APPENDIX A

DETAILED CASE STUDIES ON THE FAILURES OF WORKPLACE WELLNESS PROGRAMS

The following are more detailed case studies of the summaries we discussed in Chapter 8 about how workplace wellness programs consistently fail to achieve positive ROI. A special thanks to Al Lewis and Vic Khanna for the case studies.[107]

1. Reducing Cardiac Care Expenses by $100 Per Employee. Not.

The nation's leading workplace wellness program promoter is Watson Health's Ron Goetzel, senior scientist at Johns Hopkins Bloomberg School of Public Health and vice-President, Consulting and Applied Research at Truven Health Analytics. In the February 2017 issue of *Health Affairs,* Goetzel concluded that employers spend an average of $327 per employee per year (PEPY) on spending related to cardiac care.[108] He has said elsewhere that a good program costs a little less than half that, or $150 PEPY.[109] Essentially, he is saying that a program would need to reduce cardiac spending by almost 50 percent just to break even.

Given that most employees don't want to participate in such programs and rarely change behaviors if they do, that's going

to be tough. But tough quickly morphs into impossible when you look deeper. Because Goetzel combined cardiac prevention spending (like tests, doctor visits, statins, etc.) with cardiac care spending on events (like heart attacks) to reach that $327 figure. Yet prevention spending and event spending are opposite types of expenses. Workplace wellness programs push employers to increase prevention spending to avoid event spending. Hence, they should vary inversely.

His asserted savings from a workplace wellness program evaporate if the two types of expenses are, quite appropriately, separated.[110] Peeling out heart attacks—a roughly 1-in-1000 shot in the working-age population, costing maybe $50,000 apiece—shows that most cardiac spending already goes to prevention, since heart attacks and related events cost only $50 PEPY. A perfect wellness program costing $150 would therefore lose around $100 PEPY.

2. Connecticut Wellness Program Increases Health Care Spending

We've all heard the saying "The operation was a success but the patient died." That's pretty much what happened in the state of Connecticut.

Analysts looking at outcomes for the state employee workplace wellness program concluded in a *Health Affairs* article[111] that it actually increased health care spending. But that was "a good thing," according to an interview with Connecticut Comptroller Kevin Lembo.[112]

Lembo also explained that costs increased because people are getting more checkups, which he calls "high-value care." However, checkups are far more likely to find problems that don't exist than to successfully address problems that do, according to *the Journal of the American Medical Association*.[113] The USPSTF and Consumer Reports Choosing Wisely program specifically says annual checkups "usually don't make you healthier."[114]

The same checkups were said to account for a drop of 10 percent in ER visits. Yet, the benefits plan's first-ever copay for ER visits ($35) was put in place during the same period, a far more likely cause for the drop.

Meanwhile, state employees are potentially being harmed. The Connecticut program requires female employees to get mammograms while they are still in their thirties. This is such a bad idea that the USPSTF guidelines don't even bother recommending against it. The rate of false-positives from routine mammography of young women—requiring biopsies and possibly even mastectomies—overwhelms the possibility of saving a life.

Connecticut didn't disclose how much its program costs, but assume the usual $100 to $150 PEPY. Then add on to that an undisclosed increase in health spending, plus the possibility of harming female employees, plus the lost work time for all those extra doctor visits and screens. This program could be costing state taxpayers hundreds of dollars per state employee.

3. The Wellness Trade Association's Official Guidebook Says Wellness Loses Money

Perhaps uniquely in the annals of trade associations in any industry, the Health Enhancement Research Organization (HERO) actually admits their members' product—workplace wellness programs—doesn't work. The tables, charts, and figures in this section are directly drawn from their *Program Measurement and Evaluation Guide: Core Metrics for Employee Health Management*, downloadable from the Population Health Alliance website.[115]

Specifically, the study highlighted by HERO shows that $0.99 per employee per month (PEPM) in savings stemming from "potentially preventable hospitalizations" are not enough to cover workplace wellness program expenses (Employee Health Management, or EHM), which they peg at an unrealistically economical $1.50 PEPM.

From page 15 of the Guidebook.

1,000	Number of members
45	Expected Hospitalizations/K
$25,000	All-in cost of a hospitalization
$1.50	Cost of EHM PMPM, fees

Then, from page 23, the $0.99 savings in "potentially preventable hospitalizations."

Savings estimate	
Trend: PPH	-17%
Trend: All-cause except PPH	-2%
Saved PPH/K	0.53
Saved PPH for population	9.26
Weighted cost/PPH	$22,500
Saved PPH cost	$208,393
Saved PPH cost PMPM	$0.99

One might say: "Yes, maybe avoidance of 'potentially preventable hospitalizations' doesn't cover the costs, but surely workplace wellness programs impact other costs." And they do—but the impacts go in the wrong direction. On page 22, HERO says that:

> *[W]hile we focus on decreased impactible [sic] utilization here, it is important to recognize that EHM [employee health management] should increase the use of certain services, such as preventive and screening services, certain chronic medications, and outpatient visits. It is even possible to see a rise in ER and urgent care visits.*

Critics would argue that even the $0.99 is overstated, by about the same amount, because the hospitalization rates that declined enough to generate that modest savings figure were related to

asthma and heart attacks—and hospitalization rates for asthma and heart attacks were declining at about the same pace everywhere in the country, workplace wellness program or not.

4. The Wellness Industry Trade Publication Admits Multiple Wellness Failures

In its thirty-year history, the *American Journal of Health Promotion* (*AJHP*) has never once published an article showing losses from workplace wellness programs or criticizing them in any meaningful way—at least, not on purpose.

Their first slip-up came in an editorial in the September/October 2013 issue, when they admitted that 90 to 95 percent of programs have no impact.[116]

The second was when they published a meta-analysis showing that ROIs varied inversely with "methodological quality." In other words, badly measured studies showed high ROIs, while well-measured studies showed low ROIs.[117]

Among well-measured studies, the highest-quality studies of all are randomized control trials (RCTs), which are the "gold standard." For example, RCTs are required to get drugs approved. To their credit, the authors admitted that RCTs "exhibited negative ROI." But then, to nobody's credit, they concluded that ROIs were positive by averaging the ROIs from the invalid studies with the valid ones! In the same way that "averaging" Copernicus and Ptolemy leads to the conclusion that the earth revolves halfway around the sun.[118]

This was definitely a slip-up. A subsequent July/August 2014 *AJHP* issue devoted the entire "Editor's Notes" to explaining why they didn't really mean it, and really, "no one knows" what wellness ROI is.[119]

The third example was from that very same editor, Michael O'Donnell, who eventually gave up on finding an ROI in health care spending. "Who cares about an ROI anyway?" were his exact words.[120] Yes, forget about sales incentives, product enhancements, marketing, advertising, or social media. According to

O'Donnell, the surefire way to increase revenues—by 1 percent—is to pay your employees to exercise.

> *To reflect the full value of goods and services produced by each employee, the 1% increase in productivity should reflect revenues earned per employee. For example, if total payroll costs represented 30% of total revenues, a 1% increase in productivity might really represent $1933 [in extra revenues] for an average employee.*[121]

Mr. O'Donnell's cost accounting is as creative as his way of generating revenue. Somehow, in Mr. O'Donnell's calculation, no revenues are lost when employees are off the line, phones, trucks, or sales floor for 90 minutes a week (a 3.75 percent productivity drop in a 40-hour work week). Only the time itself is lost. He calculates this as $2,184. That, of course, exceeds the revenue increase, generating losses of $251 PEPY from lost work time. That is in addition to the usual $100+ PEPY loss from paying vendors.

These examples are hardly cherry-picked. They're legion. But just to be fair, let's look at what the industry itself says are the best programs.

The Industry's Supposed Best

The following vendors and programs were selected by a committee of workplace wellness program executives led by Ron Goetzel as the best of their respective years, each of them winning the industry's top Koop Award (named for former Surgeon General C. Everett Koop).

2011: Eastman Chemical

Between 2004 and 2006, Eastman Chemical apparently generated massive savings from a workplace wellness program before the program had even started, as Figure 12 shows. The upper line shows the cost trend for nonparticipants, the lower line for participants. Note that while both trend lines started out at roughly the same point, by 2006 the nonparticipants' line was

$2,432 while the participants checked in at $2,073, a "savings" of $359. On a side note, the risk factors for participants stayed almost the same between 2004 and 2008, meaning no savings could be attributable to the program even if it had existed the entire time.

Health Fitness Corporation/Eastman Chemical ROI Analysis from Koop Committee Submission

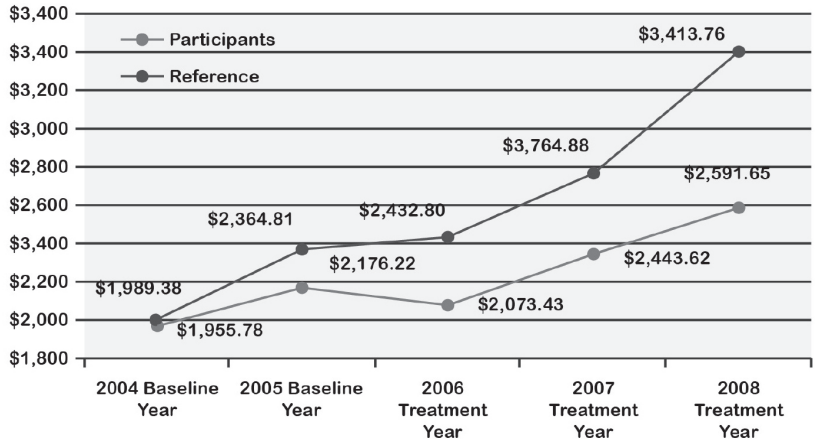

Figure 12. The original and the suppressed X-axes can both be seen together, with a timeline connecting them at the link in the endnote.[118] *Note, the above graphic is a replication of the original chart to improve readability.*

2012: State of Nebraska

The Nebraska program claimed to have saved the lives of 514 state employees with colon cancer. However, Al Lewis has pointed out that this would have been statistically impossible given that only a few thousand state employees (the state would not disclose the exact figure) were screened for colon cancer in the first place and only 5 percent of Americans will get colon cancer, 90 percent of them over age 50.[122] The medical director of the state's workplace wellness program vendor, Health Fitness Corporation, explained to the *Omaha World-Herald*[123] that what he meant when he said that the employees had cancer was that the employees didn't have cancer, but they could get it someday. Indeed, that is true—and not just for those 514 state employees but for everyone else as well.

As you can see, the actual report didn't address the medical director's nuance that the program didn't actually catch any cancer cases.

> *With its targeted messaging strategy, the State of Nebraska has helped catch 514 new cases of early stage cancer before it was too late!*[124]

It failed to even mention the numbers were based on just screening people who might, hypothetically, get cancer someday.

2015: McKesson

McKesson has made a major commitment to workplace wellness programs, likely spending hundreds per employee per year on nine different wellness vendors.

Somehow they won the Koop award—and claimed massive savings due to improved health—despite reporting zero change in employee health risk factors. Note that their total biometric risk factors did not fall. Instead, the "increased to elevated risk" column virtually offsets the entire "decreased to low risk" column.

Risk Factor	Stayed at low risk	Increased to elevated risk	Stayed at elevated risk	Decreased to low risk
BMI	25%	6.5%	64%	5.4%
Cholesterol	51%	13.1%	25%	10.5%
SBP	40%	15.6%	28%	16.7%
DBP	57%	12.6%	14%	17.1%
Glucose	73%	8.8%	11%	6.9%
Cotinine	87%	1.5%	9%	1.6%

Summary Table of 5,923 Improvements and 6,397 Deteriorations in Biometrics for Boise School District, Provided by Wellsteps (without Disclosing Totals)

2016: Boise School District

At least McKesson's employee risk factors didn't deteriorate. The same can't be said of the Boise School District and its work-

place wellness program vendor, Wellsteps. Like McKesson and its vendors, they did not total the increases and decreases in risk factors. Deliberately or not, they also displayed them in a manner that obfuscated the total changes in each direction of risk.

Improvements and Deteriorations in Biometrics

	No.	Mean at Baseline	Mean Change through 1 year	F Test P Value
BMI (Kg/m²)				
Normal (<25)	903	22.4	0.2	< 0.0001
Overweight (25.0-29.9)	738	27.2	0.1	
Obese (≥ 30.0)	683	35.2	-0.3	
Missing	62			
Systolic Blood Pressure (mmHg)				
Normal (<120)	906	110.9	10.9	< 0.0001
Pre-hypertensive (120-139)	1086	128.5	3.9	
High (140-159)	322	146.1	-3.7	
Dangerous (≥160)	38	167.3	-12.6	
Missing	59			
Diastolic Blood Pressure (mmHg)				
Normal (<80)	1330	71.2	1.8	< 0.0001
Pre-hypertensive (80-89)	778	83.8	-4.2	
High (90-99)	209	93.2	-8.7	
Dangerous (≥100)	33	105.6	-15.9	
Missing	61			
Glucose (mg/dL)				
Normal (<110)	2134	92.0	-2.9	< 0.0001
IFG (110-125)	117	115.1	-7.4	
Diabetes (≥126)	72	170.4	-27.1	
Missing	88			

Total CHL (mg/dL)				
Normal (<200)	1434	169.1	10.5	< 0.0001
Borderline (200-239)	691	215.6	-1.7	
High risk (≥240)	216	260.3	-14.6	
Missing	70			

Summary Table of 5,923 Improvements and 6,397 Deteriorations in Biometrics for Boise School District, Provided by Wellsteps (without Disclosing Totals)[125]

Once you parse the data, you see that employee health deteriorated in grand fashion, since 1004 more risk factors deteriorated than improved. This objective deterioration in risk mirrored the subjective deterioration. As the table below shows, employees actually *felt* that their health deteriorated over the period, from 7.96 to 7.92 on a scale of 10. If you're wondering why the awards committee honored Boise, consider the number of applicants in 2016, seven.[126]

Health Behavior and Emotional Health Outcomes over 2 Years (n=1,873)

Health Behaviors	Baseline	Year 1	Year 2	F	P
Exercise (d/wk)	3.34±1.40	3.42±1.35	3.50±1.34	11.20	<0.0001
Exercise (min/wk)	165.4±155.0	177.9±159.2	186.5±174.5	11.39	<0.0001
Fruits (serv/d)	2.38±1.15	2.49±1.18	2.54±1.20	20.09	<0.0001
Vegetables (serv/d)	2.70±1.20	2.81±1.22	2.81±1.19	10.90	<0.0001
Sleep (d/wk)	4.76±1.69	4.71±1.70	4.82±1.64	3.32	0.0361
Smoking (d/wk)	4.35±1.33	5.43±2.71	4.27±3.08	10.53	<0.0001

Alcohol (drinks/d)	1.31±0.72	1.16±0.79	1.10±0.79	30.00	<0.0001
Self-Rated Health	7.96±1.37	7.88±1.34	7.92±1.35	7.31	0.0007

One- and two-year improvements were seen in exercise, fruit and vegetable consumption, days or quality sleep, tobacco and alcohol use, and self-rated health.

Of course, massive savings were claimed. Read Figure 13 below carefully. When read in conjunction with the above deterioration of outcomes, it appears that the more health deteriorated, the greater the savings from wellness…until roughly a third of all health benefits expenses for the Boise School District were apparently wiped out by the program.[127]

Predicted versus Actual Medical Costs for the District

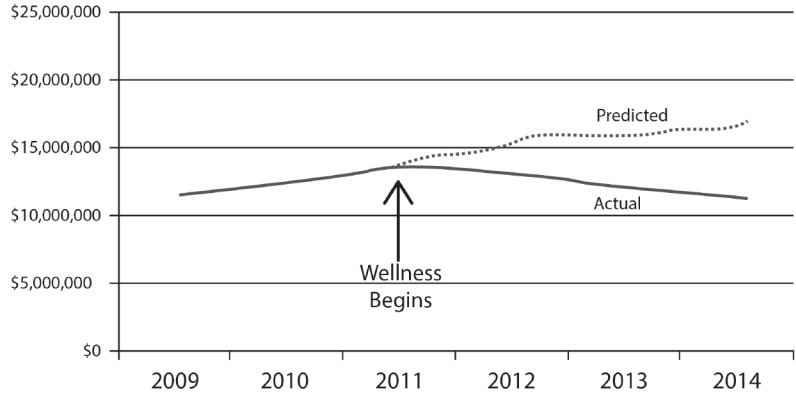

Figure 13. Predicted Versus Actual Medical Costs for the District.

APPENDIX B

CLIENT NOTICE, PLAN SPONSOR BILL OF RIGHTS, AND CODE OF CONDUCT

Sample Health Rosetta Client Notice

Congratulations! We're excited you've decided to work with a Health Rosetta Certified Benefits Professional. The Health Rosetta Institute (HRI) is a 501(c)(3) non-profit organization with a mission to help group benefits purchasers sustainably reduce health benefits costs and provide better care for their employees. We maintain the Health Rosetta, an expert-sourced blueprint for wisely purchasing benefits sourced from the highest-performing benefits purchasers and experts everywhere.

A primary goal of HRI certification programs is to help benefits purchasers reduce your spending *while* improving the quality of care your plan members receive. This notice is to help you understand what to expect working with a HRI Certified Benefits Professional.

What to Expect?

One of our core principles is that higher transparency, trust, and integrity in the purchasing process improves the quality of benefits purchasing decisions. To facilitate this, HRI certified professionals commit in our agreement with them to adhere to certain specific practices.

- Only make changes that have been shown to improve care while improving your costs AND your employees' costs. No more choosing between hurting you or hurting your employees.
- Review this notice with you to set expectations.
- Fully and meaningfully disclosure their compensation in writing.
- Think, plan, and act in your long term interests, including completing 3-5 year strategic plans.
- Adhere to the HRI Code of Conduct you should have received with this notice
- Adhere to the HRI Plan Sponsor Bill of Rights you should have receive with this notice.

These practices significantly differentiate both certified professionals and their design, purchasing, and management process from the highly-conflicted, opaque status quo process. To maintain the quality of HRI certification programs, they'll ask you to sign this notice and a couple other documents throughout the purchasing process.

How the Health Rosetta Ecosystem and Certification Benefit You

You'll likely benefit both directly and indirectly as a result of working with a HRI certified benefits professional. Here are a couple of the main ways.

- **Higher-value benefits** – You should start seeing returns in the form of sustainably lower costs and higher quality care within the next 12 months. While we can't promise specifics as this varies on many factors, Health Rosetta components implemented by other employers have sustainably reduced their spending by 10-40% per year.
- **Access to a deep ecosystem of solutions and best practices** – Our health care system is in the early days of a dramatic transformation, with many new innovative approaches. This makes it difficult for you and most advisors to see through the noise. Certified professionals have access to other certified people, industry leading experts, the Health Rosetta blueprint, and other community resources to sift through this, improving the likelihood that design changes, programs, technologies, and services you implement are appropriate and likely to work.
- **Learning from others** – The education and other resources we make available for certified professionals are based on the real life experience of other purchasers, not theory. We actively cultivate shared learning to keep us abreast. We maintain a network of more than 3,500 experts and high national visibility to create a hivemind for identifying the best approaches. See just a few of our collaborators at healthrosetta.org/who-we-are/.

We have high expectations for certified professionals and work to attract those seeking to go above and beyond them. However, if you feel your certified professional is not meeting your needs, discuss with them or contact us directly at employers@healthrosetta.org. . We're happy to help. You can find more resources, our book *The CEO's Guide to Restoring the American Dream*, and subscribe to updates and education at healthrosetta.org.

From Dave, Sean, and the entire Health Rosetta team, we'd like to thank you for choosing to work with a HRI Certified Professional.

Health Rosetta Plan Sponsor Bill of Rights

1. Service Agreement Fiduciary Duty Protection

You have the right to ensure that your obligations as your plan's sponsor, administrator and fiduciary are protected and enhanced in your service agreement.

2. Transparent Relationships & Conflict Disclosure

You have the right to expect transparency, including disclosure of conflicts, in financial dealings between you and your broker, advisor, or consultant, carriers, and vendors.

3. Independence

You have the right to ensure those financial dealings do not compromise your fiduciary responsibility and the independence of the advice you receive.

4. Access to all options

You have the right to receive information about the full range of options available to you, not just those which preserve or optimize your representative's income or plan administrator's revenue.

5. Independent Review

You have the right to an unbiased, independent review of all pertinent market options in an impartial manner, not just those which preserve or optimize your representative's income or plan administrator's revenue.

6. Comprehensive Reporting

You have the right to receive comprehensive reporting of your costs, and the potential drivers of those costs.

7. Answers to Questions

You have the right to receive answers to your questions, with no cloaking of responses with HIPAA Privacy and other "confidentiality" curtains.

8. Effective Adjudication

You have the right to expect those you hire to adjudicate benefits to give their best effort to identifying inappropriate and grossly inflated charges before they issue payment.

9. Access to data

You have the right to your data and should agree upon this requirement prior to execution of any vendor agreement.

10. Complete reporting

You have the right to receive complete service and outcome reporting from each of your vendors, including all fees associated with services rendered.

Health Rosetta Benefits Advisor Code of Conduct

Good for employees and employers

We resolve to only implement programs and solutions that seek to improve the plan sponsor's bottom line, the plan member's bottom line, and most importantly, the plan member's health.

Programs should do no harm

We resolve that brokers, consultants, and advisors should do no harm to employee health, corporate integrity, or employee/employer finances. Instead we will endeavor to support employee well-being for our customers, their employees and all program

constituents.

Employee Benefits and Harm Avoidance

We will only recommend implementing programs with/for employees rather than to them, and will focus on promoting responsible practices for the health plans we serve.

Our choices of programs and strategies shall always prioritize best outcomes at the lowest cost, in that order, with a strong focus on the responsibility that an employer should provide affordable coverage for their employees while respecting the financial integrity of the business.

Respect for Corporate Integrity and Employee Privacy

We will not share employee-identifiable data with employers and will ensure that all protected health information (PHI) adheres to HIPAA regulations and any other applicable laws.

Commitment to Transparency

Our focus shall be to bring transparency to all levels of health care financing. From how we get paid to how insurance companies and PBMs get paid to how providers get paid.

Commitment to Valid Outcomes Measurement

Our contractual language and outcomes reporting will be transparent and plausible. The end goal is to improve outcomes and quality of care while lowering costs and the ability to do this shall be measured and reported on in a valid, consistent and accountable format.

APPENDIX C

SAMPLE COMPENSATION DISCLOSURE FORM

The following is a sample broker compensation disclosure form to help you improve your benefits purchasing process. The status quo is rife with conflicts of interest stemming from undisclosed compensation arrangements. This prevents benefits purchasers from making the most informed and intelligent purchasing decisions. We've found that the first step towards high-performance benefits is disclosure of incentives to minimize conflicts, create transparency, and increase trust in your advisors and process.

Calculation of Fees

In general, each fee should be calculated in one of five ways.

1. **Premium based.** Fees are based on the amount of premium for each line of coverage. This normally expressed as a predetermined percentage.
2. **Claims-based.** Fees are based on the $ amount or number of claims in the plan and generally are expressed as percentages or aggregate per claim fees for the period.

3. **Per member, eligible, or employee (e.g. PEPM/PMPM).** Fees are based upon the number of eligible employees or actual members in the plan.
4. **Transaction-based**. Fees are based on the execution of a particular plan service or transaction.
5. **Flat rate**. Fees are a fixed charge that does not vary, regardless of plan size

You can also access a regularly updated digital version on the Health Rosetta Institute's website (healthrosetta.org).

HEALTH ROSETTA INSTITUTE
BENEFITS REPRESENTATIVE COMPENSATION DISCLOSURE FORM

Advisor: _____ Client: _____ Period: _____

Overview

A key element of the Health Rosetta Institute's mission is to help benefits purchasers build transparent, trusted relationships with benefits advisors that are critical to an effective benefits-purchasing process, particularly in today's world of skyrocketing health care costs and limited ability to push those costs on employees. This form is one resource to help you.

Their compensation is a small portion of total spend, but the right one can guide the way to dramatically improving your plan costs and quality. The total amount shouldn't be the primary focus. Instead, it should help build trust and identify potential conflicts.

High-value, forward-leaning advisors are worth their weight in gold. Plus, the strategies they use typically improve your bottom line, reduce your employees' out-of-pocket spending, and improve the quality of care they receive. Think of it this way.

Would you rather pay 4 percent to an advisor who reduces total spending by 15 percent or 2 percent to one who "negotiates" a 15 percent increase down to a 7 percent increase? For every 100 employees on an average plan, you'd save $247,220 in year 1 and $1.2 million in 5 years (net of the higher compensation).

Unwillingness to disclose compensation is typically a red flag that recommendations may not align with your interests. The benefits world often has undisclosed conflicts and incentives that make intelligent purchasing decisions difficult. To help you get around this, we've created a free guide for selecting high-value advisors.

You can find more resources or contact us at healthrosetta.org to learn more about improving the cost and quality of your health plan, Certified Professionals, or how we help benefits purchasers. A special thanks to Eric Krieg at Risk International Benefits Advisory, David Contorno at Lake Norman Benefits, Josh Jeffries at Arkin Youngentob Associates, and Tom Emerick at Edison Health for helping create this form. Each is a worth their weight in gold type.

About Us: The Health Rosetta Institute is a 501(c)(3) nonprofit organization with a mission to help public and private employers and unions sustainably reduce health benefits costs and provide better care for the 150 million Americans who access care through their work. We accelerate adoption of practical, nonpartisan fixes to health care's root causes of dysfunction—how we pay for care. We maintain the Health Rosetta, a blueprint for wisely purchasing benefits sourced from the highest-performing benefits purchasers and experts everywhere.

Overview of Services Provided

Some fees may be estimates and will vary throughout the course of the year. However, this shouldn't vary significantly from estimates unless something significant and unplanned happens.

Service Provided	External Vendor	Cost/ Fee for Service	Compensation Type	Total Compensation
Core Consulting Services				
Pharmacy Consulting Services				
Actuarial Services				
Compliance Services				
Wellness Consulting				
Claims Audit				
Data Analytics and Clinical Services				
Communications				
Decision Support Services & Transparency Resources				
Benefits Administration				
Total Projected Annual Costs				

Expected Financial Compensation from External Vendors

Category	Vendor	Effective Date	Compensation Type	Total Compensation
Medical				
Rx				
Dental				
Vision				

Stop loss				
EAP				
FSA				
Group Life				
AD&D				
LT Disability				
ST Disability				
Cancer				
Critical Illness				
Wellness				
Disease Mgmt.				
Broker Fee				
Other				
Total				

Are any compensation multipliers or other bonuses applicable to the above categories of compensation?
☐ Yes (please describe below) ☐ No

If yes, are they included in the above dollar amounts?
☐ Yes ☐ No

Do you or your firm accept any nonaccount specific financial compensation from any products, services, or vendors you're recommending, including, but not limited to, contingent or bonus commissions, override or retention bonuses, and back-end commissions.
☐ Yes (please describe below) ☐ No

Do you or your firm have any other financial or nonfinancial compensation, potential conflicts of interest, or incentives related to products, services, or vendors you're recommending, including, but not limited to, ownership, equity stakes, revenue/profit

sharing, GPO/coalition participation, preferred vendor panels, conferences or trips, or personal relationships.
☐ Yes (please describe below) ☐ No

Are there any potential reasons that could result in the above costs of services or compensation to vary more than 10 percent from the above projections?
☐ Yes (please describe below) ☐ No

Please describe details related to any questions to which you answered yes above, including the specific, expected, or estimated dollar value. Attach additional pages if necessary.

Total Expected Compensation

Consulting Services	
Compensation from External Vendors	
Cost of Services from External Vendors	

Advisor
I certify that to the best of my knowledge the above is a complete and meaningful disclosure of my firm's entire compensation.

Name: _____
Entity: _____
Title: _____
Signed:_____
Date _____

Client
I acknowledge that the signed Certified Advisor has presented and adequately reviewed the above disclosures.

Name: _____
Entity: _____
Title: _____
Signed: _____
Date _____

APPENDIX D

HEALTH ROSETTA PRINCIPLES

The Health Rosetta Principles were created and curated with Leonard Kish. We drew these insights from dozens of the most forward-looking individuals in the health care industry. The Health Rosetta components in part IV of the book speak to how health care purchasers can be wise about their health care purchasing. The Health Rosetta Principles speak to how the health care industry should respond to changing purchasing and patient behavior to navigate uncharted terrain. They are the guide for how the industry can succeed in the future health ecosystem. Leading experts have written essays on specific principles that we invite you to read at healthrosetta.org/health-rosetta-principles. The essays expand on each principle to make them more actionable. In the open source spirit of the Health Rosetta, we invite other leading thinkers to contribute their essays to advance the cause.

A New Medical Science

1. *A New Paradigm* – A new social, psychological, biological, and information-driven medical science is emerging that will better understand a person's environmental context and its rela-

tionship with disease. It's precision medicine, but more, using sensors and networks to better predict and prevent as well as treat the root causes of disease. No vision of the future of medicine can be complete or even competent if it doesn't recognize these new sources of information and the power of patient engagement.

2. *Open source and open knowledge* – Open source, open APIs, open data, and open knowledge (such as wikis) will become central to defining a common architecture to support this new science. These are modern versions of peer review.
3. *Nonclinical determinants of outcomes* – To improve care and reduce costs with this new science, we must focus on what drives 80 percent of outcomes, the nonclinical factors, which include social, economic, and psychological determinants of health.
4. *Cross-disciplinary collaboration* – Cross-disciplinary collaboration and sharing of research data will be a requirement to accelerate new discoveries.
5. *Evidence-Based understanding of what works* – This new science will arrive at an evidence-based understanding of what works through a great wealth of shared longitudinal health data captured through mobile devices, sensors, and health records. It must be mindful of the concept of transforming data to information, knowledge, and wisdom.
6. *Understanding the personome* – The new medical science will focus on understanding the personome. "The influence of the unique circumstances of the person—the personome—is just as powerful as the impact of that individual's genome, proteome, pharmacogenome, metabolome, and epigenome."[128]

Openness Drives Effective Action

7. *Individual choice* – Individuals have the right to make choices and control their health destiny with the best information available.

8. *Open access to information* – Open access to information that will enable individuals to make the best decisions and become well-informed individuals, particularly when curated and contextualized by clinicians.
9. *Openness and privacy are not in conflict* – Openness and privacy are not in conflict with the right kinds of identity, consent, and data control mechanisms in place.
10. *A required culture change* – This openness will come with a required culture change. We must release information in order to ensure high-quality information and code. In software, Linus' Law states, "Given enough eyeballs, all bugs are shallow." Keeping information sealed until it is perfect will mean we miss opportunities to improve the data and fix the system.

Economics and Transparency

11. *Information asymmetries* – Information asymmetries lead to inefficient systems and suboptimal outcomes. Access to life-saving, taxpayer-supported research must be open.
12. *Social determinants of health* – Health and wealth are tightly linked. Eventually, poor financial health will negatively impact overall health.
13. *Cost as comorbidity* – The cost of care can be a comorbidity. By ignoring costs in clinical decisions, conditions can worsen as financial stress may drive individuals to choose not to follow a plan of care because it is too expensive.
14. *Individual's right to know the cost of care* – Individuals have the right to know how much care will cost before receiving care, both out of pocket and covered. When there is unpredictable complexity (not caused by medical error, which shouldn't be charged for at all), individuals should be informed of the most likely ranges.
15. *Personal responsibility* – Individuals have personal responsibility to manage their lives along with their care.

Relationships and Peer to Peer Networks Will Become Central

16. *Communication as medical instrument* – The most important "medical instrument" is communication. Communications drive actions, build relationships, and create trust.
17. *Data liquidity for improving health* – Exchange of personal health data will become enabled via decentralized Peer to Peer (P2P) networks and "HIEs of 1." These P2P exchanges will improve health literacy, healthy action, and a functioning health economy.
18. *P2P networked conversations* – P2P networked conversations will empower new ways of organizing better health, allowing individuals to "organize without organizations" (h/t Clay Shirky) for better care.
19. *Individuals and health research* – Verifiable, but deidentified, opt-in health data will become part of a unified view of health care for research and risk assessment. Individuals will have the choice to contribute.

New Intelligence

20. *Cognification* – To "Cognify" (h/t Kevin Kelly) is to instill intelligence into something. Medical knowledge will increasingly be "cognified" into the IoT and much of the world around us is made "smart" and data-aware. This is good, and will free people to care for themselves where they want to receive care.
21. *Feedback* – All feedback has utility. Whether the news is good or bad, opinions become known and become a source for improvement and competitiveness.

Community-driven Health

22. *Stewarding social and economic factors* – True health system leadership comes from not just being stewards of hospitals

and clinics but stewarding social and economic factors and the physical environment of a community, which account for half of outcomes.

23. *Partnering for community health* – Assessing community health needs and adopting strategies to address those needs will provide hospitals with a valuable opportunity to partner with community partners to identify strategies for improving health, quality of life, and the community's vitality.
24. *Building health literacy and community* – Health care organizations that aggressively promote health literacy will build community capacity in addressing health issues. This may mean enabling and curating others in the community to reach all facets of the community.
25. *Health and financial literacy* – Start by teaching medicine and psychological self-awareness and resilience to kids. Starting in schools, health education needs to include the "medicine" we consume every day. Insurance/benefits literacy should be included in schools' financial literacy courses.
26. *School lunches* – School lunches are an access point of great power: they reinforce or remove the unhealthy products we consume.
27. *"Let food be thy medicine"* – Hippocrates said, "Let food be thy medicine and medicine be thy food." Individuals are "poisoning" themselves by the food they eat, largely without knowing it.
28. *"Walking is man's best medicine."* – Hippocrates also said, "Walking is man's best medicine." Communities and workplaces that make it easy to walk and be active can gain an advantage over the status quo.
29. *Health care waste: A bandit stealing from our future* – Health care waste is like a bandit stealing from our future. Health care is breaking U.S. schools. Money once directed to education is getting gobbled up by health care's hyperinflation. This piles onto the problem that kids don't learn enough about health, nutrition, finance, or any of the things that lead to healthy, long lives.

New Choices for Individuals and Care Teams

30. *Health isn't limited to the clinic* – Health is not the limited time individuals spend in clinics. What happens in the other 99+ percent of their life has the greater impact on an individual's overall well-being.
31. *Better choices through motivation* – We will learn how to rapidly enable better choices through motivation, tools, and access to better choices and lifestyles. Each individual will respond differently, requiring a whole new level of personalization.
32. *Understanding motivations and habit change* – People are complicated with both innate drives and ingrained habits that work against long-term health. The psychology of understanding these motivations and habit change is critical to success in achieving better health.
33. *Wisdom of the individual* – Still, people will make incredibly smart decisions when they understand the true risks and choices.
34. *Mental health* – Mental health is an equal component of a person's overall health. Mental health directly impacts our physical health and our ability to recover from disease or medical interventions. Therefore, mental health needs to be deliberately and systematically integrated into the general health care system.
35. *Nutritional and environmental causes of disease* – Open information and research are needed to understand the nutritional and environmental causes of disease.
36. *Unhealthy food* – Foods that are void of nutrition are the tobacco of this generation.
37. *Optimizing health* – We have defined sick care very well: what happens when things go wrong and how to correct them. We have very little understanding of how to keep things going right, how to get people back on track when they go off the rails, nor how to continually optimize health. Innovations in research are changing this; new entrants will figure out how to enable it.

38. *Preventing the need for care* – Systems will be designed so individuals can stay healthy and take as few drugs, have as few procedures, and avoid the system as much as possible by engaging in self-care.
39. *Embracing the "flat world" of care* – The emergence of a flat world opens up new avenues to innovation about what has worked in other cultures. The US has the opportunity to learn to be open to ways of health care that originate outside our borders, particularly those that are more appropriate to the underserved.

Individuals and Engagement

40. *Inclusivity with individuals and caregivers* – Individuals and their caregivers are the greatest untapped sources of information, knowledge, and motivation. Optimizing care means partnering with individuals and caregivers to empower them.
41. *Experience had a "Triple Aim" too* – The effectiveness of engagement is tightly aligned with how convenient it is; how easily it integrates with where we live, work and play; how culturally relevant it is; and cost-effectiveness it is.
42. *Leveling the empowerment playing field* – Engagement and empowerment are different. Individuals are often most engaged, but least empowered. A partnership between individuals and clinicians is when health is optimized.
43. *"Patient engagement" is backwards* – "Patient engagement" is valuable, but backwards. Individuals need the health system to be engaged with them regularly, and not just during visits.
44. *"Individual centered" engagement* – An engaged individual is very different from "patient engagement" (h/t Gilles Frydman). One is individual centered, one is health system-centered. Achieving full health is the goal, not engaging with the health system.
45. *Engagement for avoiding the health system* – An individual can be engaged with their own health without entering the health system at all (h/t Hugo Campos). The goal of an individual is

often to become/stay free of the health care system. Engaging means empowering them to do so.

New Economics

46. *Choose wisely* – Choose wisely. Oftentimes, less is more.
47. *Prevention* – Oftentimes, early is better than late.
48. *Overtreatment* – Overtreatment is one of health care's greatest challenges. In many cases no treatment is much better than treatment.
49. *Sustainability* – A system that profits more from people with "problems" than those without and has a default set at "treat more" is destined to collapse due to its inherent unsustainability.
50. *Evidence-based care delivery* – Systems will become better aligned to better prevent overtreatment and undertreatment, driven by individual's access to information, informed by statistics.
51. *Empowering a patient to make rational economic choices* – Individuals enter the health care system to get measurements; to be diagnosed; and to seek answers, treatment and learn. Individuals will seek alternatives outside of expensive, inconvenient care centers. This will drive positive overall change in the health system.

New Education

52. *Scaling medical education for the future* – Medical education will be made continuous, engaging, and scalable in the age of increasing clinical demands and limited work hours.
53. *New approaches to learning* – Medical educators will make thoughtful use of technology and learning design. Those that excel will learn how MOOCs, community engagement, social media, simulation, and virtual reality might change the face of medical education.

54. *Harnessing the data deluge* – The flood of new medical information is impossible to keep up on for any one person. Physicians and other care providers will be enabled by better systems for filtering what's valuable for an individual's care.
55. *Rapid evolution* – Effective medical education must and will evolve rapidly to focus on care delivery and the use of digital tools in care delivery.
56. *Physician as community manager* – Medical education will recognize that because only 10–20 percent of health outcomes are driven by clinical care, physicians must also be stewards of community transformation. Physicians are in the best position to be good partners within a multidisciplinary alliance enabling community transformation.

New Data Ownership Rights

57. *Individual Rights* – An individual's access to and management of data about him/herself is a fundamental human and property right. Why is it easier to have your medical data hacked than for you to get access to it? (h/t Eric Topol)
58. *Monopolies* – Monopolies on medical knowledge and information are unethical.
59. *Single Patient Record* – Now that all information can be connected all the time, there should be only one record of health data that comes from an individual, controlled by the individual. Problems with HIPAA and "information blocking" are symptoms of a broken, pre-Internet, paper-driven era.
60. *Property Rights in a Distributed System* – Platforms will be developed to enable the rights and transactions around health data property. These platforms will be decentralized, yet enabled to focus on the individual in an instant. Be prepared.
61. *Patients Right to Data About Them* – Individuals have a right to any data that comes from a measurement of an internal state of their body, including medical devices.
62. *Immediacy of Access to Health Data* – Individuals have literally died, waiting for their lab data. An individual's lab and other

data should be made accessible to individuals as soon as it is available.

63. *Data Doesn't Cause Medical Harm* – Medical regulations exist to protect individuals from medical harm. Data, ideas, and information in the hands of individuals causes no medical harm.
64. *Safe Access to Data Without a Doctor's Permission* – Individual may have access to metrics and analysis about their own body without a doctor's permission as long as accessing that data poses no significant medical risk.
65. *Right to Privacy* – Individuals have a right to health data privacy. Rights to sharing must be established with the individual it originates from, or their legal agent, in advance of sharing.
66. *Health Information Anti-Discrimination* – Health data collected about an individual cannot be used to determine a person's access to capital (credit ratings), employment, education, housing, or health care services. This will be legislated and empowered by new technologies.

New Roles and Relationships for Providers

67. *Misaligned Incentives Impair Providers* – Misaligned reimbursement schemes have impaired providers from doing the primary job of healing and have often robbed them of their humanity. Paying for value will help them get the job of healing back.
68. *Enlightened Providers Partner with Patients Who Guide Their Care* – The enlightened clinicians who embrace these guiding principles, combined with empowered individuals guiding their own care will become a powerful competitive advantage.
69. *Maintain Trust in Health Professionals* – Some of the most trusted professions are nurses, doctors, and pharmacists. With the trust individuals have in these professions, they activate us to do things we wouldn't normally do. Respect this trust.

70. *Whole-Person View of Health* – World class teams require a holistic view of a person's complete health, which includes not just their physical health but also their mental health.
71. *Embracing the Science of Behavior Change* – Relationships are fuel for motivation and behavior change (both positive and negative). Motivations, triggers, and ease of action are keys to enabling behavior change.
72. *The Importance of Relationships* – Aim to motivate, teach, consult, and enable. Clinicians cannot expect participation in a care plan (e.g., "compliance" or "adherence") without mutual understanding. Recognize that when an individual is not incapacitated, they are in control of whether they fill prescriptions, follow a care plan, etc.
73. *Health care Extends Beyond the Walls of the Clinic* – The best care is and will be collaborative beyond the walls of any one institution. Just as "the smartest people work for someone else," the smartest providers practice outside of this clinic and this hospital. The smartest provider may, in fact, be a collective, or the crowd. New ways to open communications will drive better care.
74. *Flipping the Clinic* – Many times, the best place for interaction between the clinician and an individual isn't at the clinic. We can flip the clinic. Much of what has been done at a clinic visit can be done more effectively in the comfort of an individual's home via email and other digital tools or in social settings like churches or community organizations.
75. *Embracing Data to Deliver Better Care* – The most relevant providers will learn and will be conversant in data analytics and tools. They will be experts in care delivery, not just diagnostics and traditional medical science.

A New Competition in Life Science & MedTech

76. *Embracing the New Science Within the Leadership* – Tomorrow's leaders will redesign development and trials to capitalize on

the aforementioned new science dynamics and mobile technologies.

77. *Embracing Partnerships Beyond the Traditional Ones* – New and nonobvious partnerships will need to be forged to ensure leadership in the future. Alliances with health tech and consumer health/Internet companies will be as important as alliances with academic medical centers have been in the past.
78. *Broadening the Value of PostTrial Relationships* – Posttrial relationships with individuals will allow cocreation and insights not possible before. That is a largely untapped opportunity. ResearchKit is just the beginning.
79. *Openness to Engagement* – The individual's relationship to a device or therapeutic may be as profound as their relationship to their doctor, or more so. Be available and open to engagement to make improvements.

New Health Plans, New Health Benefits

80. *Fee for Service Is Dying* – Fee for service is dying. Transition now in every way you can.
81. *The Dirty Secret of Health Plans* – The dirty secret of health plans is that higher care costs have, counterintuitively, led to greater profits for the plans. This is changing. Winning health plans will capitalize on the opportunity to fundamentally rethink plan design to be optimized for the fee-for-value era.
82. *Catalyzing Patient Engagement* – Catalyzing patient engagement will lead to better care and a more competitive offering.
83. *The Next Dirty Secret* – The next dirty secret of health plans is that they are money managers. The longer they hold onto money, the more they make. Employers and unions are driving the next wave of health care innovation, protecting their employees and members.
84. *Investing in Members' Financial Security* – Rather than reflexively denying claims and building up a mountain of ill will, insurance companies should invest resources in protecting their member's financial security.

85. *The "Negaclaim"* – Customers will, in effect, "self-deny" their own claims. A new metric for success is the "Negaclaim"—an unnecessary claim avoided. This isn't about denying care. Just as energy consumers aren't interested in kilowatt hours, individuals aren't interested in health claims—they want health restored and diseases prevented.
86. *True Informed Consent* – When individuals are fully educated on the trade-offs associated with interventions, they generally choose the less invasive approach.
87. *"Essential Access," the Corollary to "Essential Benefits"*—The ACA defined "essential benefits" but there will be a corollary about rights to "essential access" as part of coverage. Any modern health plan offering will include virtual visits, transparent price info, updated provider directory, same day e-mail response, next day test results, etc.—all eminently doable with today's modern technology.
88. *Rethinking Benefits Design and Procurement* – As the second or third biggest expense after payroll, CFOs & CEOs are failing in their fiduciary responsibility by being overly passive in how they procure health benefits. A rethought health care purchasing plan drives direct, financial returns, but most importantly, enables your valued employees to do what they desire—realize their full potential. Elements are defined at healthrosetta.org.
89. *Aligning Laboratory Testing and Genomics* – Genomics and proteomics information and testing will be key components of personalized medications, tailored to provide the best dose/response relationship in each patient. Because of their importance, these tests and genomic information must be covered by health plans and insurance.

New Health System

90. *Transitioning Care Beyond the Walls of the Clinic* – Hospitals have provided amazing service for the last 100 years, but location is becoming less important for health care. Care can

happen almost anywhere at lower cost. What conditions hospitals treat, and how hospitals serve their communities will dramatically change over the coming decades.

91. *Reimagining Technology in the Fee-for-Value Era* – Health systems, your technology procurement process must be up to the task. Systems grown and optimized for the waning fee-for-service often have the polar opposite design to what will optimize the fee-for-value era. Virtually every new health care delivery organization that is outperforming on Triple Aim objectives, has deployed new technology reimagined for the fee-for-value era.
92. *Focusing on Communication Over Billing* – Outside of health care, millions of organizations have reformulated how they interact with their ultimate customers with better communications tools. Next generation health care leaders understand that tools will focus on communication over billing.
93. *Borrowing a Page from the Newspaper Industry* – Health system leaders, learn from the another local oligopoly in your community, the venerable daily newspaper. While they spent the last couple of decades worrying about cross-town and traditional media company competition, it was death-by-a-thousand-papercuts that has been their undoing. Newspaper executives dismissed an array of new asymmetric competitors including eBay, Craigslist, Monster.com, Cars.com, Facebook, Groupon, ESPN, CBS Marketwatch and more who stole advertising, media consumption or both. Health system executives are doing the same thing today, and the issue is the same: how valuable content will be delivered in the future. The content is different, but the issue of distribution is the same.
94. *The "Forgotten" Fourth Aim* – Winning health care delivery organizations recognize that the Quadruple Aim will deliver sustainable success. The "forgotten aim" is a better experience for the health professional. Layering more bureaucracy on top of an already-overburdened clinical team ignores that the underlying processes are frequently underperforming and that a bad professional experience negatively impacts patient outcomes.

95. *Unshackling Innovation* – Health care organizations wanting to reinvent can harness the new opportunities by unshackling their smart, innovative team members and outside thinkers to reinvent their organizations for the next 100 years. Those that enable their customers will emerge as the leaders for the next 100 years.

APPENDIX E

HEALTH 3.0 VISION

"Healthy citizens are the greatest asset any country can have."
— Winston S. Churchill

As health benefits get a major overhaul in the employer arena and policymakers determine where publicly paid health care programs will go, we believe it's imperative to take a fresh look at how we've organized our health care "system." One area of near-universal agreement is that we should expect far more from our health care system, given the smarts, money, and passion poured into health care. Simply shifting who pays for care does little to address the underlying dysfunction of what we pay for and how we pay.

A group of forward-looking individuals have developed a vision for Health 3.0 to address the future of care. It is a common framework to guide the work of everyone from clinical leaders to benefits professionals to technologists to policymakers. Each should ask whether their strategies, technologies, and policies accelerate or hinder the journey to Health 3.0. If Health 3.0 is the North Star, the Health Rosetta is the roadmap and travel tips on how to get there.

To fix health care, we need a common vision for the future—Health 3.0 We believe this vision encompasses four key dimensions.

1. Health services (e.g. care delivery and self-care)

What is the optimal way to organize health services so they build on the strengths of each piece of the health puzzle, rather than operating as an unmatched set of pieces (today's world)? Innovative new care delivery models create a bright future (that some are already experiencing) where every member of the care team is operating at the top of his or her license and is highly satisfied with his or her role—a stark contrast to Health 2.0, where only 27 percent of a doctor's day is spent on clinical facetime with patients.[129] Put simply, they didn't go to med school to become glorified billing clerks.

2. Health care purchasing

Underlying virtually every dysfunction in health care is perverse economic incentives. Various industry players are acting perfectly rationally when they do things that are counterproductive to achieving Health 3.0. The Health Rosetta and Health 3.0 outline the high-level blueprint for how to purchase health and wellness services wisely. We've seen how a workforce can achieve what one health care innovator has described as "Twice the health care at half the cost and ten times the delight."

3. Enabling technology

Technology only turbocharges a highly functional organizational process when the proper organization structure, economic incentives, and processes are in place. Unfortunately, health care breaks the first rules I learned as a new consultant fresh out of school—don't automate a broken process and don't throw technology on top of a broken process. Sadly, health care is riddled with these two common mistakes, stemming from the flawed assumption that technology alone can be a positive force for change.

4. Enabling government

At the local, state, and federal level, government can play a tremendously beneficial (or detrimental) role in ensuring health

care reaches its full potential. There are four main ways that government entities contribute.

1. As an enabler of health (e.g., public health and social determinants of health)
2. As a benefits purchaser, since government entities are large employers who can accelerate acceptance of new, higher-performing Health 3.0 care models
3. As a payer of taxpayer-funded health plans
4. As a lawmaking or regulating entity

The first item, in particular, is frequently overlooked as a powerful tool for testing and refinement of new models of care payment and delivery.

Failings of Health Care 1.0 and 2.0

Before defining Health 3.0 further, it's important to outline the failings of Health care 1.0 and 2.0. Dr. Zubin Damania (aka ZDoggMD) describes the positive facets of Health care 1.0 and Health care 2.0 but also gives the two earlier eras of health care a stinging rebuke.

> Behind us lies a long-lost, nostalgia-tinged world of unfettered physician autonomy, sacred doctor-patient relationships, and a laser-like focus on the art and humanity of medicine. This was the world of my father, an immigrant and primary care physician in rural California. The world of Health care 1.0. While many still pine for these "good old days" of medicine, we shouldn't forget that those days weren't really all that good. With unfettered autonomy came high costs and spotty quality. Evidence-based medicine didn't exist; it was consensus and intuition. Volume-based fee-for-service payments incentivized doing things to people, instead of for people. And although the relationship was sacred, the doctor often played the role of captain of the ship, with the rest of the health care team and the patients subordinate.

So, in response to these shortcomings we now have Health care 2.0. The era of Big Medicine. Large corporate groups buying practices and hospitals, managed care and Obamacare, randomized controlled trials and evidence-based guidelines, EMRs, PQRS, HCAHPS, MACRA, Press Ganey, Lean, Six-Sigma. It is the era of Medicine As Machine…of Medicine As Assembly Line. And we—clinicians and patients—are the cogs in the machinery. Instead of ceding authority to physicians, we cede authority to government, administrators, and faceless algorithms. We more often treat a computer screen than a patient. And the doc isn't the boss, but neither is the rest of the health care team—nor the patient. We are ALL treated as commodities…raw materials in the factory.

Health 3.0 Vision

Dr. Damania goes on to describe Health 3.0 as follows:

Taking the best aspects of 1.0 (deep sacred relationships, physician autonomy) and the key pieces of 2.0 (technology, evidence, teams, systems thinking), Health 3.0 restores the human relationship at the heart of healing while bolstering it with a team that revolves around the patient while supporting each other as fellow caregivers. What emerges is vastly greater than the sum of the parts.

Caregivers and patients have the time and space and support to develop deep relationships. Providers hold patients accountable for their health, while empowered patients hold us accountable to be their guides and to know them—and treat them—as unique human beings. Our EHRs bind us and support us, rather than obstruct us. The promise of Big Data is translated to the unique patient in front of us. Our team provides the lift so everything doesn't fall on one set of shoulders anymore (health coaches, nurses, social workers, lab techs, EVERYONE together). We are evidence-em-

powered but not evidence-enslaved. We are paid to keep people healthy, not to click boxes while trying to chase an ever-shrinking piece of the health care pie. Our administrators seek to grow the entire pie instead, for the benefit of ALL stakeholders.

As I've shared this framework, I've received a couple of questions/comments to the effect of "where's insurance?" It's not here as it's not about who is assuming the financial risk. That varies by country and, even in the U.S., most risk is assumed by employers or various government entities at the state and federal level. The "insurance" companies are largely claims processors (typically only about one-third of the claims insurance companies process are their funds at risk). No matter who carries the risk, we're bad at purchasing health care and health & wellness services in the U.S. This framework suggests we need to take a fresh look, rather than buying what has been radically underperforming.

The pyramid graphic below is the start of developing a North Star for how various elements of health and health care interrelate with each other. It's going to require some verbal explanation of where we're going with this. The "we" is Dr. Venu Julapalli, Dr. Zubin Damania (aka ZDoggMD), Jonathan Bush, and Dr. Vinay Julapalli. The problem we're trying to address is how health care is "organized" in a tangled jumble of silos largely organized around medical technologies, not individuals (patients). It's exacerbated by economic models and information technology that further impair healing. We believe that fostering an ecosystem that is antifragile should be one of the key design points.[130] Flawed thinking looks at health care simply as an expense (or, from the perspective of the health care industry, revenue to be maximized). As Churchill states, when health is looked at as an asset, it causes one to optimize for something completely different.

For those unfamiliar with Nassim Taleb's book, *Antifragile*, he introduces the book as follows:

> Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty. Yet, in spite of the ubiquity of the phenomenon, there is no word for the exact opposite of fragile. Let us call it antifragile. Antifragility is beyond resilience or robustness. The resilient resists shocks and stays the same; the antifragile gets better.

Health care has been unique in that it uses technology as an excuse for costs to go up and productivity to go down. In Health 3.0, a properly organized health ecosystem can benefit from technology rather than helping fuel hyperinflation for all of us, while decreasing productivity and job satisfaction for clinicians.

Figure 14 is a thumbnail sketch for how the pyramid works. You can also explore an interactive graphic at healthrosetta.org/health30. Each layer represents a level of care or self-care. You want to spend as much of your life as possible in self-care at the bottom of the pyramid.* When you have to move to higher layers, you want to move back down asap.

Each pyramid layer has four facets, one for each side of the pyramid.

1. Optimal way to deliver health services
2. Optimal way to pay for care
3. Enabling technology for #1 & #2
4. Enabling government role for #1 & #2

Following a given layer (e.g., value-based primary care 3.0) shows how the four facets apply to that layer.

* *Note that self-care is necessary at all levels. However, it starts at the foundation. The pyramid is a holarchy. This just means it incorporates hierarchies that both transcend and include levels. They work like 3D concentric circles, rather than rungs on a ladder. Imagine looking at the pyramid from the top. You will have concentric boxes, with self-care transcending and including them all.*

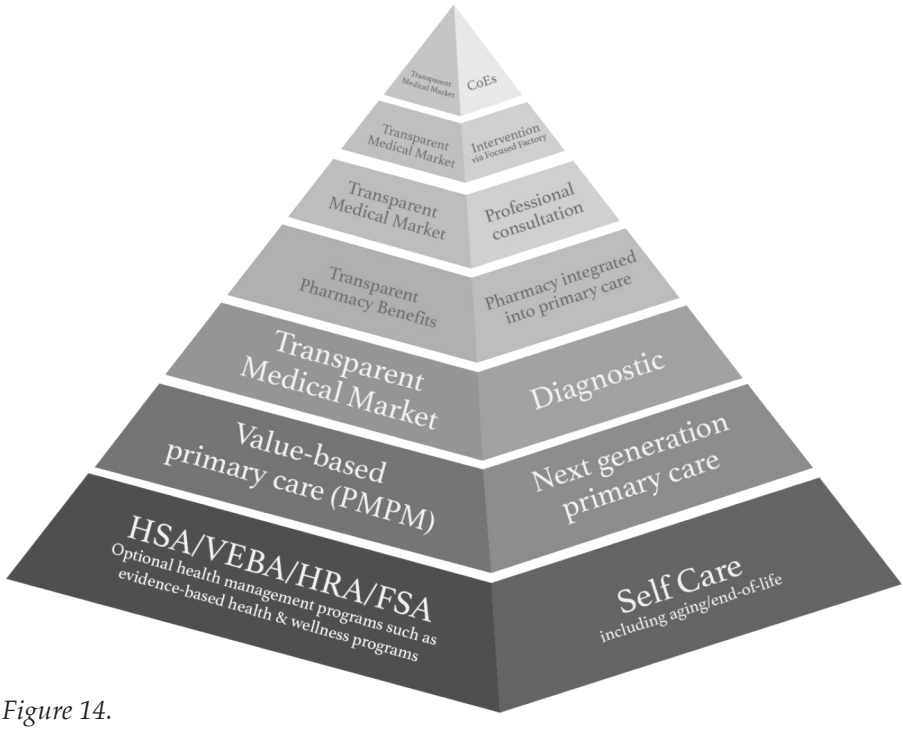

Figure 14.

You read the pyramid from the bottom and at each layer look at the four facets to ensure they are meeting your goals. Thus, you would see that the self-care layer is at the bottom. When you access the health care system next generation primary care is where you should start. In places like Denmark and the best value-based primary care organizations in the U.S., over 90 percent of care can be addressed in a proper primary care setting. Full valued-based primary care includes things like behavioral health, interior work, health coaches, and physical therapy, all enabled by technology like secure messaging, remote monitoring, and other future advances.

Chapter 14 covers value-based primary care and focuses on high-cost individuals who consume the vast majority of health care spending. For the majority of people who have simpler primary care needs, there are more streamlined, technology-enabled, and cost-effective methods of delivery. For example, Dr. Jay Parkinson has proposed what he calls "Primary Care 3.0"

which is optimized for the majority of people with simple medical needs.[131]

If an issue can't be addressed in primary care, you move up to the diagnostic layer (e.g., lab tests) for deeper insight to rule in/out various issues. Then, if you need a prescription, you'd go to the next layer—pharmacy woven into primary care. Organizations such as ChenMed do this well. If a prescription isn't the answer, you proceed to the next layer for a "professional consultation". This is a consult between the PCP and an unconflicted specialist. In this context, unconflicted means that the specialist wouldn't be performing an intervention or procedure, thus removing the profit incentive to overtreat. If an intervention is needed, you proceed to the next layer—intervention via focused care setting with deep experience in the intervention.

Jonathan Bush, CEO of athenahealth, told me about his own knee surgery and finding that even the highest-volume knee surgeons in Boston only do less than one-third of what they could. They spend the rest of their time doing a bunch marketing they'd rather not do (e.g., be a "team doctor" for a sports team to market themselves). Most would rather spend the majority of their time doing what they do best. If they did, they could drop their unit price.

Finally, for the unfortunate few who have rare and highly complex conditions, they'd go to a Center of Excellence (CoE) in their condition like the NIH, Mayo, etc. at the top of the pyramid.

To reiterate, even when at higher levels of the pyramid, the goal is to move back down the pyramid as soon as possible.

As I developed this framework further, I was interested in getting specialists' feedback. Relatively speaking, I've spent more time with primary care physicians at the base of the pyramid. The most advanced and successful value-based primary care organizations intuitively understand two key issues that drive costs and quality.

1. Fostering self-care and caregiving by nonprofessional loved ones is essential to optimizing healing and health.

2. Without a seasoned "ship captain" (the primary care physician), rough medical seas cause patients to needlessly suffer from an uncoordinated health care system.

Specialists, like any group of humans, have many opinions, but I will share the feedback from Dr. Venu Julapalli on the framework (he has also been writing about the tenets of Health 3.0).[132] The following are Dr. Julapalli's comments, edited for length and clarity.

I am loving what you guys have come up with.

1. *It starts with self-care at the base. That's key. It underscores personal responsibility in health, which has been woefully neglected. At the same time, social determinants of health (SDoH) are right at the base, where they belong. I love the pyramid's government facet, letting it act as the market accelerator, not an overly active market participant without the ability to enable the most effective and efficient system.*
2. *It properly puts value-based primary care right near the base. As a specialist, I don't need to be near the base. I also need to have as few conflicts of interest as possible in my interactions with primary care.*
3. *It properly puts the specialist care in focused settings near the top (this position doesn't make them the most important, just the most focused). This is what Devi Shetty is executing in India and Cayman Islands—high-volume cardiovascular surgery by experts who love what they do, while dropping unit price ridiculously through streamlined operations and economies of scale.133*
4. *It appropriately puts Centers of Excellence at the very top—go there for help with rare diagnoses, but keep it limited. We should also never forget the power of the engaged patient, who destroys the most expert doctors when love for life takes over. See this article as an example, "His Doctors Were Stumped. Then He Took Over."134*

Overall, I love this pyramid framework. Conceptually, it's honoring much of what I've come to believe on health care, health, and healing. You're distilling what real-life experiences and data have shown works in health care.

I will conclude with a quote highlighting how we need a major overhaul. Simply shifting who pays is just moving deck chairs on the Titanic. Metaphorically, we're all on the same ship. Dr. Otis Brawley, chief medical officer for the American Cancer Society said, "I have seen enough to conclude that no incident of failure in American medicine should be dismissed as an aberration. Failure is the system."

APPENDIX F

HEALTH 3.0 VISION

IMPLICATIONS FOR PROVIDERS, GOVERNMENT, AND STARTUPS

In the Health 3.0 Vision appendix, we laid out the failings of Health care 1.0 and 2.0 that have primed us for Health 3.0. Despite these failings, we should keep the positive and necessary elements. It's hard to argue that it's not an especially challenging time for nearly anyone in health care. We have epidemic levels of burnout amongst doctors,[135] only 20 percent of physicians report being engaged,[136] health care organizations are struggling to keep up with every-changing reimbursement and quality rules, and well-intentioned government initiatives continue to inadvertently slow rapid-pace innovation. Without a common vision and framework of what Health 3.0 should look like, we'll remain where we are, failing to activate the full potential from our collective passion, resources, and efforts. Even eight Olympic-caliber rowers can't make headway without a common goal and view of the course ahead.

In Health 3.0, the fragmented, uncoordinated health care jumble we know today must be replaced with a unified interplay of these four key elements.

1. Health & wellness services
2. Health & wellness services purchasing practices
3. Technology embedded throughout health care
4. The role of government

Health care is frequently a jumble of uncoordinated silos organized around medical technology, rather than people. This has led to a suboptimal experience for both patients and clinicians. This is often made worse by incentives that run counter to optimizing health outcomes.

The Health 3.0 framework has high-level implications for the following key audiences.

Health Care Provider Organizations

Major trends are making the care delivery elements of Health 3.0 a once-in-a-career opportunity (or threat). Just in the U.S. experts expect $1 trillion of annual revenue to shift from one set of health care players to another over the next decade.[137] This is a byproduct of the transition to purchasing health care with accountability baked in. Here are three ways health care provider organizations can advance and thrive in a Health 3.0 world.

1. Sell health services conveniently & be accountable for the value you deliver

Various new primary care models such as onsite/near-site clinics and direct primary care have significantly expanded their scope of services (remote monitoring, health coaching, etc.). The top performers readily put their fees at risk (e.g., Vera Whole Health, Privia, Iora Health, etc.). Medicare Advantage programs are taking off like wildfire, with the top performers delivering care far differently than in volume-driven models. If you're a health care provider, this is the future!

We expect Medicare Advantage to continue to grow and Medicaid Advantage to follow closely behind. This can't be dismissed as fringe when two early adopter organizations (Care-

More and HealthCare Partners) were acquired for over $5 billion and there has been over $1.2 billion invested in next generation primary care models in the past couple of years.[138] Sadly, we hear of too many organizations trying to foolishly cling to fee-for service and even enacting anti-competitive practices such as threatening doctors in their communities who don't refer to them (e.g., blocking data and patient flows).[139] Our message to you, is don't be scared, be brave. Be among the early organizations that figure out and master how to thrive in the inevitable future.

2. Millennials, they're a comin'

If you thought boomers were a big deal, millennials dwarf them and are transforming markets. This has already had a devastating impact on a local oligopolistic market (newspapers) similar to health care.[140] In another area of health, Big Food and Big Soda have had their worst earnings in decades caused by millennials having significantly different purchasing habits than their parents. The status quo in our current legacy health care system is nearly a perfect opposite of what millennials want and value. Organizations that think they're entitled to their patients' kids are in for a rude awakening. For most provider organizations, private employers are their most lucrative revenue stream. Millennials are already the biggest chunk of the workforce and expected to be 75 percent of the workforce in 10 years. As millennials wake up to the reality that they will be indentured servants to the health care system without change, expect their voices to be heard like never before. Health 3.0 is just what millennials want.

3. Destructive doctor relationships will destroy hospitals' success

It's not just doctors that feel abused by the Health care 2.0 system. However, the economic impact of doctors leaving in droves to new players and from burnout will enormously harm health systems. The ZDoggMD "Lose Yourself" anthem high-

lights the rising revolution of nurses, doctors and clinicians who are saying "enough" and leaving for organizations focused on the Quadruple Aim.[141]

Government Officials

With Health 3.0, government will experience implications within the many roles it plays.

1. Be a smart buyer

It seems every local, state, and federal government entity is struggling with budget challenges—largely the result of health benefits being the second biggest expense after wages for many entities. As one public entity found, the best way to slash health care costs is to improve benefits (e.g., greatly improved access to value-based primary care).[142] Innovative new health care delivery organizations can serve a broader audience faster if the government is an early adopter of higher-performing health benefits. The employee and government entity can both win when employees get access to superior care that also reduces total health spending. Money is freed up to contribute to the other social determinants of health that governments can impact.

2. Don't rob from Peter to pay Paul

Government is in a unique position to improve public health and other social determinants of health. Sadly, hyper-inflating health benefits costs unnecessarily steal funds from public health and social determinant programs. These social and economic factors drive ~40 percent of health outcomes, while clinical care only drives ~20 percent.[143] Yet it consumes far more financial resources. Wise government leaders recognize the opportunity for cultivating what we call economic development 3.0, playing the high-performance health care system card. Those that have done this have created enormous value for their constituents.[144] We all intuitively know that health care spending comes at the

expense of other household spending. Economic Development 3.0 properly aligns limited public resources to improve social determinants of health and reduce middle class wage stagnation.[145]

3. Why accept in health care what we'd never accept elsewhere?

Imagine if local, state, and federal government contracts for road and highway construction did not require smooth connections between road sections. This is exactly what happens in health care. We pay trillions of taxpayer dollars to tax-exempt health care organizations (many health systems are tax-exempt), yet permit them to prevent implementation of many simple care improving processes, reporting, and technologies, such as simple exchange of vital patient information critical to enabling clinicians to provide high-quality care. Collectively, trillions have gone to health care organizations that lack even basic modern connectivity. Nowhere in our society are more lives in jeopardy. It's like military generals who are actively prevented from seeing the full battlefield.

Even worse from a public health perspective is the status quo's limited ability to facilitate two-way communication in crisis situations. We've seen this recently with Zika. Modern, cloud-ed-based electronic health record and other communication systems can rapidly identify and respond to public health threats, identifying regions and individuals at greatest risk.[146] Yet most organizations use outdated systems that require manual updates. This unnecessarily imperils the most vulnerable in society.

4. Get out of the way!

Sadly, many well-intentioned government efforts have damaging unintended consequences. Government officials should adopt a Hippocratic Oath of sorts. Too often, recognizing the damage caused by policy mistakes and the subsequent confessions come too late.[147] Government should avoid defining technology innovation and what connectedness looks like, instead focusing

on rewarding adopting it. Stop dictating how technology companies share data and information. Demand that the private sector deliver the right outcomes—information flowing from all clinical data sources—then let the private sector complete that work.

Technology Startups

Innovate with the Like-Minded—Where's that Puck Going?

Avoid the hazard of selling to large health care organizations too early, which is often terrible advice investors and others give (e.g., land a big account).[148] Innovation takes time to incubate in smaller organizations before expanding to larger organizations. Typically, traditional large health care organizations aren't far enough ahead of the curve on Health 3.0 to be the most valuable early customers.

Further, there are entirely new digital health opportunities that span beyond traditional health care systems. In the population health era, a true population health manager could be a city health commissioner that looks beyond the sick care system. Don't focus on where the world is, think where health-related services might and should go. That is likely more fertile ground for a startup in their early years. A good rule of thumb is don't pursue a provider that is bigger than your current install base.

Health 3.0 is an exciting world where hospital CEOs aren't in the conflicted position of being rewarded to fill beds like a hotel manager. It puts health in the community. Health systems should rejoice that their new financial incentives are aligned with their missions, unlike the status quo that incentivizes the opposite.

The great news is that many hospital CEOs are just as excited about Health 3.0 as the hundreds of thousands of clinicians activating to drive towards a health ecosystem that works for everyone.