



Innovating Healthcare Business Process Service Delivery

Care Management

November 2010

Introductions

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Actuarial Consulting company founded in 1998. A leader in managed care, disease management and predictive modeling applications.

4 healthcare actuaries; 4 PhDs; healthcare analytics team.

Four main business segments:

- Disease and Care Management consulting (operations; ROI; outcomes; predictive modeling).
- Actuarial Consulting (start-up health insurers in NY and IN; state Medicaid plans; Massachusetts Healthcare Connector Board Member).
- Wellness and Care Management Operations Support Services (analytics, data management, risk assessment, outreach, fulfillment).
- Analytics and Reporting Software Applications.

Strong research foundation: we have always supported a strong research function to inform our recommendations. Research Professor, Georgetown Dept. of Health Administration.

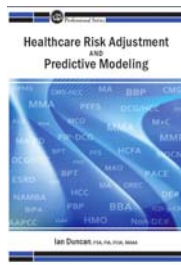
Introductions

Author of several books and peer-reviewed studies in healthcare management and predictive modeling.

Published 2008



Due end-2010

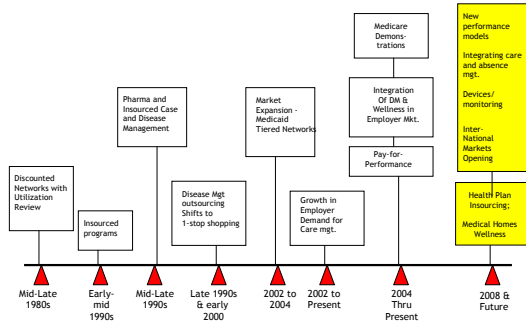


Agenda

1. DM Market Evolution.
2. Challenges to the traditional Model.
3. The trend to insourcing.
4. Defining Success & Value Chain Components.
5. Evaluation.
6. Discussion.

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Evolution of Managed Care



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Market Status: Traditional Model Faces Challenges

1. Recent consolidation (Inverness acquires Alere, Matria, Paidos; BUPA acquires Health Dialog; Healthways/Lifemasters merger aborted, etc.). Reduced margins from increased competition/new players, plus move to 2nd generation products that are less expensive and more effective.
2. Traditional model still reflects 90's-style call center-based programs that are threatened by labor cost/scarcity and poor results.
3. Of every \$ spent by sponsors on DM, only about one-third funds nurse-patient interactions.
4. This model was sustainable/successful when DM was sold (by vendors to purchasers) as a *Financial Solution*. "For every \$1 you give me in fees, I promise to return \$2 (or more) in savings to your bottom line."
5. Financial purchasers and others are increasingly skeptical about the claimed savings. Competition is over guarantees for employers.
6. At the same time the promise of a \$10-50 billion dollar DM market has attracted a host of *2nd generation* "component" suppliers, and a host of new "wellness" competitors.

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Current Model still reflects the 90's

1. Expensive, nurse call-center-centric model.
 - Becoming more difficult to reach and truly engage members telephonically.
2. Is the model sustainable?
 - Multiple overlapping sources of health information/programs.
 - Attorney General MN: members being pestered.
 - Relatively low numbers of members managed.
 - Nurse shortage to accelerate.
 - Increasing belief that the physician needs to be part of the solution (Medical Home model).
 - Employers paying incentives for employee participation.
3. Is it possible to empower patients and sustain behavior change via the telephone?
 - Industry has not been able to demonstrate what works/doesn't work.
4. What is the experience of other technology-based solutions?

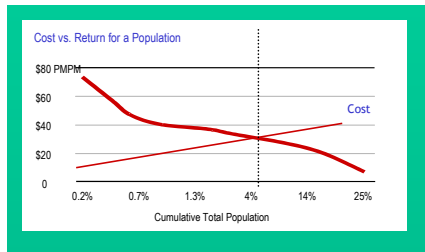
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Health Plans considering DM Insourcing/Assembly

- Questioning the "value myth bubble" as more reliable methods of measuring the "real" impact of DM become available vs. reliance on vendor-based methods of measurement.
- Physician backlash over "the huge growth & profitability of the for-profit DM" movement [especially for Medicare].
- Greater recognition that many DMOs are currently still selling largely 1st generation "call center" programs.
- Slow reaction of traditional full service DMOs to engineer next-generation products.
- Status of several large health plans that are already expanding internal capabilities [Humana, Aetna, Cigna, Kaiser, Highmark, Horizon, BCBS Minnesota].
- Demands from employers and their consultants. Growing recognition of the need for better integration of chronic disease initiatives, especially with wellness and disability/absence management.

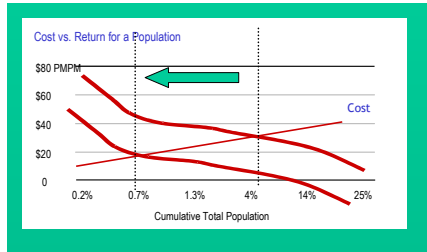
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DM Programs anticipate savings at this level



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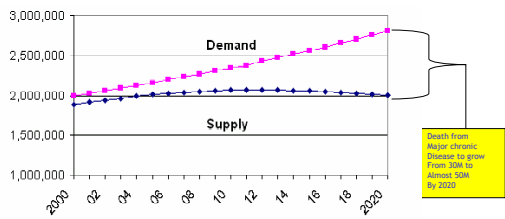
What if returns are overstated?



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Call-Center Labor/Cost Challenge

Supply and Demand Projections for Nurses: 2000 to 2020



Source: Bureau of Health Professions, RN Supply and Demand Projections

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Typical DM Program Economics

A typical telephonic DM program:

Population	1,000	Reachable	70%
Prevalence	6%	Reached	11
Chronic	60	Enrollment rate	70%
High Risk %	25%	Enrolled	7
High Risk Chronics	15		

For this DM program, an employer could pay \$30,000 to \$60,000 annually, or \$100 to \$300 per enrolled member per month.

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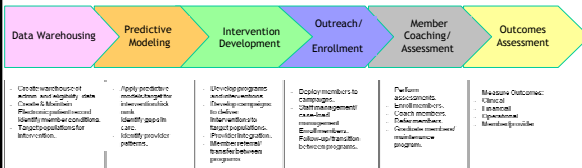
Some possible solutions

1. Smaller programs focused on more high-opportunity populations? Possibly, but outsourced vendors have high overheads.
2. Cost-structure can be reduced by industry-consolidation, improved use of technology or other increases in efficiency.
3. Automation.
4. Leveraging resources already present in a health plan. Outsourcing to a third-party does not take advantage of the sponsor's comparative advantages: for example, networks of providers and provider relationships.
5. Or perhaps the economics can be improved by dis-intermediating?

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DM Value Chain™ Components

Examples of specific Value Chain Components



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An Integrated Model

PROFESSIONAL TYPE	TYPICAL POPULATION SIZE	SEGMENT	DESCRIPTION	INTERVENTION TYPE
Case Manager (RN)	0.50%	ICM	Intensive Case Mgmt Examples: High dollar cases (>\$50,000 over 3 months excluding those with Chronic Conditions) - Specific diagnoses (Cancers, etc.)	Case Management CMR for specific conditions
Interventionist (RN)	16%	CC	Chronic Conditions Asthma, COPD, CAD, CHF, Diabetes	Condition Management Wellness Coaching
		EC	Elective/Other Manageable Conditions Maternity Depression Hips/Backs etc.	
Health Coach (RN/MSW/RD)	50%	AR	All risk on the basis of HRA - those with no claims other than preventive but with defined risks on basis of HRA	Outbound and inbound coaching for Risk Conditions, Risk Factors, Behavior Change and Maintenance (for Non-targeted conditions)
		NTHC	Non targeted health conditions (lower prevalence, lower cost and less modifiable conditions) - those with claims beyond positive utilization for conditions other than those defined in other segments	
Mail/email	33.50%	AW	Apparently well on basis of HRA with no claims other than preventive	Targeted messaging highlighting resources to stay healthy
		NU	Nonusers: No HRA or claims-based conditions	Targeted messaging for HRA enrollment and healthy lifestyle

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Opportunity Analysis

Opportunity Analysis is a process that identifies the following:

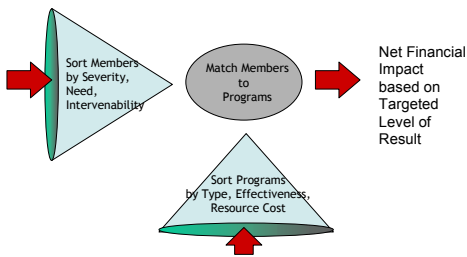
- Prioritization of scarce nurse-resources to those members that represent the best financial savings opportunity.
- Depth of Dive: Identifying the level of overall program penetration that is *financially* justified.

The Opportunity Analysis approach provides a framework for financial, clinical and operational measures/processes, as well as for related guarantees extended to customers.

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Opportunity Analysis

A process for determining which member is assigned to which program



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Segmentation Examples

Acute	Mental Health	Chronic	Emerging Health Conditions
Cancer	Developmental Disability	Coronary Artery Disease	Back Pain/Spinal
Cardiac	Cognitive Disorder	Congestive Heart Failure	Headaches/Migraine
Cerebral Vascular	Psychiatric	COPD	Hypertension
Gastro Intestinal	Substance Abuse	Diabetes	Lower GI
Hematologic	Attention Deficit Disorder	Asthma	Obesity
Infectious			Osteoarthritis
Neonates			Osteoporosis
Nephrology			
Neurologic			
High Risk Pregnancy			
Pulmonary			
Respiratory			
Rheumatologic			
Transplant			
Trauma			

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Operational Challenges

The challenge is finding the members represented by the financial analysis. Potential responses:

- Early identification of admissions (pre-authorizations);
- Potential high-cost ICM admission model (combination ETG/DCG model);
- Future high-utilizers and at-risk Chronic members;
- Elective – very difficult to identify *before* members undergo high-cost procedures.

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Evaluation Methodologies

Method	Issues
1.DMAA	Requires trend estimate.
1.Risk factor reduction	Requires risk factors at different time periods and estimate of value for each risk.
3."Mercer" method	Participant vs. Non-participant method. Normalized for age/sex/risk. "Difference in differences" between par and non-par groups from Baseline.
4. Matched cohorts	Matching on different factors, including propensity and risk factor matching.

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Evaluation Methods - DMAA

The prevalent industry methodology is a trend-adjusted historical control methodology.

Simple example:

Estimated Savings due to reduced pmpry =	
Baseline Cost pmpry * Cost Trend	\$6,000 * 1.12 = \$6,720
Minus: Actual Cost pmpry	\$6,300
Equals: Reduced Cost pmpry	\$420
Multiplied by: Actual member years in	
Measurement Period	20,000
Equals: Estimated Savings	\$8,400,000

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Solucia Developments

Enhanced Trend Projection Method

- Addresses an issue in the DMAA method – absence of credible external trend estimate.
- Estimate utilization and unit cost trends separately.
- Example: Medicare utilization trends.

MEDICARE DISCHARGES PER 1000 BY CONDITION*

Year	Diabetes	Renal Failure	Bronchitis & Asthma	COPD	Heart	Syncope
DRG	294	316	096	088	132-144	141-142
1998	2,214	2,455	1,597	10,254	17,954	3,283
1999	2,187	2,566	1,773	10,617	17,738	3,367
2000	2,280	2,768	1,470	9,925	18,744	3,608
2001	2,458	3,001	1,352	10,047	19,949	3,915
2002	2,516	3,174	1,428	10,275	19,682	4,089
2003	2,450	3,984	1,385	10,335	18,706	4,259
Annualized Trend	2.1%	10.2%	-2.8%	0.2%	0.8%	5.3%

* Actuarial Trend, i.e. per member per month

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Trend Projection methods – example calculation

MDC #	MDC	1999 Discharges Per 1000	2003 Discharges Per 1000	Annual Increase	Admit Weights	Weighted Trends
01	Infectious & Parasitic	9.8	9.9	0.4%	3.0	0.0
02	Neoplasms	20.6	18.6	-2.5%	0.0	0.0
03	Endocrine etc.	15.7	15.9	0.3%	0.0	0.0
04	Blood Forming Organs	3.8	4.4	3.7%	5.0	0.0
05	Mental Disorders	15.2	15.0	-0.4%	9.0	(0.0)
06	Nervous System	5.1	5.4	1.4%	9.0	0.0

	TOTAL	354.2	351.4	-0.2%	27.0	1.0%

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Risk factor values

Savings Estimation Based on Female HRA only model

Attribute	Variable	Cost Coefficient (Table 5)	Mean Variable (Baseline) (Table 5)	Mean Variable (Post-Intervention)	Cost (Baseline)	Cost Improvement
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Weight Management	Body Mass Index	\$118	29.61	28.00	\$349,521	\$18,981
Physical Activity	Moderate-to-intensity physical activity - minutes per day	469	13.49	15.00	61,736	6,905
Stress and Well-being	In the last month, how often have you been a smoker?	632	0.05	0.04	3,700	2,196
Physical Activity	High intensity activities? (hours per week)	206	0.24	0.50	19,450	4,825
Nutrition	Servings of grains per day*	3681	0.99	1.00	85,937	1,220
Tobacco	Rate confidence to avoid smoking when blue	(294)	1.74	1.74	(51,089)	(120)
All other variables (in table 5)					263,812	
TOTAL					\$412,821	\$14,256

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Discussion

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Thank you for your participation

For more information:

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