

May 9, 2012

Remote and Social: Managing chronic disease with patient self- monitoring and Facebook

Presentation to UW MEBI 590 by:
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numera™
Measurably better health.

Why it's important...

Problem of time, space and money...



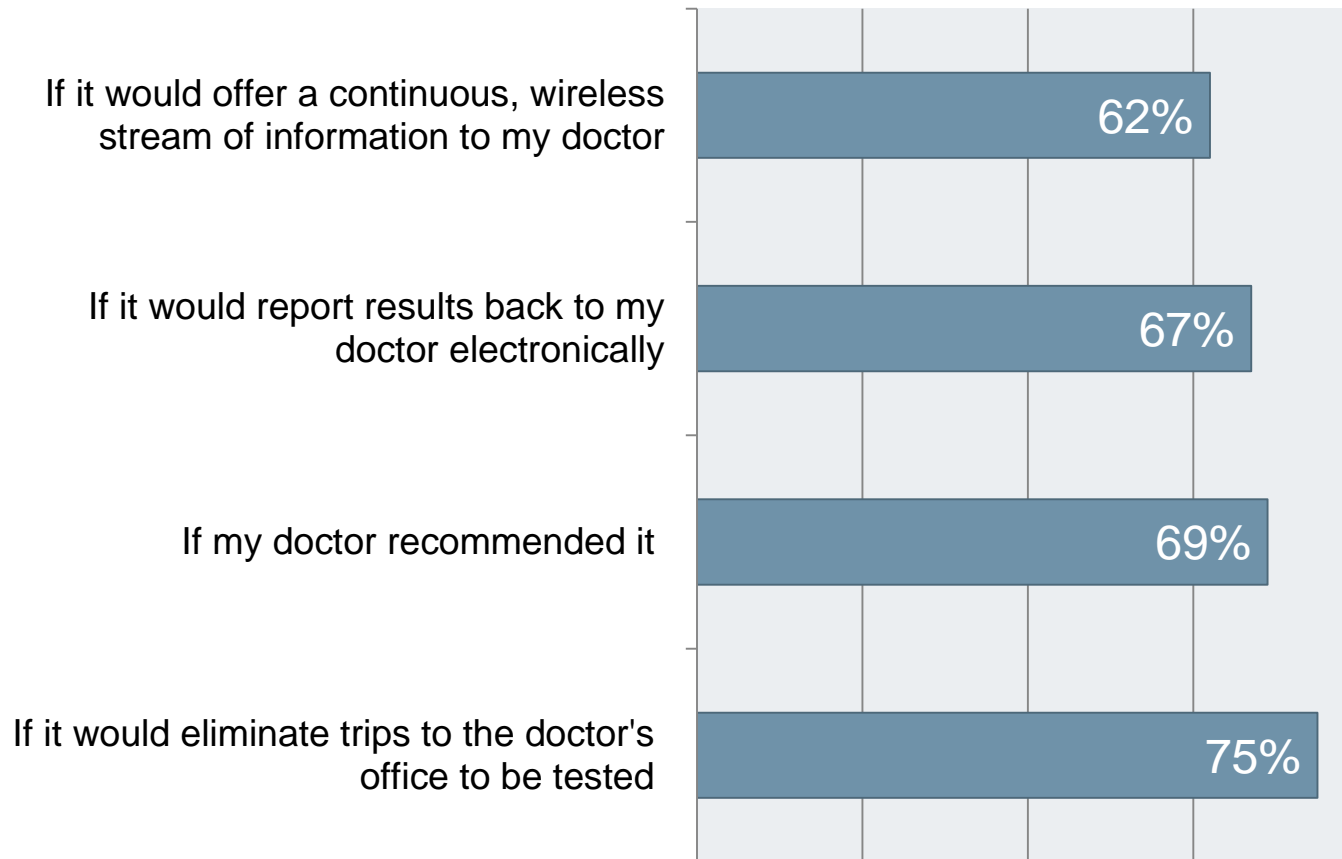
- Approximately half the US population is managing a chronic condition
- Each year close to 2 million new Type 2 diabetics will be diagnosed, and most will be late 40's to 50's when they learn the news
- The percentage of patients >65 with 4 or more chronic conditions almost doubled over last 15 years
- Patients with chronic conditions report challenges with access to care and an ongoing relationship with a provider
- The mean length of office visit is essentially unchanged over last 20 years
- Close to 20% of Americans have a high financial burden associated with healthcare spending

Sources:

- <http://www.biomedcentral.com/1471-2318/11/47/table/T2>
- American Diabetes Association,
- Are Patients' Office Visits with Physicians Getting Shorter? David Mechanic, Ph.D., Donna D. McAlpine, M.A., and Marsha Rosenthal, M.A. N Engl J Med 2001; 344:198-204 [January 18, 2001](#)
- The Growing Financial Burden of Health Care: National and State Trends, 2001-2006. March 25, 2010. Peter J. Cunningham, Ph.D. *Health Affairs* Web First, March 25, 2010.
- <http://www.biomedcentral.com/1471-2318/11/47>



Consumers Want Telehealth



Source: Deloitte Center for Health Solutions Survey of Health Care Consumers, 2008



Clinical Study Findings Demonstrate Key Benefits

Dimension	Study/ Design	Participants	Results
Chronic Condition Management¹	<ul style="list-style-type: none"> Impact of telehealth on management of diabetes 	<ul style="list-style-type: none"> 1665 older Medicare beneficiaries with diabetes 	<ul style="list-style-type: none"> Improved HbA1c, blood pressure, total and LDL cholesterol levels at 1 year of follow up
Aging in Place²	<ul style="list-style-type: none"> Outcomes of telehealth and pedometer use on physical activity and impairment in older adults 	<ul style="list-style-type: none"> 1650 older Medicare beneficiaries with diabetes 	<ul style="list-style-type: none"> Telehealth reduced 5 year rates of decline in physical activity and impairment in older adults with diabetes
Health & Wellness³	<ul style="list-style-type: none"> Meta-analysis on association between pedometer with physical activity and health outcomes 	<ul style="list-style-type: none"> 2767 adult participants across 26 studies 	<ul style="list-style-type: none"> Pedometer use associated with significant increases in physical activity and significant decreases in body mass index and blood pressure
Transitions in Care⁴	<ul style="list-style-type: none"> Effect of telemonitoring on 30-day readmission rates 	<ul style="list-style-type: none"> 5800 Medicare beneficiaries 	<ul style="list-style-type: none"> 30 day readmission rates for the telehealth and non-telehealth patients was 10.3% and 17.1%, respectively

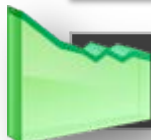
1. Shea et al. A randomized trial comparing telemedicine case management with usual care in older, ethnically diverse, medically underserved patients with diabetes mellitus. J Am Med Assoc. 2006 Jan-Feb;13(1):40-51.
2. Weinstock et al. Lessened decline in physical activity and impairment of older adults with diabetes with telemedicine and pedometer use: results from the IDEATel study. Age Ageing. 2011 Jan;40(1):98-105.
3. Bravata et al. Using pedometers to increase physical activity and improve health: a systematic review. JAMA. 2007 Nov 21;298(19):2296-304.
4. Chen et al. Telehealth and hospitalizations for Medicare home healthcare patients. Am J Manag Care. 2011 Jun 1;17(6 Spec No.):e224-30.

A VHA Program Makes A Strong Case for Reducing Hospitalization through Telemonitoring



Background	Veterans Health Administration initiated a Care Coordination/Home Telehealth (CCHT) program
Participants	43,430 enrolled, 96% male, age range 20-101 (mean age 66.5) 67% managed for one condition; 33% managed for multiple conditions
Interventions	Informatics, disease management, telehealth, devices with actionable objective data; 85% message/monitoring devices
Results	25% reduction in # of bed days, 19% reduction in hospital admissions and mean satisfaction score rating of 86%

Condition	# Patients	% Enrolled	% Decrease in Utilization
Diabetes	8,954	48%	20.4%
Hypertension	7,447	40%	30.0%
COPD	1,963	12%	20.7%



Conclusion

Telemonitoring reduces utilization and is a cost-effective way of managing chronic care patients

Source: Darkins, 2008



Strong Benefits Demonstrated for Telemonitoring

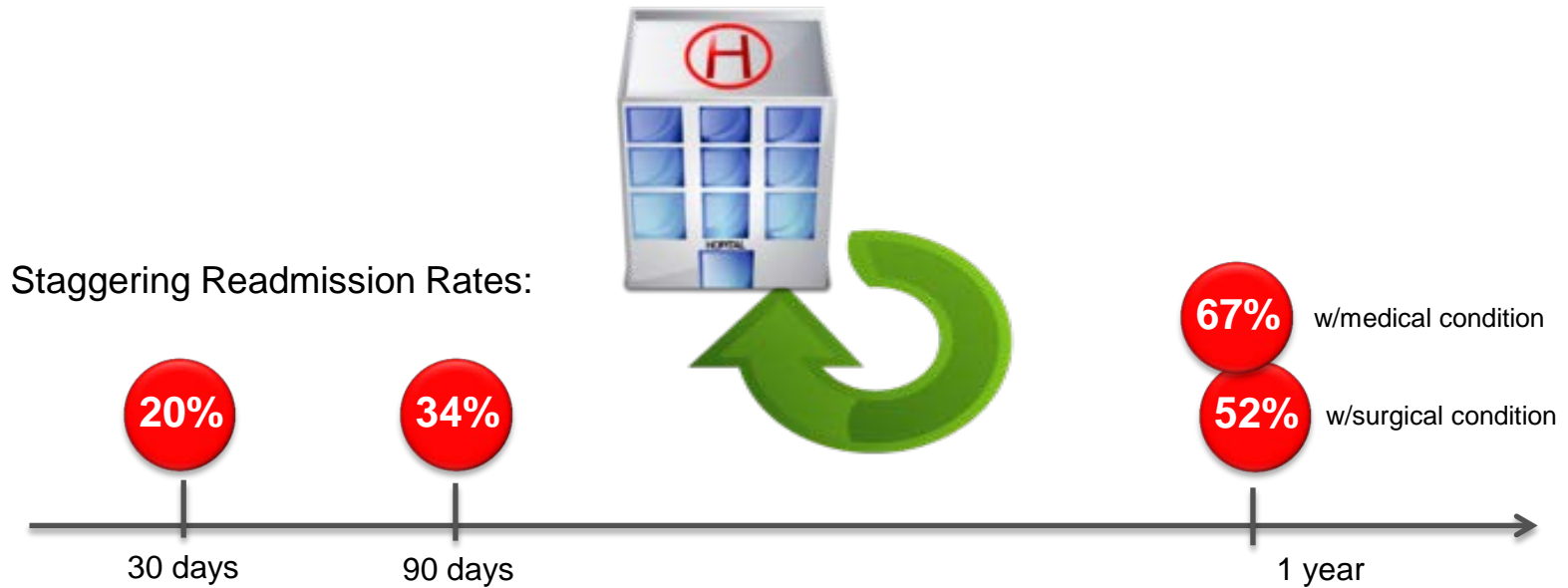
Background	UK Department of Health launched the largest randomized control trial of telecare and telehealth in 2008
Participants	<ul style="list-style-type: none">• 6,191 participants monitored for minimum of 12 months• 3,030 patients had either diabetes, heart failure or COPD.
Interventions	Each site used different equipment and methodologies.
Results	<ul style="list-style-type: none">• 45% reduction in mortality rates• 15% reduction in A&E visits• 20% reduction in emergency visits• 14% reduction in elective admissions• 14% reduction in bed days
Conclusion	Telehealth can substantially reduce mortality, reduce the need for admissions to hospital, lower the number of bed days spent in hospital and reduce the time spent in A&E
Long-Term Plan	The Department of Health is launching a “Three Million Lives” campaign in order to reach all those who could benefit from telehealth and telecare.



Source: Whole System Demonstrator Programme – Headline Findings December 2011



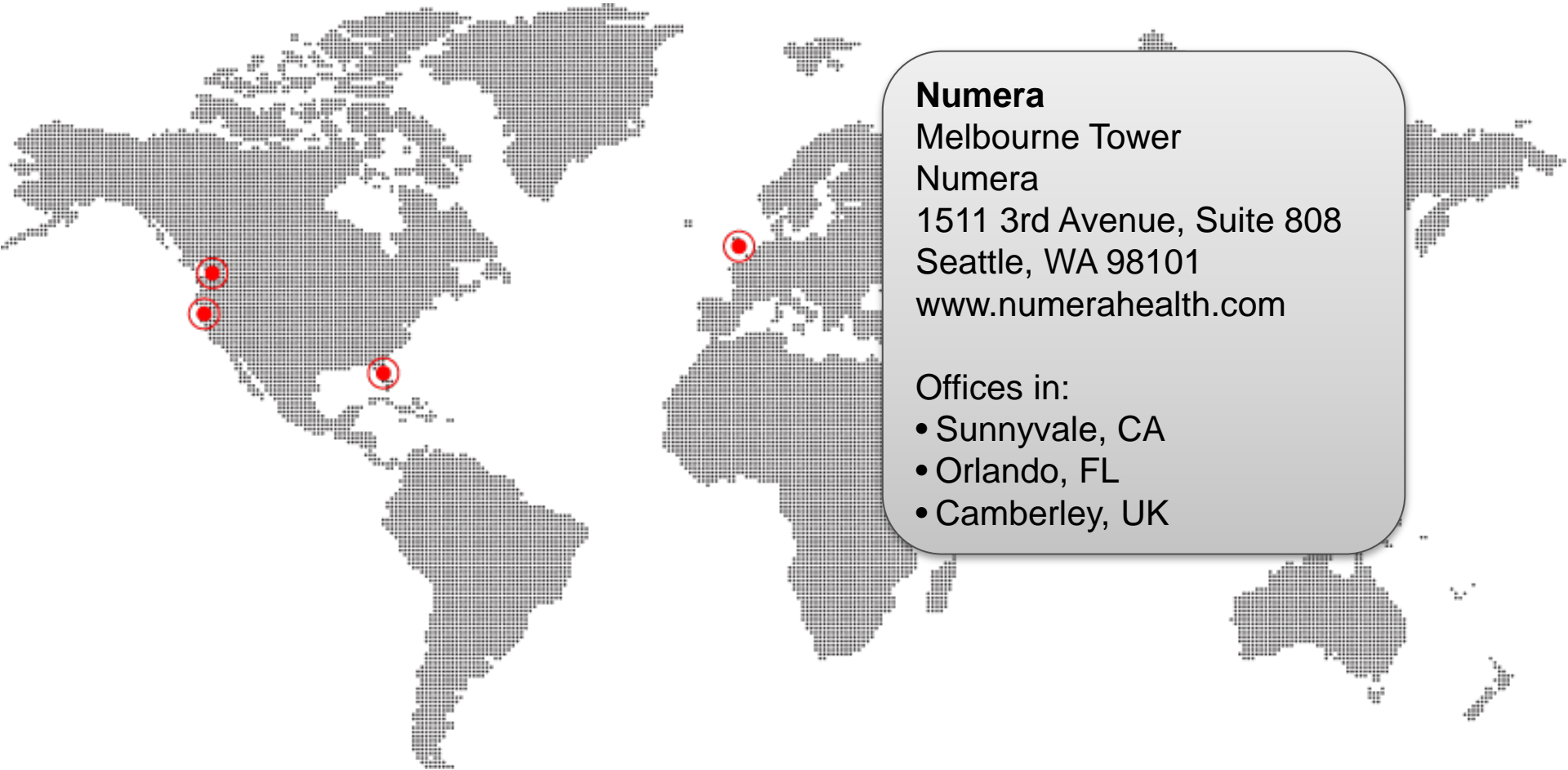
Medicare Target: Hospital Readmissions



Over 50% never saw an MD and had minimal or no supervision.
Over 75% of these readmissions are preventable or manageable

Who we are...

Corporate Offices



Numera

Melbourne Tower

Numera

1511 3rd Avenue, Suite 808

Seattle, WA 98101

www.numerahhealth.com

Offices in:

- Sunnyvale, CA
- Orlando, FL
- Camberley, UK

Numera Company Background

- A Synergenics portfolio company:
 - Chairman: Dr. William J. Rutter, CEO Synergenics
 - Primary investor & majority shareholder
 - Founder & Chairman, Chiron Corp. 1981-2003
 - Chair, Biochemistry/ Biophysics UCSF 1979-1982
 - Management Team
 - Diverse leadership experience from Microsoft, Revolution Health, Cardiac Science, Medtronic, Cirrus International





The Numera Solution Zone

	CHARACTERIZATION	EXAMPLE CONDITIONS	POPULATION SERVED	PPPY \$
LEVEL 3	High Complexity <ul style="list-style-type: none"> • Highest Acuity • Co-Morbidities • Case Management 	<ul style="list-style-type: none"> • Heart Failure • Late Stage COPD 	<5% of population <ul style="list-style-type: none"> • Severe Illness Coordination • Post-discharge/Avoid re-admission 	1-5k
LEVEL 2	Chronic Conditions <ul style="list-style-type: none"> • Disease Management • Self-Management • Primary and Specialist Care 	<ul style="list-style-type: none"> • Asthma • Diabetes • Hypertension • Obesity 	>40% of population <ul style="list-style-type: none"> • Condition Management • Screening/Surveillance • Risk Assessment • Clinical Weight Loss 	\$100 to \$500
LEVEL 1	Wellness & Fitness <ul style="list-style-type: none"> • Self-supported Health Management 	<ul style="list-style-type: none"> • Overweight • Stress 	>50% of population <ul style="list-style-type: none"> • Walking programs • Exercise • Diet • Stress Management 	under \$100

Numera Zone

Kaiser Permanente Care Triangle

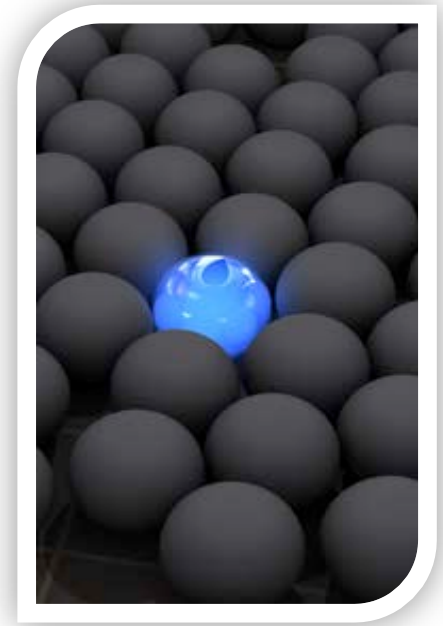
How we do what we do...

How Numera is Unique

Any device to any system...

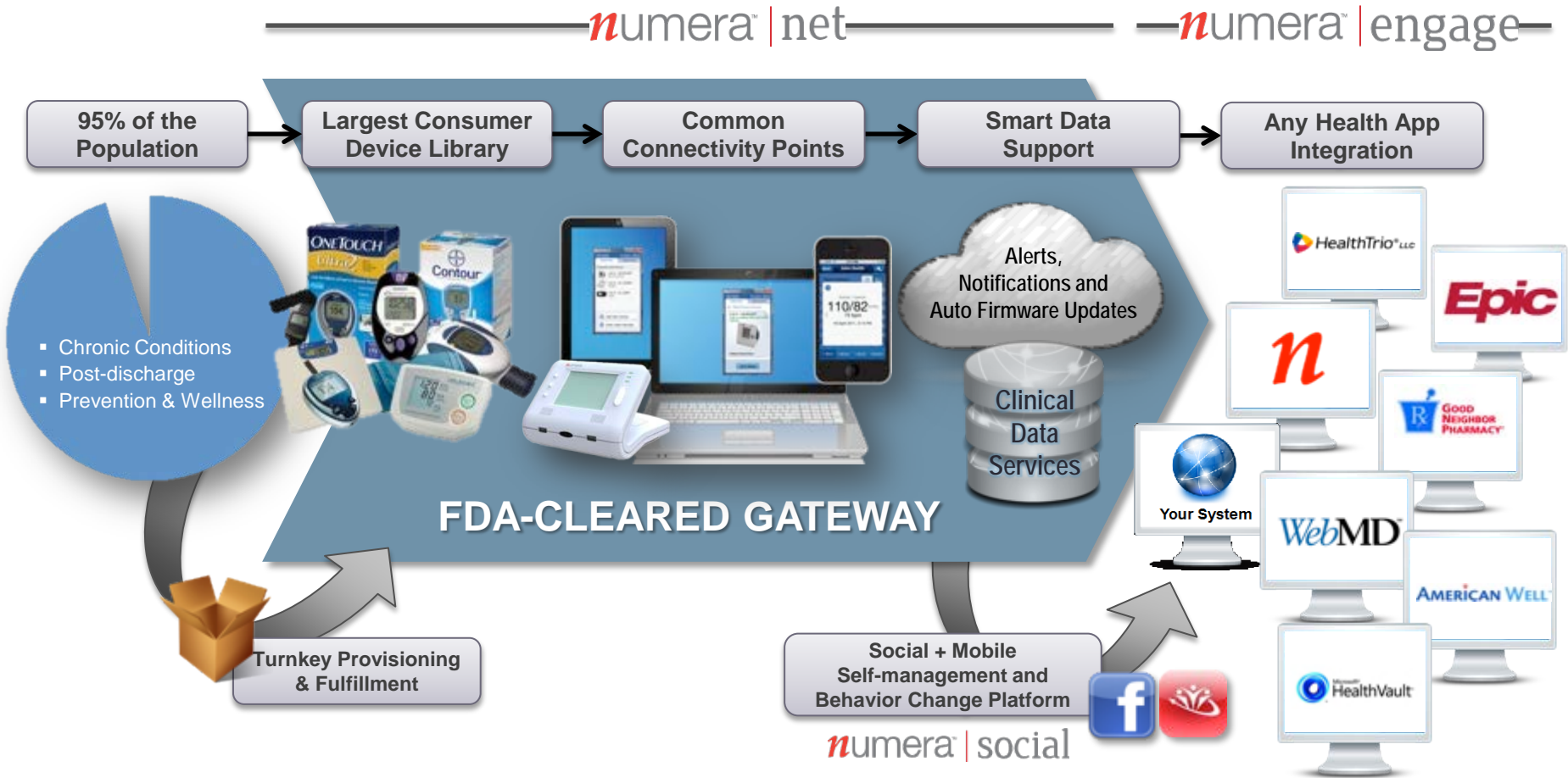
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- Industry's largest health device library
- Low-cost, FDA-cleared gateways
- Secure, cloud-based data services
- Open architecture, modular approach
- Turnkey solutions supporting virtually any health coaching platform
- Direct-to-consumer fulfillment
- Self-management social networking layer
- Integration with market-leading EHR and PHR partners





“Open Systems” Design Enables Affordable Scalability for Large Populations



Wide Range of Supported Devices and Parameters



SUPPORTED HEALTH PARAMETERS

SUPPORTED DEVICE CATEGORIES

	Diabetes	Asthma/ COPD	Cardiac	Weight Mgt.	Post Discharge	Wellness
Glucose Meter	■					
BP Monitor	■		■	■	■	
Peak Flow Meter		■			■	
Weight Scale	■		■	■		■
Pedometer	■	■	■	■	■	■
Pulse Oximeter		■	■		■	
PT/INR			■		■	

Numera HealthPort

Next generation hub for non-PC users with support for analog and digital communication, including optional GSM and WiFi

In market Summer 2012, replacing current in market hub

HealthPort Features



2 USB Ports on Front, 2 on Back

Batteries – 4 AA's, compartment topside

3 Status LEDs

4 Buttons (3 Navigation, 1 Selection)

3.5" 320x240 Color Display

HealthPort Details

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BlueLibris

Newest addition to our product portfolio, purchase announced last week.

Blue Libris – Why?



- Market Opportunity
 - TeleHealth/Remote Monitoring slow to mature (but progressing)
 - Personal Safety rapidly expanding
 - Reimbursement changes driving Transitions in Care focus
- Innovation:
 - Personal Health Gateway
 - TeleHealth+TeleCare in single mobile platform
 - On-board activity sensors compliment Healthy Aging programs
 - Unique approach for Bluetooth device support

PERS Market Opportunity



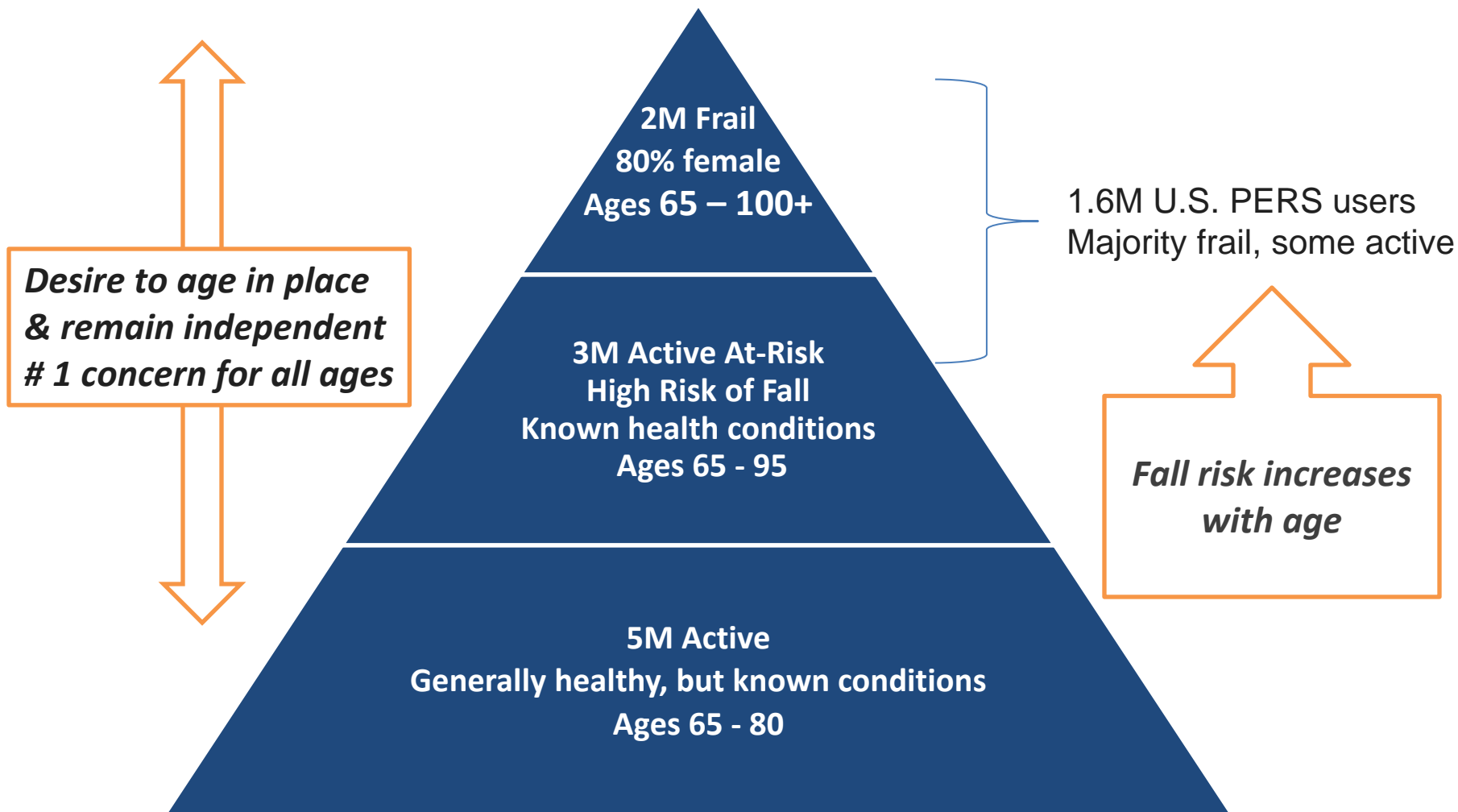
- Falls are leading cause of injury for those over 65
 - 31% of those 65+ suffer a fall permanently affecting their mobility
 - Early detection leads to 26% fewer hospitalizations, 80% fewer deaths*
- 40 million seniors (65+) and 78 million aging boomers (46 – 64)
 - 20 million need daily monitoring for safety and security**
 - Over 10 million 65+ live alone**
- Market growth
 - PERS Market grew from US\$963.9 million in 2010, an increase of 15.2% compared to 2009. Market will grow to \$1.86 billion by 2017 with CAGR 10.4%****
 - Home health monitoring to grow from \$3.0B (2010) to \$7.7B (2012)***
 - 50,000 new PERS installs monthly in US

Sources:

- * WHO Health Evidence Network
- ** Center for Disease Control
- *** Johns Hopkins
- **** Frost and Sullivan

Age & Condition of Target Market

10M Seniors Live Alone out of 40M aged 65+ in U.S.A.



“Blue Libris” = Personal Health Gateway

TeleCare + TeleHealth + Activity Monitor

- “Libri” Device
 - 2-way voice, GPS Tracking, GSM, Bluetooth
 - Accelerometer, Gyroscope, Magnetometer
 - 40 hour battery life
- TeleCare
 - Automatic Fall detection
 - Alert Button/Call Center Integration
- TeleHealth
 - Home Health Device Connectivity (Scales, Glucometers, BP, etc..)
 - Reminder Service (Medication, Activity...)
- Activity Monitor
 - Activity Sensing (walk, run...)
 - Geo Tracking/Fencing



Numera Social

Currently in market, launched October 2011

Our Focus: Escalating Chronic Health Issues



50% of the US population by 2025 estimated to have a chronic health problem

Drives up to **70% of the cost** of care

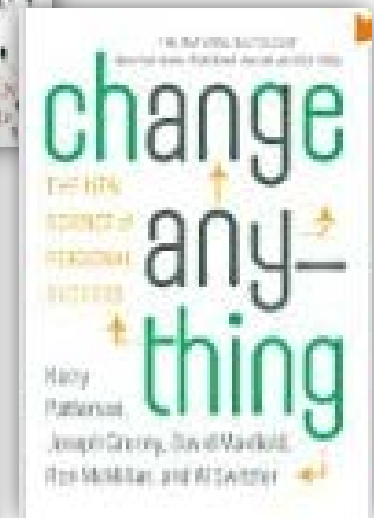
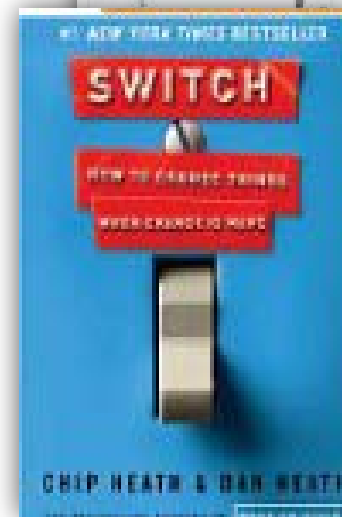
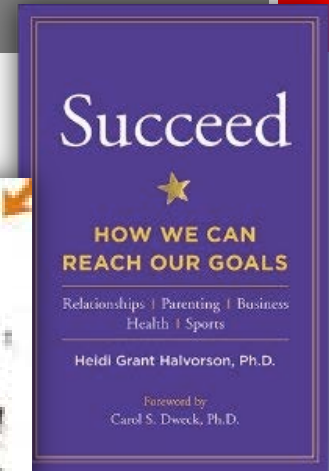
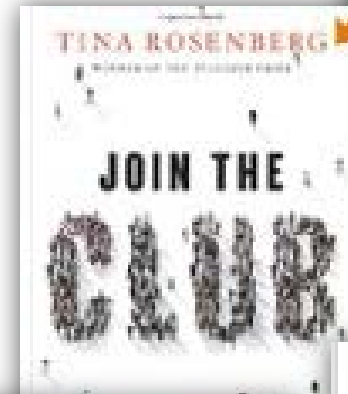
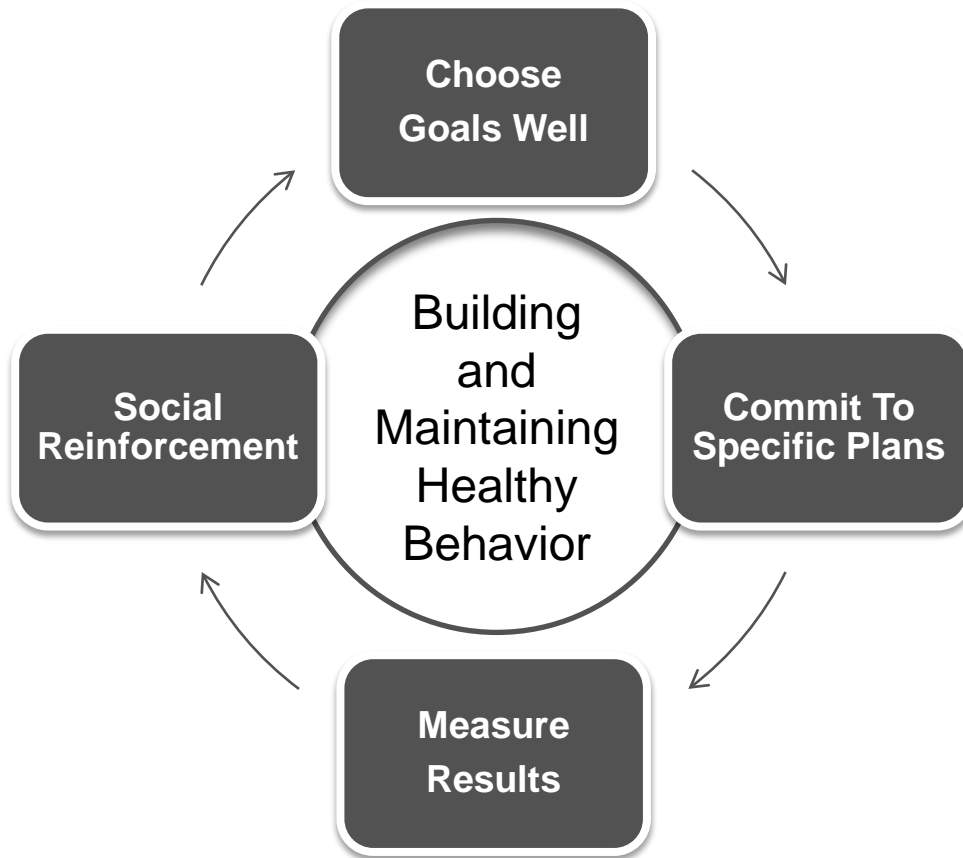
Obesity, diabetes, hypertension, asthma, arthritis, smoking

The “chronic care alignment problem”

- Those needing help typically aren't self-motivated
- No financial incentive for providers to support self-help
- Claims-based model does not apply to self-help approach
- Reams of confusing information and lack of engaging tools for consumers

The biggest barrier is self-management of chronic issues: **Personal behavior change**

The Science of Success: Changing Personal Behavior



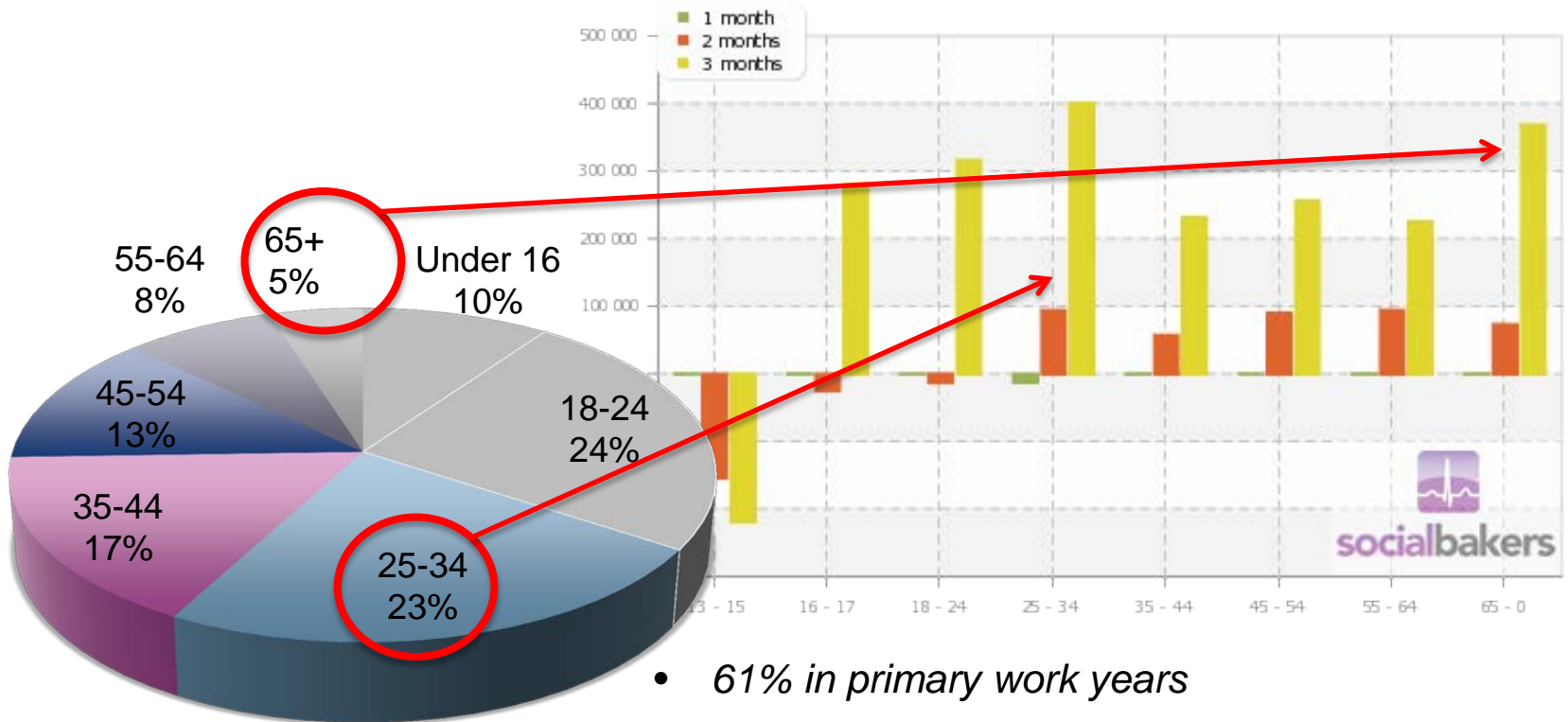
Some numbers that support the power of open social network approach...

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- 156M US Facebook accounts
 - 50% of population have an account
- 50% log into their account daily
- Average US user has 229 friends
- Average user spends 20 minutes on Facebook per visit
- 1 in every 5 page views online occurs on Facebook
- 49% of users feel better about brands with social network presence



US Facebook users by age...



- 61% in primary work years
- 13% over 55
- Highest growth rate over 65
- “Average Social Gamer is a 43 Year Old Woman”

What About Privacy ?

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facebook

Search

Lisa Brown Find Friends Home

numera social my health set goals join a plan challenge

Welcome to Numera Social
You are already on your way to measurably better health.

achieve health goals follow a guided plan start a challenge

I'm ready to start! Tell me more...

MY PRIMARY GOAL
Choose a goal or CREATE YOUR OWN
GOALS

ACHIEVEMENTS
GOALS PLANS CHALLENGES
target reached listed here

FRIENDS (200) SEE ALL INVITE CHALLENGE

TWITTER
Um ipsumquo doluptas earum et que consensis aspendendae deliqua tempore, ipis des quam quam eationes dem idemp soluplat estsiur, ipiciminus eu. 3 days ago · reply · retweet · favorite

People You May Know
Barry Aaronson Add Friend
Jack Milton 1 mutual friend Add Friend
Amber Diabo 1 mutual friend Add Friend
Mason Sexton 6 mutual friends Add Friend

Sponsored
CA Lottery MEGA Millions
Today's Jackpot is \$148,000,000! Click to find out where to buy your ticket!
21,920 people like California Lottery.
Building Opportunity from Bank...
Like saving? Help us save our communities. They make America great. "Like" if you agree.
Like: 433,010 people like this.

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- App hosted separately from Facebook
- Connected via social API's
- FB cannot 'see' info until shared
- Private by default
- User must decide to share to FB

101.3 Million US Smartphone Users



Mobile Content Usage

3 Month Avg. Ending Jan. 2012 vs. 3 Month Avg. Ending Oct. 2011

Total U.S. Mobile Subscribers (Smartphone & Non-Smartphone) Ages 13+

Source: comScore MobiLens

Share (%) of Mobile Subscribers

	Oct-11	Jan-12	Point Change
<i>Total Mobile Subscribers</i>	100.0%	100.0%	N/A
Sent text message to another phone	71.8%	74.6%	2.8
Used downloaded apps	43.8%	48.6%	4.8
Used browser	44.0%	48.5%	4.5
Accessed social networking site or blog	32.3%	35.7%	3.4
Played Games	29.2%	31.8%	2.6
Listened to music on mobile phone	21.2%	24.5%	3.3

Five hundred million people will be using mobile health apps by 2015, according to the "[Global Mobile Health Market Report 2010-2015](#)," released yesterday. "Our findings indicate that the long-expected mobile revolution in [healthcare](#) is set to happen. Both healthcare providers and consumers are embracing smartphones as a means to improving healthcare," said head researcher, Ralf-Gordon Jahns

Social + Mobile (+Data) = Powerful Platform



The image displays the NumeraSocial Facebook interface on both desktop and mobile. The desktop view shows a user profile for Lisa Brown with a goal to "Be in my best shape by May for our vacation... drop 5 lbs." and a line graph for Blood Glucose levels. The mobile phone view shows the same interface adapted for a smaller screen.

Desktop View:

- User Profile:** Lisa Brown, with options to manage privacy & settings, assess your health, and send feedback.
- Primary Goal:** "Be in my best shape by May for our vacation... drop 5 lbs."
- Achievements:** "1/24/2012 I completed 10000 Steps Challenge" and "11/8/2011 I won 1st place in Walk for the Cure!"
- Blood Glucose Graph:** Shows glucose levels over time (2/27, 2/29, 2/10, 2/13, 2/16). The y-axis ranges from 92 to 142. The x-axis shows dates. The data points are approximately: 2/27: 132, 2/29: 122, 2/10: 102, 2/13: 128, 2/16: 132.
- Navigation:** View My, GOALS, PLANS, CHALLENGES.

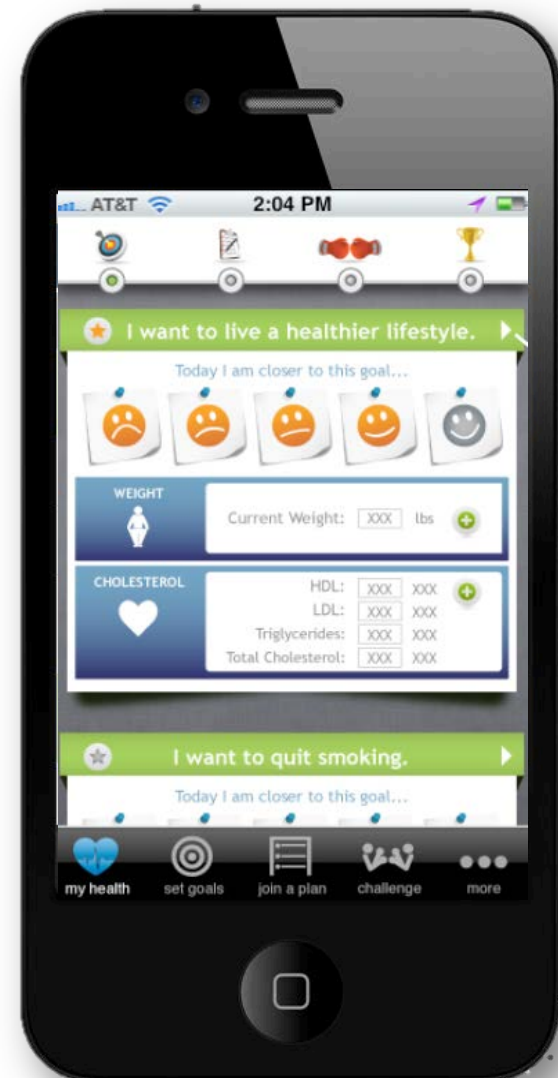
Mobile View:

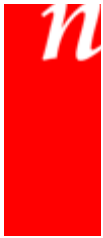
- Goal:** "I want to live a healthier lifestyle."
- Progress:** "Today I am closer to this goal..."
- Weight:** "I WANT" section with "Current Weight: XXXX lbs" and a plus sign.
- Cholesterol:** "CHOLESTEROL" section with HDL, LDL, Triglycerides, and Total Cholesterol values.
- Navigation:** my health, set goals, join a plan, challenge, more.

Mobile Companion Application

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- Dashboard to the application
- Guide to daily actions
- Input personal metrics
- Access to all Plans and Challenges
- Notification reminders about next steps
- Stream of social interaction





Customize the Experience

- Your brand, your app
- Your expertise, your health action plans, your challenges
- Your colors
- Your graphics/style
- Your links, your feeds



American Diabetes Association (ADA) of Puget Sound



facebook Bill Reid Home

Bill Reid

- manage privacy & settings
- diabetes risk assessment
- send feedback

MY PRIMARY GOAL

Walk More

CHANGE

ACHIEVEMENTS

GOALS | PLANS | CHALLENGES

View My → GOALS | PLANS | CHALLENGES

Walk More

Today I am closer to this goal...

Steps

Date	Steps
4/12	2436
4/13	2436
4/14	4436
4/15	4436
4/16	4436
4/17	4436
4/18	4436
4/19	4436
4/20	436

SELECT TIME FRAME VIEW: 7 30 90 + add data

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Microsoft 401(k) advice
futureadvisor.com

Personalized advice for your Microsoft 401(k) and other investments. Unbiased and free.

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Microsoft Employees get the BEST PRICE* on Alienware. Protected by McAfee®. Shop now.

Overlake Hospital Medical Center

Check out Overlake Hospital Medical Center's Facebook page to see what we've been doing for the community. "Like" us today!

Like · 2,290 people like this.

Luxury M Chat (26)