition, or achieving and/or sustaining condition stability	Patients with any serious illness who have physical, functional, psychological, or spiritual distress as a result of their conditions and/ or associated treatments
EXAMPLES: Goal/ Intervention	Daily walks/gym membership Meditation for stress Nutrition and food choices Sleep discipline	Seat belt use Weight screening Flu shots Smoking education	Mammography in women Colonoscopy over 50 Prenatal Tay-Sachs screening in Ashkenasi Jews Sickle cell screening for African-Americans	CV event reduction in diabetes Apnea Screening when BMI>30 Readmission risk reduction Cancer survivorship Childhood exposure to ACES	Blood sugar management in DM (medication/ diet) Medication management in CHF Weight loss in HTN Depression management Surgery for Appendicitis	Palliative care End of life care/Hospice

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APPENDIX 2:   CARE PLANNING PROCESS

- First, determine the current state (as defined by physical, informational and belief variables) of each condition and/or risk factor in each of the care plan categories
- Compare or benchmark the current state of each condition and/or risk factor against an optimal goal-state for that individual in each of the care plan categories as defined by evidence, best practices, reference standards of the medical community and/or patient preferences, desires or aspirations
- Evaluate the determinants of the current state (including, but not limited to molecular, physiologic, structural, neuropsychological, environmental, genomic, biomic, or social) and assess and document their relative influence on the breadth, depth and scope of variation from goal-state.
- Chose patient-personalized strategies (including but not limited to pharmacotherapy, surgical procedures, behavioral therapies, coaching, human support services, medical devices and/or social and/or environmental interventions) to effect change in the patient-specific determinants towards a targeted goal-state. Use patient-level data (including but not limited to clinical, demographic, psychographic, consumer, socio-economic or educational) to optimize the engagement, acceptance and commitment to these strategies. For diagnostic processes, pre-determine the optimal scope and sequence of events in order to maximize efficiency and effectiveness of the process.
- Based on the mutually agreed upon strategies, make decisions as to the tactical resources to be deployed -- specific medications, procedures, tests, services, amenities or roles -- that are known to bring about the desired change in the patient's state. Based on the resources deployed, identify and finalize metrics to track progress to towards goal and endpoints for the intervention; if possible, predetermine escalation path should progress not meet expectations.
- Closely monitor progress towards goal; if the rate of change does not meet expectations, escalate resources as appropriate. Resources or strategies can be changed, modified, escalated or deescalated as is appropriate for the patient's conditions, needs, or goals for their health

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About Union In Action, Inc
Union In Action is a 501(c)3 public charity, founded to support the productive evolution of healthcare and the capacity of our systems of care to improve the quality of health of individuals and communities using the principles of integration, collaboration, and orchestration. Our current focus is the transformative integration of behavior sciences into healthcare and improving interdisciplinary collaboration for people with behavioral, developmental and mental health conditions. For more information, visit www.unioninaction.org