



Health care is too important to stay the same.

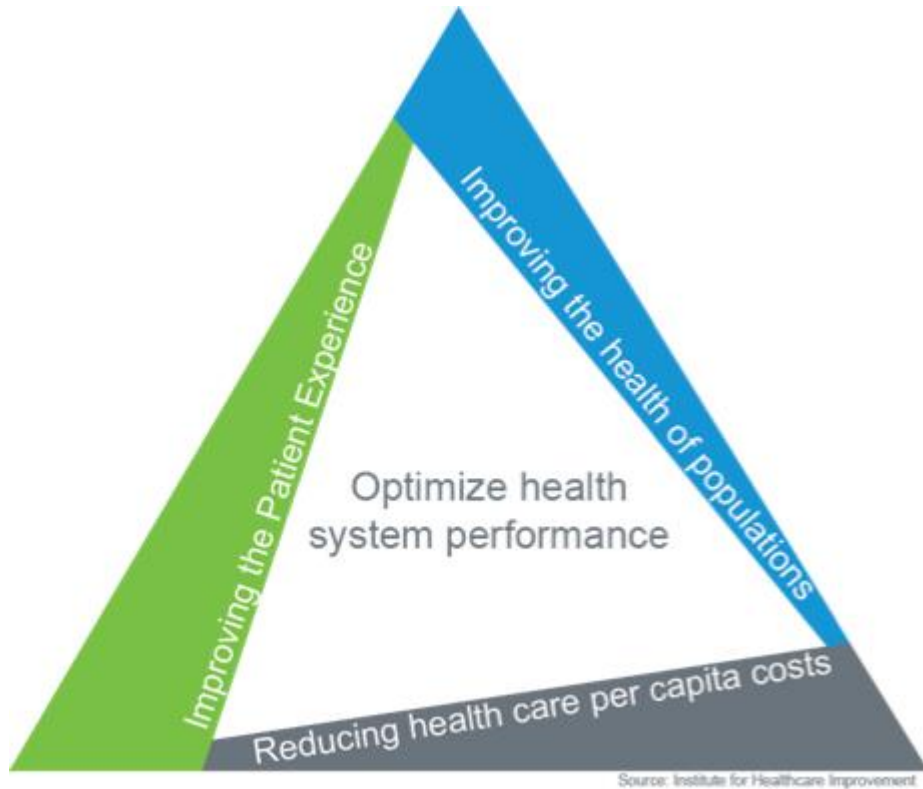
™



A satellite view of Earth from space, showing the Americas and the Atlantic Ocean, with a bright sun rising over the horizon. The image is a composite of various satellite images, showing different colors and textures of the Earth's surface. The sun is a bright white circle at the top center, casting a glow over the horizon. The Earth's surface is a mix of green, brown, and blue, with some areas appearing more vibrant than others. The text "What do you believe?" is overlaid in white, bold, sans-serif font in the lower center of the image.

**What do you believe?**

# IHI Triple Aim



Improve the **patient experience** of care  
Lower the **per-capita cost** of care  
**Improve the health** of populations

2020

# ACCOUNTABLE HEALTH ORGANIZATION

DISCOVERIES

POPULATIONS

- Aging population
- Chronic Conditions
- Declining Workforce
- Connected consumers

Predictive modeling & analytics

Evidence + Research + Clinical trials

VIRTUAL MEDICAL HOME

Real-time evidence

Value Contract  
Outcomes measurement = Value  
Total cost

PAYORS

TOTAL REVENUE

Personal Health Record

Personalized medicine  
Contextual awareness (search)  
Facilitated access (smart triage)

Outcome Warehouse

Delivery Contract

Incentive alignment  
New payment models



## HEALTH CARE



### CONSUMER ENGAGEMENT

nutrition • goals • education • activity tracking

- Reform: more measurement
- Regulatory requirements
- Price pressure
- Workforce shortage
- Digital infrastructure

CERNER CEO SUMMIT • BALTIMORE • ASHEVILLE, NC.

JULY 29-31, 2010

Tom Swartz

# Evolve health and care system to deliver the triple aim



# Who Is Doing “Population Health”?



## Health Systems

- Manage At Risk Contracts, Care Coordination, performance improvement, capture market

## State Governments

- High Risk and High Spend populations (Medicaid, State employees, Corrections)

## Employers

- Controlling costs, Effectiveness, Productivity, Satisfaction and Retention

## Payers

- Performance and cost discrepancies, lack of execution of efficient and effective care pathways

## Global

- High Health Expenditures, Care Coordination, performance Improvement, etc.

# Who Is Doing “Population Health”?



## Commercial

- Life Insurance
- Data Aggregators
- Retailers
- Etc.



## Ecosystem

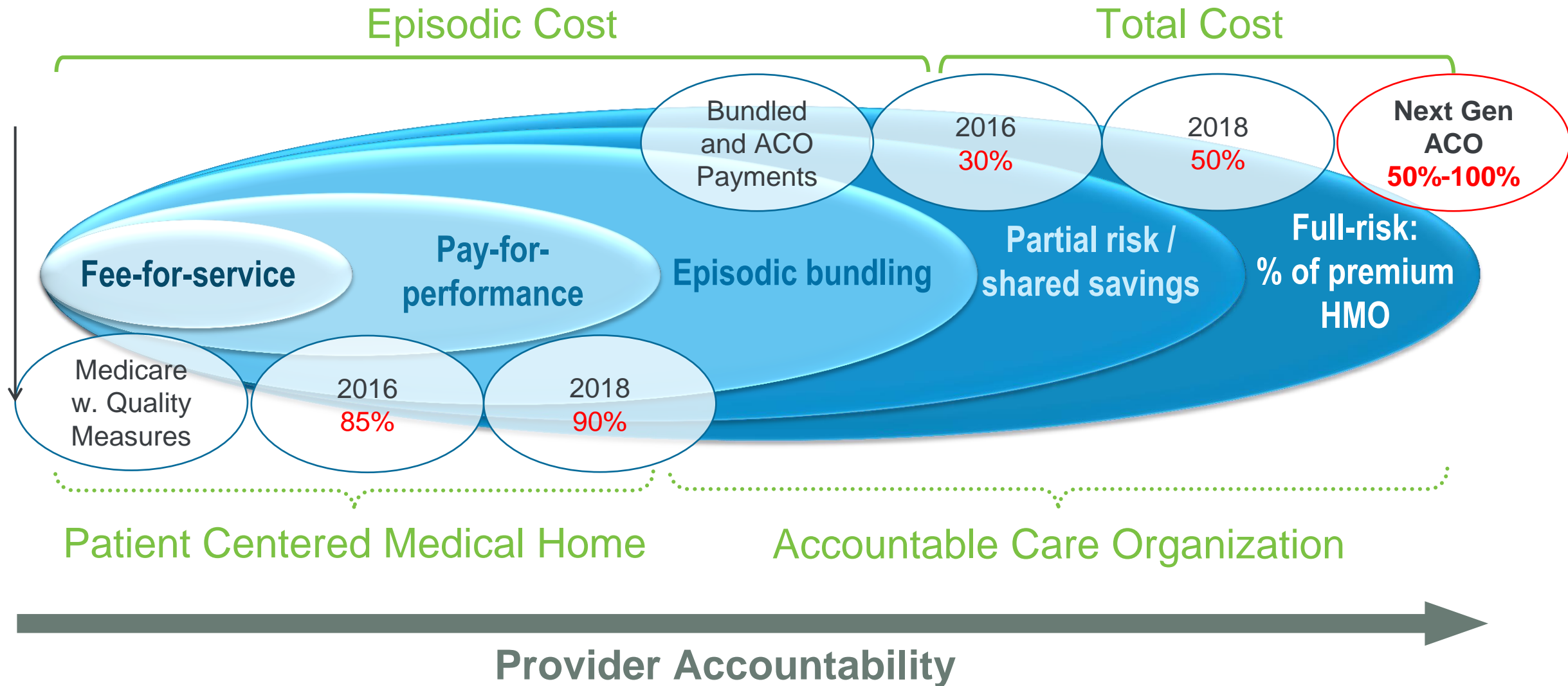
- App Developers
- System Integrators
- Etc.



## Research

- Pharma
- Academic Institutions
- Public Health
- Etc.

# From volume to value | Continuum of payment models





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## HHS reaches goal of tying 30 percent of Medicare payments to quality ahead of schedule

*A major milestone in the effort to improve quality and pay providers for what works*

Thanks to tools provided by the Affordable Care Act, an estimated 30 percent of Medicare payments are now tied to alternative payment models that reward the quality of care over quantity of services provided to beneficiaries, HHS announced today. Today's announcement means that over 10 million Medicare patients are getting improved quality of care by having more time with their doctors and better coordinated care – nearly a year ahead of schedule.

The Affordable Care Act established tools such as the Medicare Shared Savings Program and the Center for Medicare and Medicaid Innovation, which tests a number of alternative payment models for achieving better care, smarter spending and healthier people. Alternative payment models are ways for Medicare to reimburse providers based on the health of the patient and quality of care rather than the number of services provided. Examples include accountable care organizations (ACOs), advanced



- |                                       |                                       |                                 |                            |                               |
|---------------------------------------|---------------------------------------|---------------------------------|----------------------------|-------------------------------|
| 1) Fog light (front)                  | 13) Ignition switch warning           | 26) Trailer tow hitch warning   | 39) Airbag warning         | 52) Bonnet open               |
| 2) Power steering warning light       | 14) Key not in vehicle                | 27) Air suspension warning      | 40) Handbrake warning      | 53) Low fuel                  |
| 3) Fog light (rear)                   | 15) Key fob battery low               | 28) Lane departure warning      | 41) Water in fuel filter   | 54) Automatic gearbox warning |
| 4) Washer fluid low                   | 16) Distance warning                  | 29) Catalytic converter warning | 42) Airbag deactivated     | 55) Speed limiter             |
| 5) Brake pad warning                  | 17) Press clutch pedal                | 30) Seat belt not on            | 43) Fault problem          | 56) Suspension dampers        |
| 6) Cruise control on                  | 18) Press brake pedal                 | 31) Parking brake light         | 44) Dipped beam headlights | 57) Oil pressure low          |
| 7) Direction indicators               | 19) Steering lock warning             | 32) Battery/alternator warning  | 45) Dirty air filter       | 58) Windscreen defrost        |
| 8) Rain and light sensor              | 20) Main beam headlights              | 33) Parking assist              | 46) Eco driving indicator  | 59) Boot open                 |
| 9) Winter mode                        | 21) Tyre pressure low                 | 34) Service required            | 47) Hill descent control   | 60) Stability control off     |
| 10) Information indicator             | 22) Sidelight information             | 35) Adaptive lighting           | 48) Temperature warning    | 61) Rain sensor               |
| 11) Glow plug/diesel pre-heat warning | 23) Exterior light fault              | 36) Headlight range control     | 49) ABS warning            | 62) Engine/emissions warning  |
| 12) Frost warning                     | 24) Brake lights warning              | 37) Rear spoiler warning        | 50) Fuel filter warning    | 63) Rear window defrost       |
|                                       | 25) Diesel particulate filter warning | 38) Convertible roof warning    | 51) Door open              | 64) Auto windscreen wiper     |





**Maria**

9 year old girl who lives with asthma

# HEALTH TEAM



**Maria Cortez**  
PATIENT



**Cristina & Julio**  
MOTHER AND  
FATHER



**Lisa**  
SCHOOL NURSE



**Dr. Tupas**  
POPULATION  
HEALTH MEDICAL  
DIRECTOR



**Brenda**  
LVN CARE  
COORDINATOR



**Dr. Fortades**  
PEDIATRICIAN

Automatic alerts, or text messages, are sent to Mom, Dad, and the School Nurse to notify Maria's care team of the poor air quality (AQI > 230)



Dr. Fortades  
PEDIATRICIAN



BREATHMOBILE



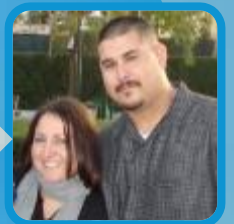
EMR



EMR



Lisa  
SCHOOL NURSE



Cristina & Julio  
MOTHER AND FATHER



Brenda  
LVN CARE  
COORDINATOR



Maria Cortez  
PATIENT



Dr. Tupas  
MEDICAL DIRECTOR



Maria uses her spirometer at school

# Health Profile

The information provided below is in the electronic medical record. If you believe any data is incorrect, please notify the office.

## Asthma Action Plan

### Triggers

Smoke, Pollen, Mold, Exercise

### Green Zone: Go! Peak Flow: 240 - 205

#### Symptoms:

- Breathing is easy.
- No cough or wheeze.
- Can sleep all night.

Date ▾	Reading ▾	Location ▾
Yesterday	205	Home
Yesterday	210	Home

### Yellow Zone: Caution Peak Flow: 205 - 155

#### Symptoms:

- First sign fo a cold.
- Cough or mild wheeze.
- Problems sleeping, working, or playing.
- Tight chest.

Date ▾	Reading ▾	Location ▾
Today	180	School
Today	185	School

### Red Zone: Emergency - Get Help Peak Flow: < 155

#### Symptoms:

- Can't talk, eat, or walk.
- Medicine not helping.
- Breathing hard and fast.
- Blue lips and fingernails.
- Tired or lethargic.
- Ribs show.

Date ▾	Reading ▾	Location ▾
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Christina (Mum) logs into Maria's member portal and see her daughter's peak flow readings



### Alert Queue

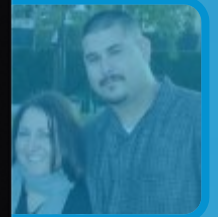
Priority	Status	Patient & Subject	Received
<b>Urgent</b>	New	McBride, Lucas Call patient to assess respiratory status View Patient's Alerts	11:01 AM
<b>Urgent</b>	New	Cortez, Maria Call patient to assess respiratory status View Patient's Alerts	10:50 AM
<b>Urgent</b>	New	Abbot, Clark Questions about appointment this afternoon View Patient's Alerts	10:24 AM
<b>Urgent</b>	New	Morton, Latoya Consult report View Patient's Alerts	9:14 AM
<b>Urgent</b>	New	Hudson, Josh Questions about appointment this afternoon View Patient's Alerts	9:12 AM



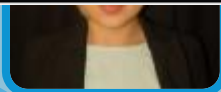
Lisa  
SCHOOL NURSE



MOBILE



Cristina & Julio  
MOTHER AND FATHER



Brenda  
LVN CARE  
COORDINATOR



Dr. Tupas

Brenda (care coordinator) notified that Maria is at risk

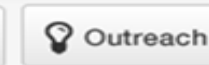
PATIENT

# Brenda, drills down to look at Maria's asthma action plan



# Cortez, Maria

MRN: 0003367222 9y DOB: 1/14/2005 F Next Appointment: In 7 Days  
Address: 2345 N Bush Street Santa Ana, CA 92856 Phone: (714) 785-8097



## ⚠️ Alerts

**Patient in yellow zone. Please have an evaluation completed and appointment within the next 24 hours.**

Health Summary

**Action Plan**

Monitoring

## – Asthma Action Plan

### GREEN ZONE: Go

Inhaler Use

Peakflow Range: 240-205

Breathing is easy.  
No cough or wheeze.  
Can sleep all night.

205	School
	2 months ago
220	Home
	3 months ago

<b>Personal Best</b>	230	Home
		4 months ago

### YELLOW ZONE: Caution

Inhaler Use

Peakflow Range: 204-155

First sign of a cold  
Cough or mild wheeze  
Tight chest  
Problems sleeping,  
working, or playing

<b>Albuterol</b>	School today	<b>180</b>	School today
<b>Albuterol</b>	Home 1 week ago	200	Home 1 week ago
<b>Albuterol</b>	Home 3 weeks ago	190	Home 3 weeks ago
<b>Albuterol</b>	School 2 months ago		

### RED ZONE: Emergency—get help!

Inhaler Use

Peakflow Range: <155

Can't talk, eat, or walk  
Medicine not helping

<b>Albuterol</b>	Home 8 months ago	<b>140</b>	Home 8 months ago
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## Triggers

- Smoke
- Pollen
- Mold
- Exercise

**Maria's asthma action plan that Brenda would have access to**



Dr. Fortades  
PEDIATRICIAN



BREATHMOBILE



Lisa  
SCHOOL NURSE



Cristina & Julio  
MOTHER AND FATHER



Brenda  
LVN CARE  
COORDINATOR



Dr. Tupas  
MEDICAL DIRECTOR

**Brenda sends Cristina a text message**

PATIENT

# At the mobile clinic, the nurses are using the EMR for scheduling



**Dr. Fortades**  
PEDIATRICIAN

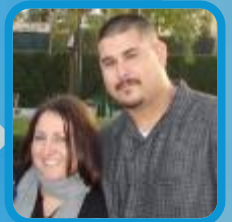


**BREATHMOBILE**



**Lisa**  
SCHOOL NURSE

Patient Name	Symptom	Time	Status
Cook, Zoey	Cough	9:00am	Checked out
Macy, Jake	Cough	10:00am	Seen by doctor
Cortez, Maria	Difficulty breathing	11:00am	Seen by nurse
Lunch	BBQ	12:00pm	
Crown, David	Difficulty breathing	1:00pm	Confirmed
Carter, Billy	Cough	2:15pm	Confirmed
Slusky, James	Difficulty breathing	3:00pm	Confirmed
Torres, Savannah	Cough	3:30pm	Confirmed
Frost, Kathryn	Difficulty breathing	4:00pm	Confirmed



**Cristina & Julio**  
MOTHER AND FATHER



**Brenda**  
LVN CARE  
COORDINATOR



**Dr. Tupas**  
MEDICAL DIRECTOR

**PATIENT**

# ...and management

**Cortez, Maria** 8 years Female DOB: 1/14/05

### Chart Review

Recent Documents & Diagnostics

- 5 months ago Discharge Note
- 5 months ago Pulmonary Circuit Note
- 5 months ago History and Physical Note
- 5 months ago ED Note

### Vitals & Measurements

Last 72 Hours

Temp	Max	39.8	HR	Max	135	RR	Max	20	Pack Flow	!155
37.6	Min	37.2	126	Min	98	!30	Min	18		
O <sub>2</sub> Sat	!93	Height	127	Weight	52	BSA	14.1			

### Asthma Action Plan

Albuterol School today **180** School today >

### Problems

- Asthma >
- Historical (2) >

### Medications

Home Medications

- Albuterol MDI**  
2 puffs, Inhal QPRs as needed >
- Flovent**  
110 Inhal, 2 puffs, BID with spacer >
- Flintstones Childrens Multi-vitamin with iron**  
1 tab every morning with food >

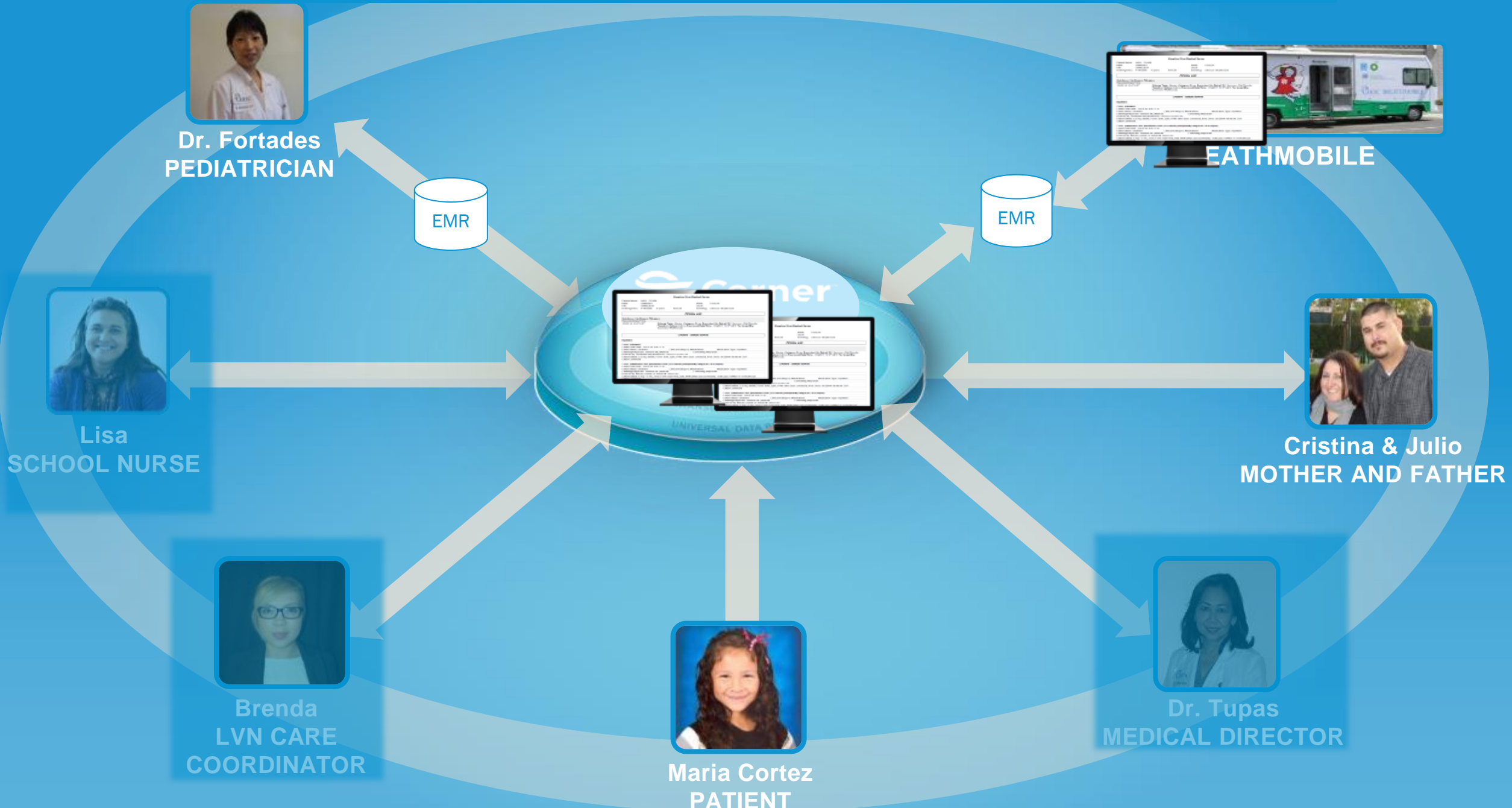
Past Clinic Medications

- Albuterol**  
2.5mg in 3ml NS, Nebulized, Once >

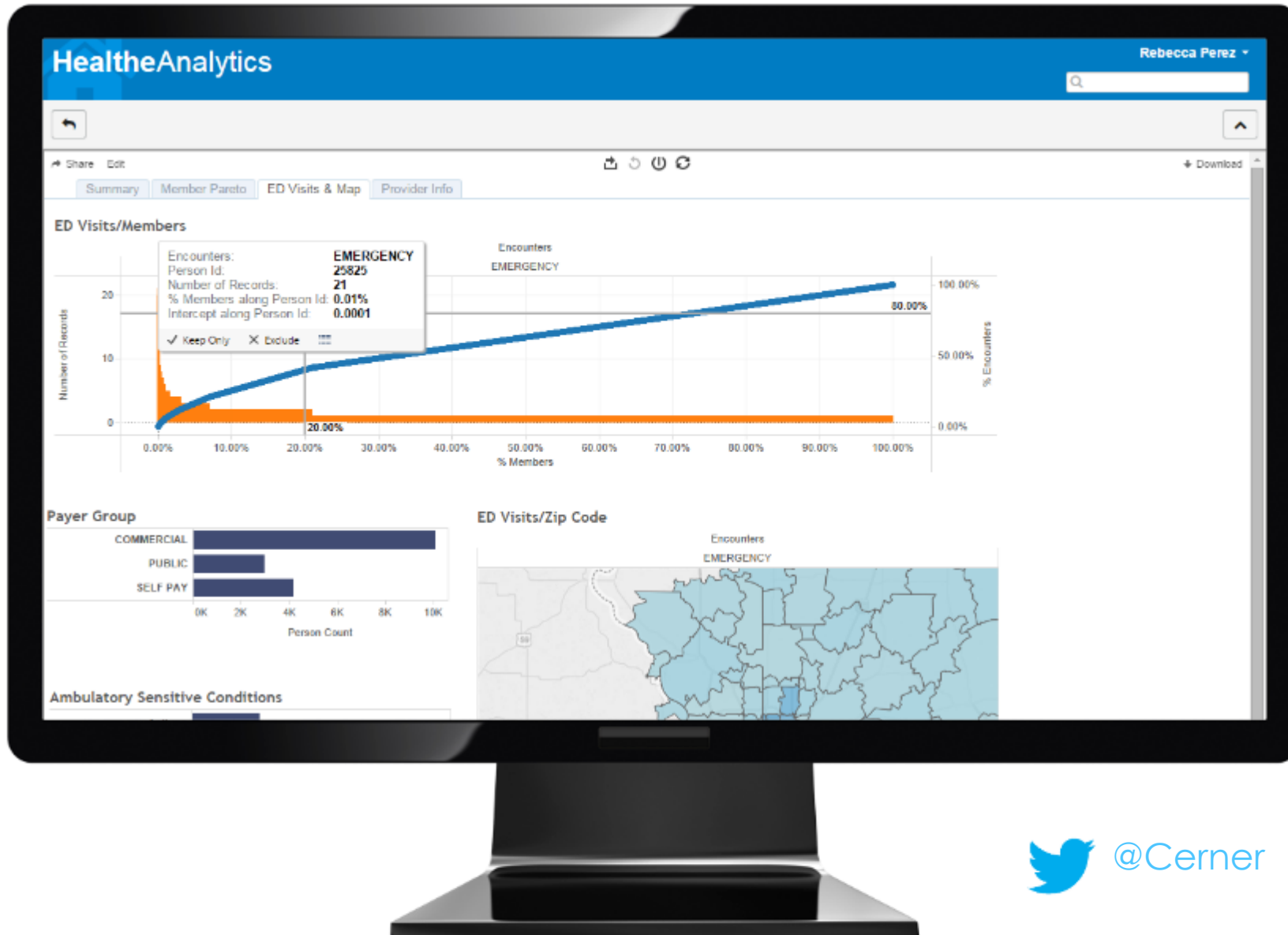
### Allergies

Review Order Document Bill Check Out

# Note sent automatically to Dr. Fortades and the member portal



# Analytics scenario | Rising ED visit rates





## Cost of ED & hospitalizations



## Traditional scenario

\*only 35% of asthmatic children with medical **have controlled asthma** within a one year period

## Cost of two mobile asthma clinics

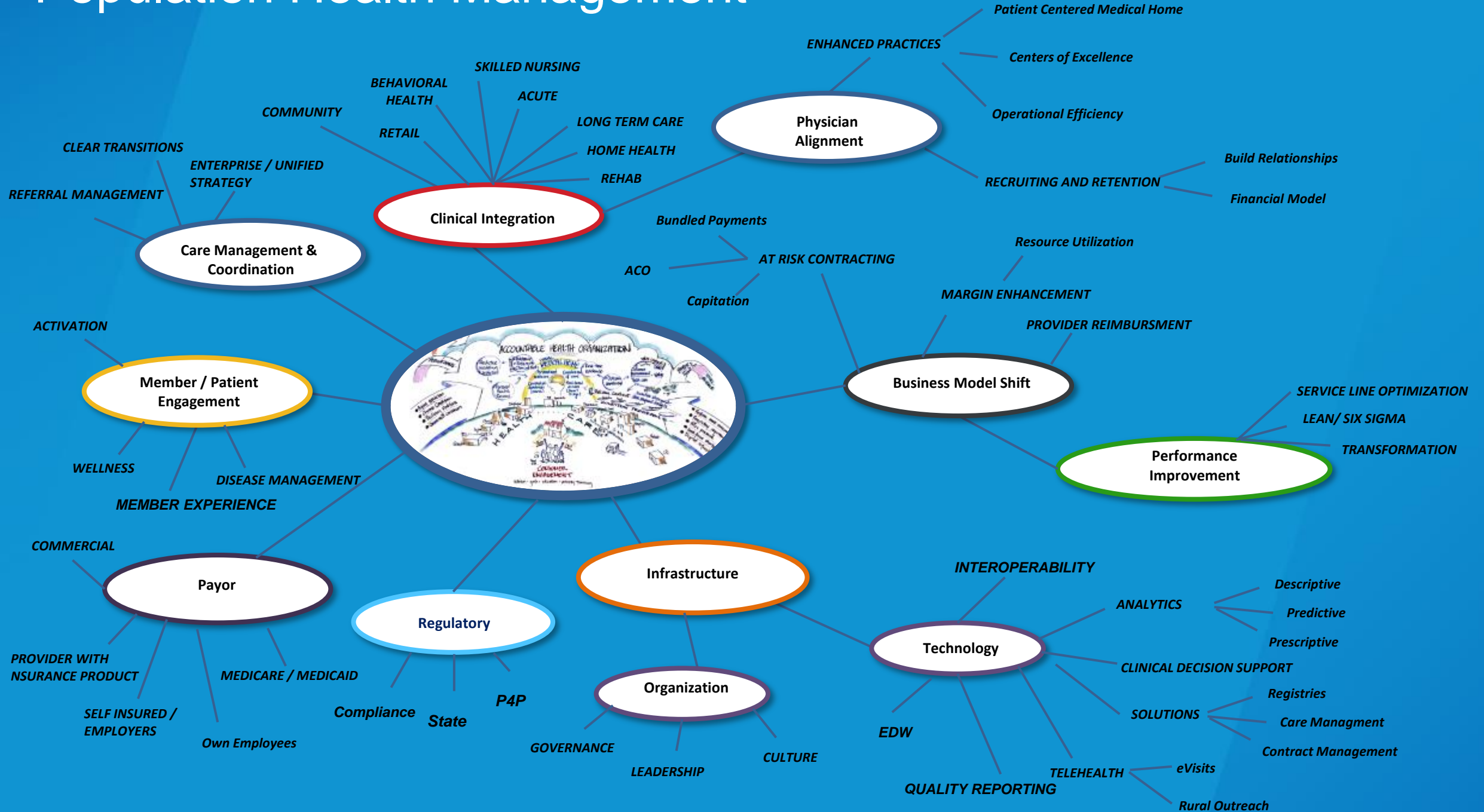


## Breathmobile scenario

\*over 75% of medical patients reach **asthma control** after three visits on the van within a one year period

*\*Financial information based on 1,200 patients being seen per year*

# Population Health Management





***"Direction (not intention) determines destination."***

***"Attention determines direction."***

**Andy Stanley**

together we  
anticipate. innovate. accelerate.

# A Framework for Thinking about Systems Change

	Skills	Incentives	Resources	Action Plan	Confusion
Vision		Incentives	Resources	Action Plan	Anxiety
Vision	Skills		Resources	Action Plan	Resistance
Vision	Skills	Incentives		Action Plan	Frustration
Vision	Skills	Incentives	Resources		False Starts
Vision	Skills	Incentives	Resources	Action Plan	Change

# Strategic Resource Allocation / Utilization

