Collaboration to Improve Population Health, Driven by Comparative Clinical Analytics
AMGA supports its members in enhancing population health and care for patients through integrated systems of care.

Founded in 1949

- 420+ member organizations
- 125,000+ physicians
- Provide health care to more than 130 million patients per year, in 49 states
- Two-thirds of members are integrated delivery systems—up from one-third, 5 years ago
- Average group size is 300 physicians, median 130 physicians
- Patient-centered, team-based care—emphasis on care coordination
- Continuous performance improvement—systems thinkers
- Leadership on EHR and eRx adoption
- Leadership on Accountable Care—emphasis on value, in terms of population health
Parallel AMGA Strategies

- **Advocacy:** Redesign payment system to align incentives around population health
  - Volume → Value
  - ACO → High-Performing Health System definition

- **Support members in redesigning the delivery system to manage population health**
  - Devise strategies for moving from one payment model to another
  - Develop competencies in understanding and managing population health
  - Provide data resources and analytical tools → Humedica partnership
  - Extend AMGA’s model for shared learning → Anceta

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**Comparative Data**

**What to improve**

**Shared Learning**

**How to improve**
Organizations

**AMGA**
American Medical Group Association

**Anceta**
AMGA subsidiary, created to extend AMGA’s model for shared learning, based on comparative clinical analytics

**Humedica**
Anceta’s partner, a next-generation clinical informatics company, based in Boston
Recently became part of OptumInsight

“Data factory” — extract and integrate clinical and administrative data, across the continuum of care
Disease-specific analytic models, including predictive analytics
Clinical analytics solution, Humedica MinedShare®
Where’s the Opportunity?

- 10% of the population consumes 64% of healthcare dollars (blue); 5% consumes 49%

![Percent of Total Health Care Expenditures Incurred by Different Percentiles of U.S. Population](image)


- Hospital admission often represents a failure of ambulatory care
- Typical Medicare patient sees 7 different physicians every year—2 PCPs, 5 specialists
  - Critical need for care coordination
Current care systems cannot do the job. Trying harder will not work. Changing systems of care will.

— Crossing the Quality Chasm
Institute of Medicine, 2001
Anceta Collaborative

- Use data to identify opportunities for improvement and “best” performance
  - Medical groups: Humedica MinedShare®
  - Anceta: provocative analyses
- Learn “the rest of the story” from other medical groups

- Finding “best” performance
  - Current: Incidental observations, clinical intuition
  - Future: Systematic exploration—regression models

- Expanding scope
  - Detailed models for chronic disease
  - All active patients—Adult preventive services, Population management dashboard
  - Adjudicated claims data—all covered services

Once you move away from the push of information to the pull of learning, you liberate creative powers in your people.

— The New Social Learning
Tony Bingham and Marcia Conner
Prevalence of Chronic Conditions

- 20 medical groups, 7.0 million patients, age 18–89, who had an ambulatory visit in 2011 or 2012
- Left: Proportion of patients who fall into each combination of Humedica disease cohorts
- Right: Total ambulatory wRVUs for the patients who fall into each combination of cohorts

Patients by Disease Cohort

- None: 45.5%

Ambulatory Work RVUs by Disease Cohort

- None: 29.3%
Prevalence of Chronic Conditions

- 20 medical groups, 7.0 million patients, age 18–89, who had an ambulatory visit in 2011 or 2012
- Left: Proportion of patients who fall into each combination of Humedica disease cohorts
- Right: Total ambulatory wRVUs for the patients who fall into each combination of cohorts

Patients by Disease Cohort

Ambulatory Work RVUs by Disease Cohort

- CAD: Coronary Artery Disease
- DM: Diabetes
- DYL: Dyslipidemia
- HTN: Hypertension
- COPD: Chr. Obstr. Pulm. Disease
- CHF: Congestive Heart Failure
- PAS: Pediatric Asthma

All combinations involving HTN are colored red
Chronic Conditions – Pct. of Amb. wRVUs

- 20 medical groups, 7.0 million patients, age 18–89, who had an ambulatory visit in 2011 or 2012
- Total ambulatory wRVUs for the patients who fall into each combination of cohorts
- All combinations involving hypertension are colored red

- CAD: Coronary Artery Disease
- DM: Diabetes
- DYL: Dyslipidemia
- HTN: Hypertension
- COPD: Chr. Obstr. Pulm. Disease
- CHF: Congestive Heart Failure
- PAS: Pediatric Asthma
Current Anceta Participants

- Aurora Health Care – Milwaukee, WI
- Baylor Quality Alliance—Dallas, TX
- Billings Clinic – Billings, MT
- Brown & Toland Physicians – San Francisco, CA
- Carilion Clinic – Roanoke, VA
- Carolinas HealthCare System – Charlotte, NC
- Colorado Springs Health Partners – Colorado Springs, CO
- Community Physician Network – Indianapolis, IN
- Cornerstone Health Care – High Point, NC
- DuPage Medical Group – Downers Grove, IL
- The Everett Clinic – Everett, WA
- Florida Medical Clinic – Zephyrhills, FL
- HealthEast – St. Paul, MN
- Henry Ford Health System – Detroit, MI
- Holston Medical Group (Apogee) – Kingsport, TN
- The Iowa Clinic – West Des Moines, IA
- Lahey Clinic – Burlington, MA
- Mayo Clinic Health System – Rochester, MN
- Mercy Health System – St. Louis, MO
- Mid Hudson Medical Group – Fishkill, NY
- Mount Kisco Medical Group – Mount Kisco, NY
- Riverside Health System – Newport News, VA
- Sentara Healthcare – Norfolk, VA
- SwedishAmerican Health System – Rockford, IL
- Wilmington Health – Wilmington, NC
Anceta Interaction

- **In-person meetings**
  - Two dedicated collaborative meetings each year
    - Spring, after AMGA Annual Conference
    - Fall, coordinated with AMGA Institute for Quality Leadership/ACO Summit
  - Dedicated sessions at AMGA Annual Conference

- **Webinars, between meetings**

- **Outreach and consultation by Anceta staff**
  - Assist with data interpretation and supplemental analyses
  - Discover and document best practices

- **Anceta Collaboration Portal**
  - Collaborative materials, reference documents
  - Discussion forum (e-mail)

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**Typical Team for Collaborative Meetings**

- Physician leader with an interest in process redesign
- Operational leader, nurse-manager, or “change agent”
- Quality analyst—how data reflect the process
Humedica’s “Data Factory”

Acquiring
- Extraction across leading EMRs
- Multiple data sources
- Various data types
- Several access methods
- Numerous extraction frequencies

Preparing
- Integrating data, clinical insight, and science
- Mapping
- Validation
- Normalization
- Data Repository

Analyzing
- Building proprietary models, algorithms, and methods
- Predictive modeling
- NLP
- Therapeutic cohort matching
- Benchmarking

Accessing
- Providing usable and actionable SaaS applications

Cost-effective, state-of-the-art technology, coupled with customer engagement on analytics
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Tools for Improving Population Health

**Humedica and AMGA: Areas of Focus**

- Process → outcomes
- Standardized cost
- Best practices
- Shared learning

**Collaboration**

- Population perspective
- Predictive analytics

**Comparative Data**

- Process → outcomes
- Standardized cost

**Risk Identif. and Tracking**

- Systematic “opportunity analysis”
- Exploration (rapid hypothesis testing)

**Patient Registry**

- Patient outreach
- Care coordination

**Provider Performance Reports**

- Focus attention
- Documentation

**EHR w/ CDS**

- Performance reports with comparative data, process/outcome focus
- Predictive analytics—identify potential outliers

**Process Execution**

- Process Improvement

**Pop. Health, Cost Efficiency**

- Selected Patient Population
- Individual Patient

**Organization Performance**

- Real-time
- Retrospective
Risk Stratification

- 10% of the population consumes 64% of healthcare dollars (blue); 5% consumes 49%

![Percent of Total Health Care Expenditures Incurred by Different Percentiles of U.S. Population](chart)

- Hospital admission often represents a failure of ambulatory care
- Typical Medicare patient sees 7 different physicians every year—2 PCPs, 5 specialists
  - Critical need for care coordination

Humedica MinedShare® – Predictive Analytics

Create, View, and Edit Graphs

Patients at Risk of CHF-Related Hospitalization w/in Next 6 Months, by Clinic

Most Frequent Site of Care (Last 24 Months of Data):
1892581420

Likelihood of CHF-related Hospitalization within 6 months following end of data Categorized (End of Data Category):
90-94 (Most)

Number of Patients: 103

8.4% = 103 Number of Patients in this Likelihood of CHF-related Hospitalization within 6 months following end of data Categorized (End of Data Category) and Most Frequent Site of Care (Last 24 Months of Data) Category. / 1224 Total number in all Likelihood of CHF-related Hospitalization within 6 months following end of data Categorized (End of Data Categories)

Click on data in the graph above or in the Data table to view the corresponding patient list below.

103 records returned
CHF-Related Admissions and ED Visits

**Patients**

- 4.2% of CHF pts.
- 18% of pts. w/ CHF-related hosp. admit or ED visit in next 6 mos.
- Lift = 4.2

**Admissions + ED Visits**

- 4.2% of CHF pts.
- 24% of CHF-related hosp. admits and ED visits in next 6 mos.
- Lift = 5.7

*Number of admissions + ED visits per patient*

**Percentile Band**

- Number of Patients with CHF-Related Admissions or ED Visits

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<th>Patients</th>
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<td>8</td>
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*Number of admissions + ED visits in next 6 mos.*

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<th>Number</th>
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Humedica MinedShare® – Dashboard

Current Measure Status

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<tr>
<th>Measure</th>
<th># of Pts</th>
<th>Result</th>
<th>Target</th>
<th>Comparator</th>
<th>% vs. Target</th>
<th>Last 12 Mos.</th>
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<td>Pt/s w/ 1 or more A1c tests</td>
<td>15,542</td>
<td>63.6%</td>
<td>65%</td>
<td>64.4%</td>
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<tr>
<td><strong>Pts in Control (Last A1c &lt; 7%)</strong></td>
<td>9,880</td>
<td>57.1%</td>
<td>80%</td>
<td>51.9%</td>
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<td>Pts in Control (Last A1c &lt; 8%)</td>
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<td>50.4%</td>
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<td><strong>Pts in Control (Last LDL &lt; 100 mg/dl)</strong></td>
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<td><strong>SBP and DBP</strong></td>
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<td>Pt/s w/ 1 or more SBP &amp; DBP tests</td>
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<td>78.7%</td>
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<td>Pts in Control (SBP/DBP &lt; 130/80 mmHg)</td>
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<td>50%</td>
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Combined

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<th>% vs. Target</th>
<th>Last 12 Mos.</th>
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<td>53%</td>
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<td></td>
</tr>
<tr>
<td>Pts at High Risk: Any Metric</td>
<td>8,242</td>
<td>21.5%</td>
<td>25%</td>
<td>25.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pts at High Risk: All Metrics</td>
<td>8,242</td>
<td>0%</td>
<td>0.1%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Resource Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th># of Pts</th>
<th>Result</th>
<th>Target</th>
<th>Comparator</th>
<th>% vs. Target</th>
<th>Last 12 Mos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean # of Any Amb Visits</td>
<td>15,542</td>
<td>9.8</td>
<td>7</td>
<td>7.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # of BMI Visits</td>
<td>15,542</td>
<td>6.5</td>
<td>5</td>
<td>4.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # of Amb Work/Visits</td>
<td>15,542</td>
<td>18.5%</td>
<td>10</td>
<td>10.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # of Level 4/5 E&amp;M Visits</td>
<td>13,352</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # of Non-Medic Level E&amp;M Visits</td>
<td>11,001</td>
<td>0.8</td>
<td>0.5</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Costly DM Amb Rx Ratio</strong></td>
<td>9,537</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pts w/ 1 or more ED/ER Visits</td>
<td>15,542</td>
<td>15.8%</td>
<td>14%</td>
<td>14.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # of ED/ER Visits/1000 DM Pts</td>
<td>15,542</td>
<td>261</td>
<td>300</td>
<td>260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pts w/ 1 or more IP Visits</td>
<td>15,542</td>
<td>11.9%</td>
<td>12%</td>
<td>11.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean # of IP Visits/1000 DM Pts</strong></td>
<td>15,542</td>
<td>194</td>
<td>75</td>
<td>194</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Inpatient LOS</td>
<td>1,842</td>
<td>8.8</td>
<td>8</td>
<td>9.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Pts w/ ICU/CCU Stay</td>
<td>1,842</td>
<td>27%</td>
<td>26%</td>
<td>26.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean ICU/CCU LOS</td>
<td>1,842</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate of Pts w/ 7-day Readmission</td>
<td>1,842</td>
<td>8.5%</td>
<td>7.5%</td>
<td>7.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rate of Pts w/ 30-day Readmission</strong></td>
<td>1,842</td>
<td>18%</td>
<td>15%</td>
<td>17.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Humedica MinedShare® – Typical Query

Even relatively complex clinical questions can be answered by point-and-click queries, since Humedica’s disease models include variables that support typical clinical questions, including relevant lab values, clinical observations (BP, BMI), medication classes and subclasses, and resource measures for ambulatory care.

Typical Humedica MinedShare display. Medical groups can see which medications their physicians are prescribing for glycemic control in any subgroup of patients with diabetes, in this case type 2 diabetes, HbA1c > 9.0, and at least three E&M visits in the past 24 months. The green bars show the group’s own prescribing patterns, and the black line shows comparative data for similar patients of other medical groups participating in the Anceta Collaborative Data Warehouse. This group is using DPP-4 inhibitors (orange arrows) in more patients and insulin (blue arrows) in fewer patients, compared to other groups.
Type 2 Diabetes: First Drug after Metformin

- Patients with type 2 diabetes
- At least 2 E&M visits in each of 2 successive years
- At least 14 months on metformin (only)...
  - Change in therapy
  - Continue metformin through end of data
- Choice of second drug, by A1c
  - Last A1c prior to change in therapy
  - Last A1c, if continuing on metformin
- By medical group

- All groups achieved similar improvement in glycemic control
  - Overall (by initial A1c)
  - By major subgroups—age, comorbidities, sociodemographic factors, “engagement” with medical group (visit frequency)
Break Out ΔRx Cohort by Drug Class

- Proportion of patients at each initial A1c level receiving each drug class or combination
  - All eRx activity within 30 days of ΔRx
- Overall, a “graded response” to initial A1c level

<table>
<thead>
<tr>
<th>A1c Level</th>
<th>Sulfonylurea</th>
<th>Sulf + Insulin</th>
<th>Other</th>
<th>DPP-4 Inhibitor</th>
<th>GLP-1</th>
<th>TZD</th>
<th>Sulf + TZD</th>
<th>Continue Metformin</th>
</tr>
</thead>
<tbody>
<tr>
<td>7–8%</td>
<td>3.4%</td>
<td>3.6%</td>
<td>17.3%</td>
<td>5.8%</td>
<td>9.7%</td>
<td>53.9%</td>
<td>39.0%</td>
<td>24.6%</td>
</tr>
<tr>
<td>8–9%</td>
<td>3.8%</td>
<td>3.6%</td>
<td>17.5%</td>
<td>5.8%</td>
<td>6.8%</td>
<td>53.9%</td>
<td>39.0%</td>
<td>24.6%</td>
</tr>
<tr>
<td>9–10%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>16.2%</td>
<td>11.1%</td>
<td>6.3%</td>
<td>53.9%</td>
<td>39.0%</td>
<td>24.6%</td>
</tr>
<tr>
<td>10–11%</td>
<td>5.9%</td>
<td>5.9%</td>
<td>12.8%</td>
<td>18.6%</td>
<td>3.3%</td>
<td>49.9%</td>
<td>44.4%</td>
<td>4.4%</td>
</tr>
<tr>
<td>&gt; 11%</td>
<td>5.9%</td>
<td>5.9%</td>
<td>10.3%</td>
<td>23.8%</td>
<td>4.4%</td>
<td>44.4%</td>
<td>44.4%</td>
<td>4.4%</td>
</tr>
</tbody>
</table>
Prescribing Patterns Vary across Medical Groups

- Wide variation across groups in use of insulin, DPP-4 inhibitors, TZDs, and GLP-1 agonists
  - DPP-4i’s cost approximately $2,500 per year
- All groups achieved similar improvement in glycemic control

Medical groups identified by two-letter codes

Continue Metformin

Sulfonylurea

Sulf + Insulin

Insulin

DPP-4 Inhibitor

GLP-1

Sulf + TZD

TZD

Other
Prescribing Patterns Vary across Medical Groups

- Breaking out each group’s prescribing by initial A1c, there is a “graded” response within many groups, but the drug choices vary across groups.
- For each group, five bars, by initial A1c: 7–8%, 8–9%, 9–10%, 10–11%, ≥ 11%
Prevalence of Comorbidities

- Wide variation across medical groups in the proportion of active patients age 20–85 who have these chronic conditions
  - Important to account for these differences, in order to obtain valid, apples-to-apples comparisons
- Currently developing multiple regression models to adjust for differences in comorbidities and sociodemographic factors
Among patients with diabetes, there is a three-fold variation across groups in the prevalence of COPD and a four-fold variation in the prevalence of heart failure.

Among these patients, the prevalence of hypertension varies from 53 to 86%, dyslipidemia from 59 to 85%.

While high and low prevalence tends to be concentrated in certain groups, there are some differences across these conditions.
Level of Education

- Distribution of patients by level of education in zip code of residence: Percent of persons age ≥ 25 with some high school
  - These data reflect 1.7 million patients with hypertension across 20 medical groups who had an E&M visit between Dec. 1, 2010 and Nov. 30, 2012
  - Variation across medical groups in presumptive level of health literacy, based on imputed education level
- In three medical groups, approximately one-fourth of patients fall below the 10th percentile of the overall patient population

Box and whisker plots:
- Vertical box spans middle half of each medical group’s patient population (interquartile range, 25th – 75th percentile).
- Yellow bar indicates median (50th percentile).
Rural–Urban Distribution

- Medical groups differ in the proportion of their patients who come from non-metropolitan zip codes
- 6.95 million patients, across 20 medical groups, with ambulatory E&M or Procedure visit during 2011 or 2012
  - Omits patients with zip codes that do not map to current RUCA tables
Type 2 Diabetes: BMI by Age

- 21 medical groups — 389,000 patients with type 2 diabetes, age 20–89
- E&M visit during 2012 and BMI recorded
- Bars represent 5-year age bands

BMI

- ≥ 40: Obesity – Class 3
- 35 – 40: Obesity – Class 2
- 30 – 35: Obesity – Class 1
- 25 – 30: Overweight
- 18.5 – 25: Normal weight
- < 18.5: Underweight
Type 2 Diabetes: BMI by Age

- 21 medical groups — 389,000 patients with type 2 diabetes, age 20–89
- E&M visit during 2012 and BMI recorded
- Within each medical group, bars represent 5-year age bands

BMI

- ≥ 40: Obesity – Class 3
- 35 – 40: Obesity – Class 2
- 30 – 35: Obesity – Class 1
- 25 – 30: Overweight
- 18.5 – 25: Normal weight
- < 18.5: Underweight
Depression in Diabetes

- 21 medical groups — 566,000 patients in Humedica diabetes cohort, age 20–89, with E&M visit during 2012
- Diabetes type 1, type 2, type unknown: Dx or Rx for depression in year prior to last E&M visit
- Within each medical group, bars represent 5-year age bands
Evidence for Diabetes

- 21 medical groups — 510,000 patients in Humedica diabetes cohort, age 20–89, with E&M visit during 2012
- Across all groups, about 12% of patients with diabetes do not have a Dx on a claim or an EHR problem list entry
Performance over Time: Following a patient cohort over 3 years

- **Diabetes Cohort**
- **Type 1, Type 2, Unknown**
- **E&M visit Dec 2009 – Nov 2010 (year = 2010)**
- **At least one E&M visit in each of the next 2 years (2011, 2012)**
- **D3 Bundle:**
  - A1c < 8, LDL < 100, BP < 140/90
  - Last values in each year

---

**Graphs:**

1. **Patients**
   - Bar graph showing patient distribution across different years.

2. **D3 Bundle**
   - Bar graph showing the percentage of patients in control, not in control, and empty categories for each year from 2010 to 2013.
Visit Counts, by Patient Complexity

Patients with HTN, Age 18–85, E&M Visit 1/1/2012 – 7/31/2012, Patients of “Designated” Providers

Designated providers are those specified by the medical group whose patients are included on enterprise dashboard displays in Humedica MinedShare, generally providers associated with a “designed” primary care practice (e.g., a patient-centered medical home initiative).
Uses of Regression Models

Who’s getting the best outcomes, after accounting for differences in patient populations?

First, account for patient factors:
- Age, gender, race/ethnicity
- Comorbid conditions
  - Overall disease burden
  - Specific diagnoses
  - Clinical data (e.g., eGFR, A1c, BP, BMI)
  - Smoking status
- Financial class (patient-specific)
- Imputed sociodemographic data (zip code)
  - Education, household income
  - Rural/urban

Then examine medical group effects—who’s doing best, on similar patients?
- Interview the “best” groups to learn what they’re doing for these patients, and
- Use logistic regression to identify which care process factors are more associated with the group(s) who are doing best

What’s different about patients with good outcomes, compared to those with poor outcomes?
- Patient factors
- Process of care

Logistic regression – binary outcome
- Patient in control vs. out of control (last E&M)
- Patient moves into vs. out of control
- Patient has complete measures vs. not

What patient factors and which care process elements are associated with favorable outcomes or lower cost?
- Start with patient factors
- What care process elements have additional explanatory power?
Hypertension Campaign Goal: 80% of Patients at Goal BP According to JNC 7

Process Planks for Achieving Goal

**PRIMARY PROCESS PLANKS**

- Direct Care Staff Trained in Accurate BP Measurement
- Hypertension Guideline Used and Adherence Monitored
- BP Addressed for Every Hypertension Patient, Every Primary Care Visit
- All Patients Not at Goal and with New Rx Seen within 30 days
- Prevention, Engagement, and Self-Management Program in Place

**VALUE-ADD PROCESS PLANKS**

- Registry Used to Identify and Track Hypertension Patients
- All Team Members Trained in Importance of BP Goals
- All Specialties Intervene with Patients Not in Control
Blood Pressure Recording

Last BP for Patients Age 18–85 with E&M Visit 1/1/2012–7/31/2012, “Designated” Providers

Designated providers are those specified by the medical group whose patients are included on enterprise dashboard displays in Humedica MinedShare, generally providers associated with a “designed” primary care practice (e.g., a patient-centered medical home initiative) and identified as the patient’s Current PCP in the EHR or practice management system or who provided the plurality of E&M services during the last full calendar year prior to the last E&M visit. (n = 309,000)
Blood Pressure Recording

Last BP for Patients Age 18–85 with E&M Visit 1/1/2012 – 7/31/2012, “Designated” Providers

Designated providers are those specified by the medical group whose patients are included on enterprise dashboard displays in Humedica MinedShare, generally providers associated with a “designed” primary care practice (e.g., a patient-centered medical home initiative) and identified as the patient’s Current PCP in the EHR or practice management system or who provided the plurality of E&M services during the last full calendar year prior to the last E&M visit. (n = 309,000)
- JNC 7 recommendations:
  - Patients with diabetes or chronic kidney disease, BP < 130/80
  - All other patients, BP < 140/90
BP Control at Last E&M Visit: Complicated Patients

- Evidence of diabetes or chronic kidney disease (Dx/PL, lab, or meds): control threshold 130/80
- 488,000 patients with Dx/PL or BP evidence of hypertension and at least one E&M visit, 9/1/2011 – 8/31/2012
- All providers, 19 medical groups

<table>
<thead>
<tr>
<th></th>
<th>BA</th>
<th>BY</th>
<th>CB</th>
<th>DA</th>
<th>DQ</th>
<th>EW</th>
<th>GB</th>
<th>HV</th>
<th>KT</th>
<th>LA</th>
<th>MB</th>
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<th>VB</th>
<th>WD</th>
<th>YQ</th>
<th>ZW</th>
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<td>In Control</td>
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<td>42%</td>
<td>42%</td>
<td>39%</td>
<td>44%</td>
<td>34%</td>
<td>33%</td>
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<tr>
<td>Not In Control</td>
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<td>48%</td>
<td>46%</td>
<td>56%</td>
<td>59%</td>
<td>69%</td>
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<td>Missing BP</td>
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<td>3%</td>
<td>5%</td>
<td>3%</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>

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HTN Control – Variation within a Medical Group

- Patients in hypertension cohort with at least one E&M visit between 12/01/2011-11/30/2012
- All family medicine or internal medicine sites of care with over 500 hypertension patients
- HTN control among patients with BP measured at last E&M visit
  - Evidence of diabetes or chronic kidney disease (Dx/PL, lab, or meds): BP < 130/80
  - All other patients: BP < 140/90
Typical Collaborative Meeting Topics

- Techniques for breakthrough improvement
  - Complexity theory

- Hypertension
  - Plank-by-plank dialogue
  - Presentations by groups with superior outcomes and costs
  - Exercise: Comparative data → Action plan

- Diabetes
  - Cost of medications for glycemic control
  - Reducing proportion of patients with incomplete measures

- “PCMH 2.0”
  - Staffing models
  - Which elements drive the value?
  - Can we do it more efficiently?

- Ambulatory intensive care
  - Risk stratification: Whom to target? When?
  - What disciplines/services are key?
  - How does it integrate with the rest of the system?