

Reducing Hospital Admissions: Lessons from the Health Buddy Project (Care Management for High-Cost Beneficiaries Demonstration)

Presentation to National Medicare Readmissions Summit
June 1, 2009



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Agenda

- Who Are We?
- Context
- The model
- History of the model
- Overview of the Health Buddy Project
- Future directions – refining the model



Health Buddy Project Lessons

Bosch Overview

“Bosch regards innovation as something more than exceptional product quality, functionality and design. Not only our technical developments, but also our commitment to society has an effect on the world of tomorrow.”

- Founded in 1886
- Global corporation with:
 - 2007 revenues of 46 billion Euro
 - 270,000+ employees
- 92% owned by Robert Bosch Charitable Foundation
 - Percentage of profits channeled into charitable programs throughout the world
- Core businesses:
 - Automotive parts / systems
 - Industrial technology
 - Consumer goods and building technology
- Latest market entries
 - Health care technology / Remote patient monitoring (investments >\$500M)
 - Alternative Energies / Solar cell technologies (investments > \$1B)



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Health Hero Network as Part of the Bosch Group

The Bosch Motto is: **'Invented for Life'**

- Three concise words that embody our values, our competencies and our goals

- 'Invented for Life' means
 - ... reliable technology designed to last

 - ... technology that accompanies people for a good part of their lives

 - ... intelligent, innovative and beneficial technology to help make peoples lives easier and more enjoyable

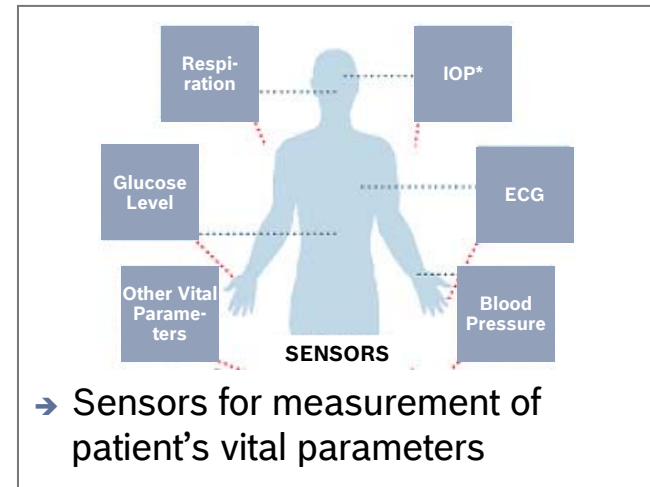
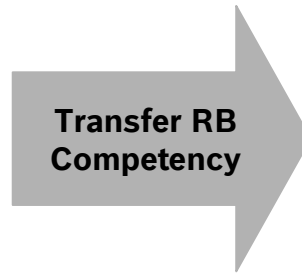
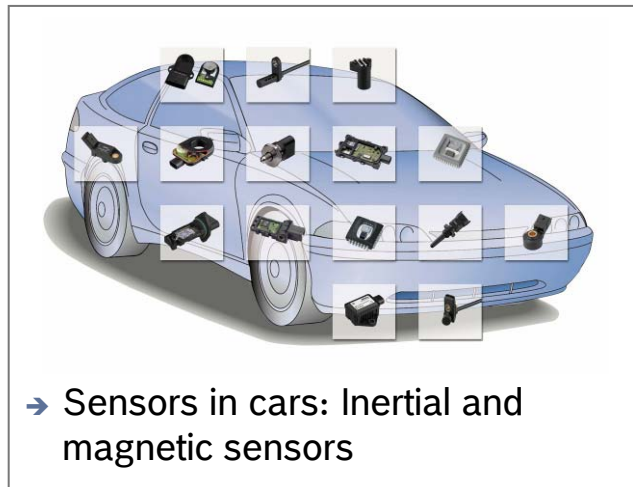


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Health Buddy Project Lessons

Bosch Overview: **Competencies**

Transferring Award Winning Innovative Sensor & Decision Support Technologies to Health Care



Medical Technical Innovation	<ul style="list-style-type: none">→ Miniaturization of sensors and control modules→ More intelligent and simple devices→ Multi-sensors: Integration of several sensor modules
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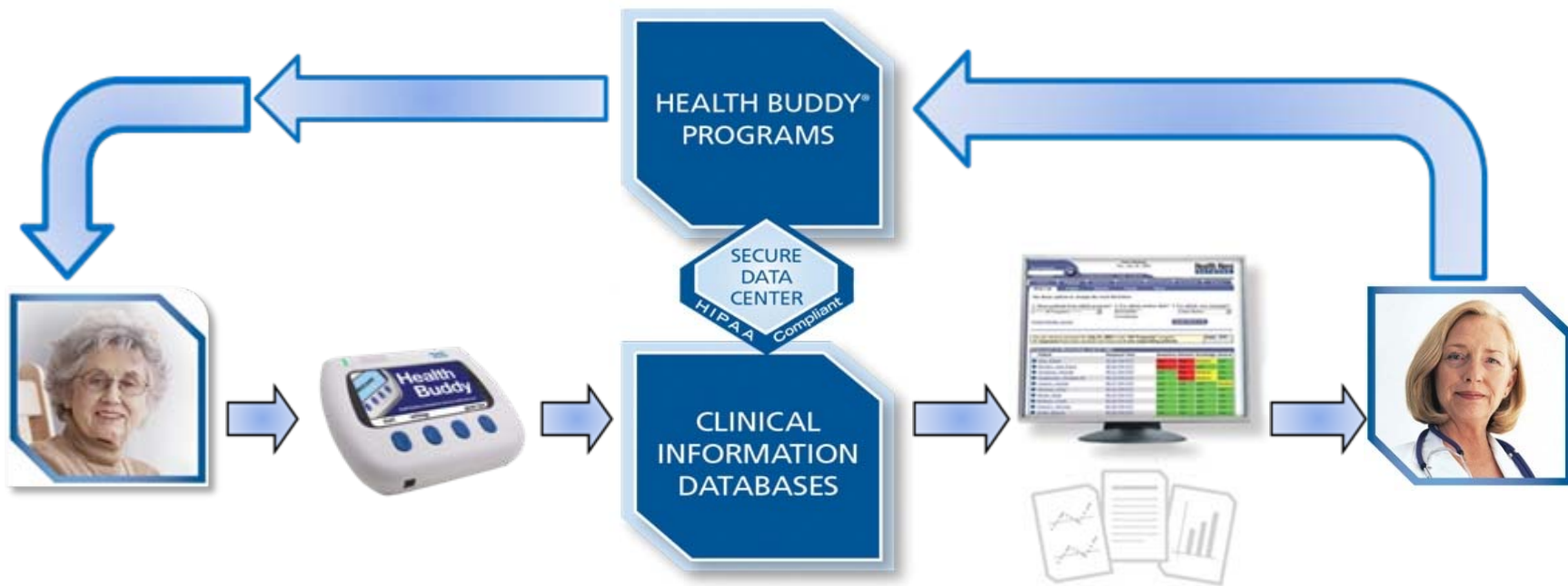
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Context

- Primary focus is on manageable chronic conditions that drive a disproportionate share of admissions and spending
- Perceived need for continuous support and monitoring of individuals who are at high risk
 - Theory:
 - 1) Keep them healthier so they have less need to enter the ‘sick care’ system
 - 2) Monitor them to ensure we can catch complications early – preferably so an episode can be ‘nipped in the bud’
 - 3) Provide them with post-acute support so we can ensure they get back home as quickly as possible – and stay there



Health Buddy System – Intervention Overview



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Health Buddy System – Overview of Model

Knowledge	★		
Behavior	★		
Symptoms			★
	H	M	L

- Identify high risks & potential problems
- Address needs through dynamic content

Knowledge	★		
Behavior			★
Symptoms			★
	H	M	L

- Move risks to lower levels
- Stabilize health status



Knowledge			★
Behavior			★
Symptoms			★
	H	M	L

- Identify changes in status early on
- Manage by exception

Stabilize Patients Over Time



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Overview of VA Care Coordination Model

- VA over past two decades has moved from hospital-based to outpatient to home-based care
- Initial experiments in Florida service network, focusing on telehealth-based care coordination for top 4 percent of population driving 40 percent of costs
- Initial evaluation (pre-post, matched control) saw 63 percent reduction in hospital admissions, 88 percent reduction in nursing home bed days



Concept: Move care from the hospital to the clinic – and to the home

Summary of VA Studies

	VISN 8 Virtually Healthy 2000 / 2001		VISN 8 CCCS 2001 / 2002			VISN 19 Mental Health 2005	VISN 8 Heart Failure 2005	VISN 21 Cost- Benefit Analysis	VISN 8 Four-Year Diabetes 2007	VISN 8 Cancer / Chemo 2007	
	Within Group	Between Group	Ft. Meyers	Miami	Lake City					Prevent- ive	Planned
Hosp. admits	-63%	-60%	-56%	-46%	-68%	N/A	-88%	-70%	-47%	-49%	102%
Hosp. bed days	-60%	-57%	-30%	-50%	-71%	-72%	-81%	-	-	-50%	*
ER Visits	-40%	-33%	-42%	-	-70%	-	-	-	-	-18%	*
Number of patients	791		1,200			123	92	105	391	42	
Disease states	Multiple (CHF, DM, COPD, Hypertension, Mental Health)			Multiple		Mental Health	Heart Failure	Multiple	Diabetes	Cancer	
Study Design	Within group pre-post	Matched Comparison	Matched Comparison			Within group pre-post	Within group pre-post	Within group pre-post	Matched Comp.	Matched Comparison	



Outcomes: VA Care Coordination/Home Telehealth 2004-2007

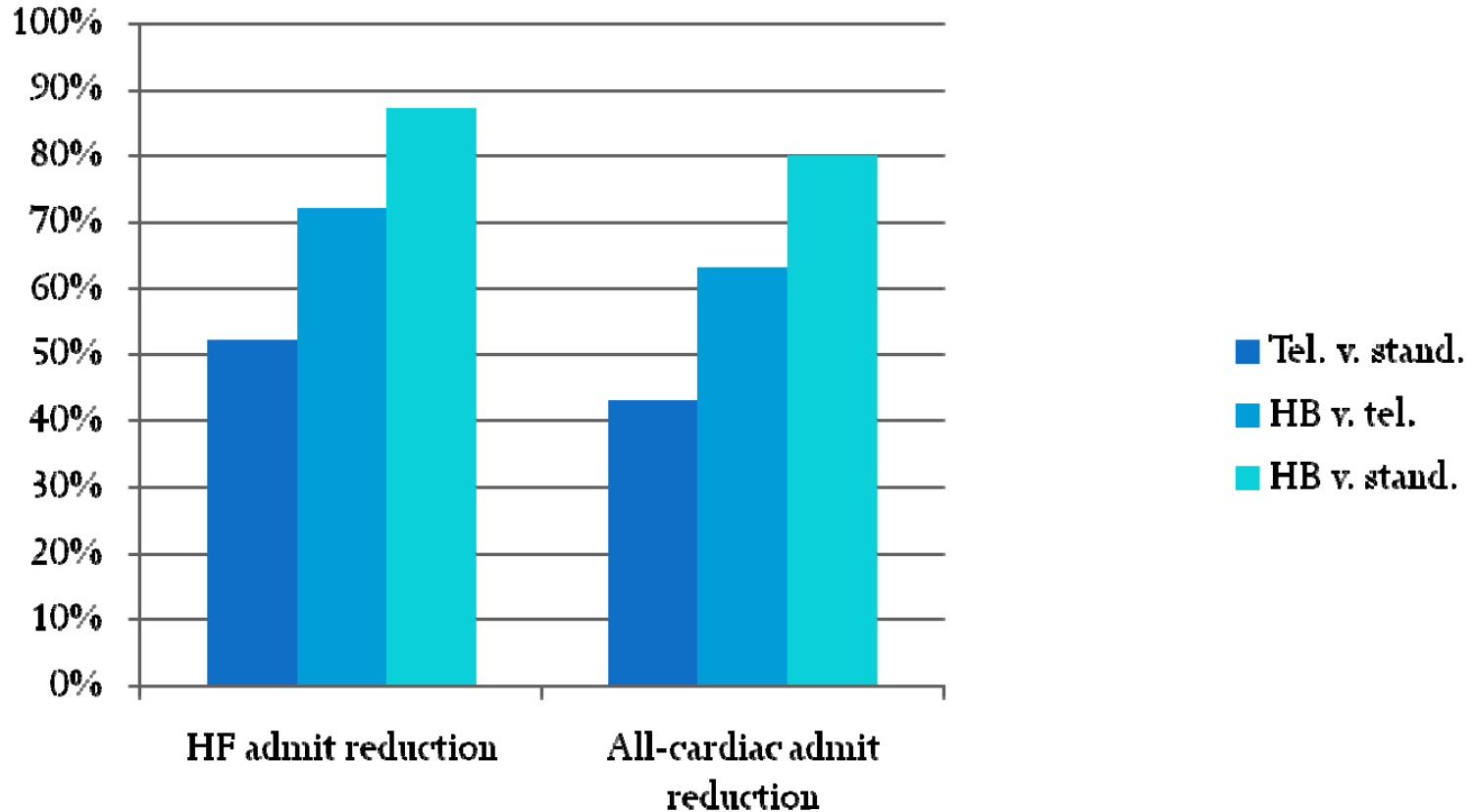
Condition	# of Patients	% Decrease Utilization
Diabetes	8,954	20.4
Hypertension	7,447	30.3
CHF	4,089	25.9
COPD	1,963	20.7
PTSD	129	45.1
Depression	337	56.4
Other Mental Health	653	40.9
Single Condition	10,885	24.8
Multiple Conditions	6,140	26.0

Darkins et al. Telemedicine and e-Health, Dec 2008

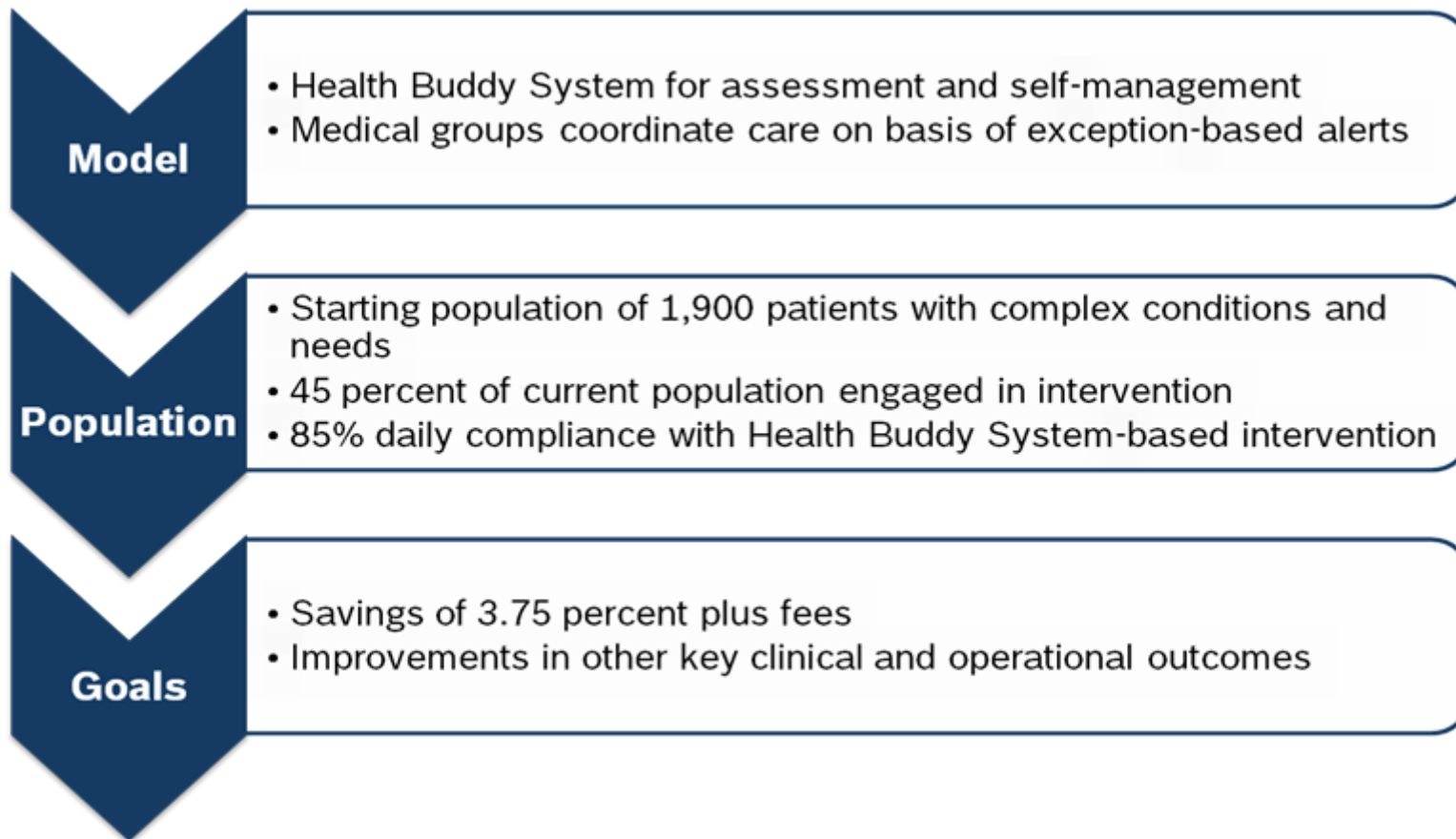


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Preventing Readmissions: SPAN-CHF II Study



CMS Health Buddy Project Phase I Overview



Project Extension / Expansion

- Medicare on January 13 announced extension of project for three years based on:
 - “... (D)emonstrated success in helping to manage the care for high cost patients.”
 - The program’s having “... had a positive impact on selected high cost Medicare beneficiaries and hav(ing) met and/or exceeded the savings target required in the demonstration agreement.”
- Project will also be allowed to expand to one additional urban site with population as large as available in that area



CMS Health Buddy Project Phase II

- Project in Pacific Northwest continues legacy population of about 1,100 beneficiaries, adds additional population of about 2,050
- Selection criteria similar to phase I but expanded
 - Claims with a diagnosis of a chronic condition used mainly to derive patients manageable for a chronic condition
 - Conditions used for selection purposes: CHF, diabetes, COPD, asthma, and ischemic heart disease, with coronary artery disease and hypertension as co-morbidities



So What Are the Key Lessons? (1/2)

- Hospitalizations represent at least 50 percent of the costs of this type of population
 - Ergo, meeting the performance target implies a reduction in admissions and readmissions
 - Although we can't present numbers, we can affirm this was a good focus
- We initially selected on disease states (CHF, diabetes, COPD) and then tried to manage those disease states
 - But we found out that these folks had a lot of stuff going on with them (i.e. depression, cancer, orthopedic) that we also driving their admissions
- We have observed a 'life cycle' within the patient population that seems to drive the need for a toolbox of options
 - We can bend the curve on some patients long-term by teaching them self-management, while others will need more active care coordination and management because they are in an acute-care cycle
 - And we're definitely grappling with how best to support folks at end of life



So What Are the Key Lessons? (2/2)

- We can affirm the geriatrician's view of the world
 - People are not the sum of their conditions – each is a complex system
 - Rather than managing the conditions, we need to manage the risk factors
 - The Wagner Chronic Care Model is more than an abstraction – we do need to provide a network of support that knits health care together with community support and senior services
- Telehealth may be 'the missing link' because these folks need continuous support to manage their conditions and catch problems early to prevent admissions and readmissions (as well as SNF / nursing home admissions)
 - No other cost-effective way to do this?
 - We're getting better at providing a personalized mix of self-management support and monitoring
- An EMR can help ...
 - But based on our experience to date, it's not essential for achieving great results – and our system generates a form of medical record in terms of immediate risk factors



Emerging Telehealth-based Models

- Models drawn from our own experience plus Randall Brown / Mathematica paper on Medicare demonstrations (March 2009)
- Direct in terms of reducing readmissions:
 - Use telehealth to support patients through post-acute transitions of care → particularly to get them back home as quickly as possible, with a combination of telehealth-based care coordination and home-based services
- More indirect:
 - Telehealth to facilitate patient self-management (automated behavioral coaching and education)
 - Telehealth to facilitate medium-term care coordination for individuals with complex conditions and needs
 - Telehealth to facilitate longer-term models of support for the frail elderly



Concluding Thought ...

- Health care begins wherever an individual is ...
- It isn't about a place ...
- It is about a person

