Maximizing Integration of clinical pharmacist in Chronic Disease Management VA model v1
Right Care Initiative Presentation March 4, 2013
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Pharmacy Benefits Management Services (119)
Department of Veterans Affairs
• Focus on Cardiovascular outcomes to align with Right Care and San Diego Goals preventing strokes and heart attacks.
• Overview of VA Medical Home initiative known as Patient Aligned Care Teams (PACT), implementations and progress.
• VA initiative to utilize Clinical Pharmacist at the top of their license to Manage Chronic Disease.
• Lesson learned and challenges that can be applied broadly external to the VA.
• Group Challenge on how some of the concepts presented can be applied to the Right Care initiative.
## VA HEDIS Scores

<table>
<thead>
<tr>
<th>Clinical Indicator</th>
<th>VA Average Percent</th>
<th>HEDIS 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012 (6)</td>
<td>2011 (6)</td>
</tr>
<tr>
<td>Breast Cancer Screening</td>
<td>87</td>
<td>85</td>
</tr>
<tr>
<td>Cervical Cancer Screening</td>
<td>93</td>
<td>93</td>
</tr>
<tr>
<td>Cholesterol Management for Patients with Cardiovascular Conditions: LDL-C Control (&lt;100 mg/dL)</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td>Colorectal Cancer Screening</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Cholesterol Management for Patients with Cardiovascular Conditions: LDL-C Screening</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - Blood Pressure Control (&lt;140/90)</td>
<td>80</td>
<td>81</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - Eye Exams</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - HbA1c Testing</td>
<td>98</td>
<td>99</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - LDL-C Controlled (LDL-C&lt;100 mg/dL)</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - LDL-C Screening</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - Medical Attention for Nephropathy</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Comprehensive Diabetes Care - Poor HbA1c Control (8)</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Controlling High Blood Pressure - Total</td>
<td>77</td>
<td>78</td>
</tr>
<tr>
<td>Medical Assistance with Smoking Cessation - Advising Smokers To Quit 3</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>Medical Assistance with Smoking Cessation - Discussing Medications 3</td>
<td>94</td>
<td>94</td>
</tr>
<tr>
<td>Medical Assistance with Smoking Cessation - Discussing Strategies 3</td>
<td>96</td>
<td>97</td>
</tr>
<tr>
<td>Flu Shots for Adults (50-64) 3</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Flu Shots for Adults (65 and older) 3, 4, 5</td>
<td>76</td>
<td>79</td>
</tr>
<tr>
<td>Immunizations: Pneumococcal 3,4, 5</td>
<td>93</td>
<td>94</td>
</tr>
</tbody>
</table>

SOURCE: Office of Analytics and Business Intelligence Updated 11/28/2012 HMO NCQA comparator Data used
Describe the VA Version of the Medical Home Model = Patient Aligned Care Teams (PACT)
Other Team Members
Clinical Pharmacy Specialist: ± 3 panels
Clinical Pharmacy anticoagulation: ± 5 panels
Social Work: ± 2 panels
Nutrition: ± 5 panels
Case Managers
Trainees
Integrated Behavioral Health
Psychologist ± 3 panels
Social Worker ± 5 panels
Care Manager ± 5 panels
Psychiatrist ± 10 panels

Patient Caregiver

Other Team Members

Teamlet: assigned to 1 panel (±1200 patients)

• Provider: 1 FTE
• RN Care Mgr: 1 FTE
• Clinical Associate (LPN, MA, or Health Tech): 1 FTE
• Clerk: 1 FTE

For each parent facility
Health Promotion Disease Prevention Program Manager: 1 FTE
Health Behavior Coordinator: 1 FTE
My Health eVet Coordinator: 1 FTE

The Patient’s Primary Care Team
Changes in Primary Care

<table>
<thead>
<tr>
<th>Past Old Model</th>
<th>PACT (Patient Aligned Care Team)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient has one provider</td>
<td>The patient has a team</td>
</tr>
<tr>
<td>Care delivered only by provider</td>
<td>Care delivered by team members</td>
</tr>
<tr>
<td>Focus on visits</td>
<td>Focus on overall health</td>
</tr>
<tr>
<td>Most care delivered by visits</td>
<td>New care delivery routes and tools</td>
</tr>
<tr>
<td>Virtual visits uncommon</td>
<td>Phone, telehealth visits, secure messaging common</td>
</tr>
<tr>
<td>Continuity inconsistent</td>
<td>Continuity consistent</td>
</tr>
<tr>
<td>High risk patients get routine care</td>
<td>Identify and manage high risk patients</td>
</tr>
<tr>
<td>Hospitalizations common</td>
<td>Hospitalizations less frequent</td>
</tr>
<tr>
<td>Care not well coordinated</td>
<td>Care coordinated throughout the system</td>
</tr>
<tr>
<td>Prevention not stressed</td>
<td>Prevention and health promotion essential</td>
</tr>
</tbody>
</table>
Measurement – Can We Measure Improvement

- **PACT Compass**
  - Panel Management
  - Continuity
  - Access
  - Coordination
  - Engagement and Satisfaction
- **Patient Satisfaction**
  - CAHPS Patient Centered Medical Home Survey
- **Primary Care Almanac**
  - Diabetes
  - Hypertension
  - Congestive Heart Failure
- **Clinical Performance Measures**
  - Prevention
  - Chronic Disease Management
- **Employee Satisfaction surveys**
- **PACT Recognition Survey**
- **PACT Personnel Survey**
- **Home Builder Scores**
Improvements in Home Builder Domains

- **Pt Centered Care & Communication**: Oct-09 56%, Jul-11 68%
- **Organization of Practice**: Oct-09 66%, Jul-11 76%
- **Use of Technology**: Oct-09 72%, Jul-11 80%
- **Quality & Performance Improvement**: Oct-09 69%, Jul-11 83%

**VHA Average**
- Oct-09 69%
- Jul-11 80%

Ref: American College of Physicians Medical Home Builder
National Changes since PACT Implementation (July 2010-July 2012)

<table>
<thead>
<tr>
<th>Category</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care Uniques</td>
<td>↑ 7%</td>
</tr>
<tr>
<td>PACT Provider Staff</td>
<td>↑ 2%</td>
</tr>
<tr>
<td>PACT Support Staff</td>
<td>↑ 29%</td>
</tr>
<tr>
<td>Average Panel Size</td>
<td>↑ 4%</td>
</tr>
<tr>
<td>Primary Care Capacity</td>
<td>↑ 5%</td>
</tr>
<tr>
<td>PACT Encounters per 1000 unique patients</td>
<td>↑ 38%</td>
</tr>
<tr>
<td>Continuity</td>
<td>↑ 3%</td>
</tr>
<tr>
<td>VHA Acute Admissions per 1000 unique PC patients</td>
<td>↓ 6%</td>
</tr>
<tr>
<td>VHA ED Visits per 1000 unique PC patients</td>
<td>↑ 6%</td>
</tr>
<tr>
<td>VHA Urgent Care Visits per 1000 unique PC patients</td>
<td>↓ 20%</td>
</tr>
<tr>
<td>PACT patients enrolled in Home Telehealth</td>
<td>↑ 65%</td>
</tr>
<tr>
<td>PACT Group Visits</td>
<td>↑ 53%</td>
</tr>
<tr>
<td>PACT Telephone Visits</td>
<td>↑ 927%</td>
</tr>
<tr>
<td>PACT patients seen on desired date</td>
<td>↑ 8%</td>
</tr>
<tr>
<td>PACT patients seen within 7 days of desired date</td>
<td>↑ 5%</td>
</tr>
<tr>
<td>3rd Next Available Appointment in PACT clinics</td>
<td>↓ 13%</td>
</tr>
<tr>
<td>Same day appointments with PCP</td>
<td>↑ 35%</td>
</tr>
<tr>
<td>Patients contacted within 2 days after discharge</td>
<td>↑ 847%</td>
</tr>
</tbody>
</table>
PACT Implementation Dashboard – 7 metrics

- V01*
- V03*
- V05*
- V07*
- V09
- V11*
- V15*
- V17*
- V19*
- V21
- V23*

Legend:
- Blue: HT Enrollment
- Light Blue: Staffing Ratio
- Turquoise: Telephone Encounters
- Light Green: Seen within 7 Day of DD
- Green: Same Day Appts with PCP
- Black: Continuity
- Dark Blue: 2-Day Post Discharge Contact

* Meets FY12 Performance Measure
Dashboard Metric Penetration

- All Divisions: 927
- Score ≥ 10 on Dashboard: 509
- Met all 7 metrics: 150
- Met all 5 Performance Measures: 24
PACT Workload Trends

Encounters

Millions

Total Secure Messages (In+Out)

Face to Face

Group

Telephone

July 2010
July 2011
July 2012

PACT Recognition,
Summer 2011:
PC encounters per year

Performance Quintile

Better performance

VETERANS HEALTH ADMINISTRATION
Urgent/Emergent Care

PACT Recognition, Summer 2011: ER/Urgent Care visits per 1000 unique PC patients

Represents 21,802 additional visits

Better Performance

Performance Quintile
Admission Rates

VHA Acute Admissions per 1000 unique PC patients

Represents avoidance of 36,279 admissions

PACT Recognition, Summer 2011: Acute Admissions per 1000 unique PC patients

47%

Performance Quintile
PACT Recognition, Summer 2011

Staffing Ratio

Recognition Performance Quintile

- Better Performance

- Staffing Ratio

- 1 2 3 4 5

Burnout

- Fully staffed
- Not fully staffed

Mean Job Satisfaction

- 4
- 3.5
- 3
Training Status, August 2012

Primary Care Teams
N=7871

- Untrained
- Learning Center
- Collaborative
Effect of Training on PACT Metrics

- **Untrained**
- **Learning Center**
- **Collaborative**

- **PACT Survey Score**
- **Phone Util**
- **Same-day Access**
- **2-d post-d/c**
- **Continuity**

- **ED/Urgent Care Utilization Rate**
- **Admission Rate**
- **PACT Recognition**
PACT Training, Burnout and Job Satisfaction

- **Training not avail/Not involved** (14% of respondents)
- **Somewhat or very helpful** (66% of respondents)
More than half my time is spent each week on work that could be done by someone with less training.
SPECIALTY PACTS

- HOME BASED PRIMARY CARE (HBPC)
- HIV
- SPINAL CORD INJURY
- WOMEN’S HEALTH
- GERIATRICS
- HOMELESS
VA initiative to utilize Clinical Pharmacist at the top of their license to Manage Chronic Disease.
Clinical Pharmacy Model Vision: Bridging the Gap Between Primary Care and Specialty Care

Reference: A. Morreale June 2011
# Clinical Performance Dashboards

## Patient Populations

<table>
<thead>
<tr>
<th>Disease</th>
<th>Patients</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>4,829</td>
<td>Definitions</td>
</tr>
<tr>
<td>Ischemic Heart Disease</td>
<td>2,514</td>
<td>Definitions</td>
</tr>
<tr>
<td>Hypertension</td>
<td>8,532</td>
<td>Definitions</td>
</tr>
</tbody>
</table>

## Patients Requiring Followup

<table>
<thead>
<tr>
<th>Followup Criteria</th>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upcoming Appointments</td>
<td>Patient</td>
</tr>
<tr>
<td>Entire Panel</td>
<td>Patient</td>
</tr>
<tr>
<td>PACT Look-Up</td>
<td>Patient</td>
</tr>
<tr>
<td>Distance from Medical Center</td>
<td>Patient</td>
</tr>
</tbody>
</table>

## Indicator Key

<table>
<thead>
<tr>
<th>Indicator Type</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Target</td>
<td><img src="#" alt="Green" /></td>
</tr>
<tr>
<td>Slightly Off Target</td>
<td><img src="#" alt="Yellow" /></td>
</tr>
<tr>
<td>Off Target</td>
<td><img src="#" alt="Red" /></td>
</tr>
</tbody>
</table>

## FY11 Performance Measures - DM and IHD

<table>
<thead>
<tr>
<th>Measure Description</th>
<th>Actual</th>
<th>Target</th>
<th>Not Met</th>
<th>No Measure</th>
<th>Trends</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Mellitus (Composite)</td>
<td>88%</td>
<td>88%</td>
<td><img src="#" alt="Green" /></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes-Outpt-HBA1C Measured Annually</td>
<td>96.8%</td>
<td>96%</td>
<td><img src="#" alt="Green" /></td>
<td>154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Outpt and HBA1C &gt; 9 (lower is better)</td>
<td>19.5%</td>
<td>19%</td>
<td><img src="#" alt="Yellow" /></td>
<td>790</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Diabetes Outpt LDL Measured Annually</td>
<td>95.9%</td>
<td>96%</td>
<td><img src="#" alt="Yellow" /></td>
<td>198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Outpt and LDL&lt;100</td>
<td>73.1%</td>
<td>75%</td>
<td><img src="#" alt="Yellow" /></td>
<td>1,101</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td>Diabetes and BP &lt; 140/90</td>
<td>79.5%</td>
<td>78%</td>
<td><img src="#" alt="Green" /></td>
<td>894</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>Diabetes Outpt and Timely Retinal Exam</td>
<td>99.8%</td>
<td>99%</td>
<td><img src="#" alt="Green" /></td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Outpt and Renal Function Testing</td>
<td>90.2%</td>
<td>92%</td>
<td><img src="#" alt="Yellow" /></td>
<td>473</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ischemic-Heart-Disease</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IHD - Outpt LDL Measured Annually</td>
<td>94.9%</td>
<td>92%</td>
<td><img src="#" alt="Green" /></td>
<td>128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IHD - Patients with LDL &lt; 100</td>
<td>74.2%</td>
<td>69%</td>
<td><img src="#" alt="Green" /></td>
<td>521</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td>Hypertension and BP &lt; 140/90</td>
<td>77.3%</td>
<td>72%</td>
<td><img src="#" alt="Green" /></td>
<td>1,789</td>
<td>152</td>
<td></td>
</tr>
</tbody>
</table>
Knowing Our Baseline

- VA had a robust clinical pharmacy program across the country but we no means to describe it.
  - How many and what types of Pharmacists and Technicians did we have?
  - What sites have strong programs and which sites had opportunities for improvement?
  - What clinical pharmacy metrics can be used to characterize sites?
  - How many clinical pharmacists do we have and in what settings do they work in?
  - How many patients do they see and how many interventions or visits do they perform?
Baseline (cont)

• Under VA Policy Pharmacists can have a Scope of Practice (SOP) with prescriptive privileges. What did we know about that?
  – How many pharmacists have a SOP in the VA?
  – What clinical areas are most commonly covered?
  – What areas are innovative and unique?
  – What standards are in place to ensure consistency in the SOP process?
  – How are evaluations performed of the clinical pharmacy specialist and the clinical outcomes tracked?
National Clinical Pharmacy SharePoint Site

• New Clinical Pharmacy SharePoint Site has been created

• Started populating with Medical Home and currently working on all other specialty areas like Hep C, HBPC, oncology, nephrology, etc.

• Content for over 50 job areas includes:
  – Business plans / staffing justifications
  – Peer review examples
  – Competencies
  – Scope of practice
  – Literature sources
  – Functional statements and performance statements
  – Research and Quality improvement project ideas
  – Staffing calculators
  – Data collection sources
  – Contacts and SharePoint Managers
  – Links to useful sites such as VACO library, Workload Capture, VHA tools
Create a Uniform System for Scope of Practice

• Develop field guidance on Scope of Practice (SOP)
• Create a uniform system for Scope of Practice
• Outline routine pharmacist activities that do and **do not** need a SOP
• Revise VHA Directive 2008-043 Scope of Practice for clarity
• Quantify how many clinical pharmacists in the VA have a SOP
• Assure impact of SOP are adequately reflected in pharmacist qualification standards
• Define differences between a Clinical Pharmacist and CPS
• Review standardization of Scope of Practice and Competency for incorporation into Pharmacist Qualification Standards
Guidance on Implementation of Patient Aligned Care Teams (PACT)

- Created SharePoint Site and national email group to share ideas
- Created Pharmacy Business Rules for sites to follow
- Advisory Members have participate in numerous VISN PBM conferences and meetings, as well as regional collaboratives, to describe the role of the CPS in PACT
- Tracked new FTEE that Pharmacy Services have received across the VA to support PACT
- Conducted Consultation Team Training for Primary Care Services
- Participating in development of a national handbook on PACT
Pharmacy Business Rules for PACT

- Overall Principles
  - Alignment
  - Referrals
  - Communication
  - Access to CPS
  - Scope of Practice

- Clinic Schedules
  - Established core schedule
  - Open Access
  - Face-to-face
  - Telehealth

- Clinic Support
  - Pharmacy Service to manage and assure cross coverage
  - Ancillary Support

- Trainees
  - Residents and Students Assigned to Teams
  - PACT Pharmacist responsibility

Reference: VA PACT Business Rules v2 February 2012
Educational Programming for Leaders: Boot Camps

- Educated all levels of leadership on our transformational plans at National Meeting in Denver.
- Over 400 participants focused heavily on implementation, maintenance, and growth of clinical pharmacy programs
- Created a National Live Meeting Series to support ongoing efforts in transforming practices
- Launched Four Regional Clinical Pharmacy “Boot Camps” in 2011 that trained over 300 Clinical Pharmacists on 7 core chronic primary care diseases
- Established National Volunteer Group of over 200 pharmacists and technicians to work on “boot camp” curriculum and to help maintain and develop a more robust SharePoint site, expert panels, and ongoing support and newsletters
### Did Boot Camps Work? Pre-Post Boot Camp Pharmacist with Scope of Practice

<table>
<thead>
<tr>
<th>Disease State</th>
<th>CPS with SOP Pre-boot camp - May 2011</th>
<th>CPS with SOP Post-boot camp - February 2012</th>
<th>% Change</th>
<th>N value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis C</td>
<td>61</td>
<td>84</td>
<td>38%</td>
<td>23</td>
</tr>
<tr>
<td>Pain Management</td>
<td>227</td>
<td>276</td>
<td>22%</td>
<td>49</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>783</td>
<td>916</td>
<td>17%</td>
<td>133</td>
</tr>
<tr>
<td>Hypertension</td>
<td>745</td>
<td>852</td>
<td>14%</td>
<td>107</td>
</tr>
<tr>
<td>Smoking Cessation</td>
<td>460</td>
<td>531</td>
<td>15%</td>
<td>71</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>164</td>
<td>163</td>
<td>-0.6%</td>
<td>-1</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>745</td>
<td>900</td>
<td>21%</td>
<td>155</td>
</tr>
<tr>
<td>Global</td>
<td>135</td>
<td>514</td>
<td>280%</td>
<td>379</td>
</tr>
</tbody>
</table>
Systems Redesign Task Group

• Focusing on optimizing the availability and efficient use of pharmacist, pharmacy technicians, automation, and contracted services resources to improved productivity and effectiveness.
• Create data collection tools to assess staffing, get field involvement, surveys, etc. Explore ways to evaluate existing programs
• Existing resources can be streamlined and redeployed using proven systems redesign principles that have not been universally applied. A few examples include:
  • Identify all potential areas where pharmacy technicians can be transformed into new practices to fully assume the dispensing roles
  • Changes in National, Regional and local Policies
  • Use of Automation
  • Moving all dispensing functions to technicians
  • Using employees at the highest level of their training
  • Eliminate unnecessary tasks
  • Contracting, pre-made, pre-packaged
  • Leveraging innovations from each site
  • Benchmarking and metrics to measure cross sectional performance
WHAT HAVE WE DISCOVERED IN OUR JOURNEY TO TRANSFORM TO NEW PRACTICES?
Facts

• We have a little more than 7500 pharmacists and 4100 Technicians in the system
• Their activities were diverse and not well organized
• There are many practices that are highly advanced but have never been shared outside the local system
• There is broad, but inconsistent use of technicians, policies and practices
Pharmacists with a Scope of Practice (n=2654)
Pharmacists With a Scope of Practice – Growth Over Time

VETERANS HEALTH ADMINISTRATION
Percentage of Time Spent Working Under Scope of Practice

- <25% (<10 hr/wk): 486
- 25-49% (10-19 hr/wk): 377
- 50-74% (20-29 hr/2wk): 386
- 75-100% (30-40 hr/wk): 1402
VHA has approximately 6,700 Pharmacists

Total pharmacists with SOP is over 2,600 (39%)

Of These 2,600

Residency trained = 62%
BPS Certification = 34%
Other Certification = 13%
Residency and/or BPS certification = 66%
Residency and/or BPS and/or Other Certification = 73%
PharmD = 89%

Total pharmacists with SOP is over 2,600 (39%)
Pharmacist SOP by Disease State

Anticoagulation: 941
Lipids: 550
Diabetes: 509
Hypertension: 475
Smoking Cessation: 311
CHF: 305
Pain Management: 278
ESA/Anemia: 285
Thyroid: 197
Global/General (not dx specific): 180
BPH: 195
Osteoporosis: 100
Infectious Disease: 121
Psychiatry: 167
Hepatitis C: 108
Renal/Nephrology: 72
Pharmacokinetics: 54
Inpatient - Int. Med.: 169
Inpatient - Specialty: 54
Oncology: 140
Geriatrics: 54
Scope of Practice Trends

- Anticoag
- Lipids
- Diabetes
- Hypertension
- Global
Clinical Pharmacy Encounter Growth

Number of 160 Encounters (FY07 thru FY12)

VETERANS HEALTH ADMINISTRATION

Reference: VA SharePoint Metrics site Dec 2011
Proving Transformation to New Practice Models is all about Outcomes!!
Issues with Outcomes Studies

- Single Site - utility for scalability is limited
- Small numbers of patients which may not allow for strong statistical analysis
- Descriptive in nature and lack control groups
- Multiple centers analysis suffer from methodological issues
- A better way is needed!
## Pharmacist vs. PCP Managed CV Factors

<table>
<thead>
<tr>
<th>N= 150</th>
<th><strong>CPS Referral</strong></th>
<th><strong>PCP Alone</strong></th>
<th><strong>P-value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate Treatment of Hypercholesterolemia</td>
<td>96%</td>
<td>68%</td>
<td>p &lt; 0.0001</td>
</tr>
<tr>
<td>Goal LDL values achieved below 105mg/dL</td>
<td>85%</td>
<td>50%</td>
<td>p &lt; 0.0001</td>
</tr>
<tr>
<td>Appropriate antiplatelet/anticoagulation therapy prescribed</td>
<td>97%</td>
<td>92%</td>
<td>p = 0.146</td>
</tr>
<tr>
<td>Appropriate Therapy with ACE-I or Alternative in those with EF &lt;40%</td>
<td>89%</td>
<td>69%</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Cardiac Events</td>
<td>27</td>
<td>22</td>
<td>p = 0.475</td>
</tr>
<tr>
<td></td>
<td>Baseline Mean±SD</td>
<td>3 Months Mean±SD</td>
<td>Change</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Age, yrs</td>
<td>62.1 ± 1.3</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HbA1C, %</td>
<td>10.8 ± 1.3</td>
<td>8.4 ± 2.0</td>
<td>- 2.4</td>
</tr>
<tr>
<td>FPG, mg/dL</td>
<td>215 ± 82</td>
<td>150 ± 76</td>
<td>-65</td>
</tr>
<tr>
<td>Weight, lbs</td>
<td>230.2 ± 53.3</td>
<td>228.8 ± 58.1</td>
<td>- 1.4</td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>32.5 ± 6.7</td>
<td>32.7 ± 8.1</td>
<td>0.2</td>
</tr>
<tr>
<td>LDL, mg/dL</td>
<td>92 ± 39</td>
<td>80 ± 28</td>
<td>-12</td>
</tr>
<tr>
<td>TG, mg/dL</td>
<td>361 ± 381</td>
<td>257 ± 178</td>
<td>-104</td>
</tr>
<tr>
<td>HDL, mg/dL</td>
<td>38 ± 10</td>
<td>36 ± 7</td>
<td>-2</td>
</tr>
<tr>
<td>SBP, mmHg</td>
<td>130 ± 16</td>
<td>128 ± 14</td>
<td>-2</td>
</tr>
<tr>
<td>DBP, mmHg</td>
<td>71 ± 11</td>
<td>69 ± 12</td>
<td>-2</td>
</tr>
</tbody>
</table>

*C. Morello June 2010 n=60*
Pharmacist Managed ESA Study

<table>
<thead>
<tr>
<th>Hemoglobin Range</th>
<th>Pharmacist-Managed Clinic (N=1807) n (%)</th>
<th>Usual Care (N=606) n (%)</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 g/dl</td>
<td>349 (19)</td>
<td>127 (21)</td>
<td>0.81</td>
</tr>
<tr>
<td>10-12 g/dl</td>
<td>1284 (71)</td>
<td>345 (57)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>&gt; 12 g/dl</td>
<td>174 (10)</td>
<td>134 (22)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

- CPS use of ESA is safer based on number of patients staying within FDA recommended Hb range of 10-12 (71% vs. 57%) and the number of Hb that exceeded 12 (10% vs. 22%).
- CPS followed their patients more closely based on number of Hb and iron studies, which might explain better achievement of Hb goals on lower doses of medications.

Pharmacists Achieve Results with Medications Documentation (PhARMD) Project
Measuring Interventions and Outcomes System Wide Using a Pharmacotherapy Intervention Tracking Tool
PBM PhARMD Project Tool Design

CPS Documentation of Pharmacotherapy Interventions
- Anticoagulation Intervention
- Compliance/Adherence Addressed
- Contraindication to Medication
- Drug Interaction Addressed
- Drug Not Indicated
- Duplication Of Therapy
- Medication Interventions
- Med Reconciliation Performed
- Non-formulary Review/Conversion
- Prevent/Manage Drug Allergy
- Manage Adverse Drug Event
- Nonpharmacologic Intervention
- Therapeutic Drug Monitoring or Diag Eval
- Diabetes Intervention or Goal Met
- Hypertension Intervention or Goal Met
- Heart Failure Intervention or Goal Met
- Lipid Intervention or Goal Met
- Bone Health Intervention
- Smoking Cessation Intervention or Goal Met
- Hepatitis C Intervention or Goal Met

PBM designed a clinical reminder tool for rollout by end of calendar year. Project aligns with VHA Transformational Initiatives.

Tool provides documentation of clinical interventions related to medication management by Clinical Pharmacy Specialists (CPS) across VHA, as non-physician providers.

CPRS tools provide the ability to document Pharmacotherapy interventions which have demonstrated:
- Potential to reduce harm to patients
- Potential cost avoidance to healthcare system

CPS demonstrate the ability to document clinical interventions and therapeutic achievements for specific disease states.
PBM PhARMD Clinical Reminder Tool
Tool Design and Use

Primary Care Conditions Addressed:

- Hypertension

Goal for patient (required to choose one):

- Patient's goal is <130/80
- Patient's goal is <140/80
- Patient's goal is <140/90
- Patient's goal is:

- Medication intervention
  - Initiate new medication for previously untreated diagnosis
  - Adjust dose or frequency of a current medication
  - Discontinue, change to different medication, or add new medication to current therapy
    **If related to management of an ADE or allergy, please document as well under additional pharmacotherapy intervention, manage ADE or allergy

- Nonpharmacologic intervention made
  **Examples include, but are not limited to:
  disease state education,
  lifestyle counseling and education,
  providing educational materials,
  providing home monitoring devices,
  making referrals for additional care

- At goal as product of CPS med management care

The CPS documents interventions made and when goals achieved
Additional Pharmacotherapy Interventions:

- Anticoagulation Therapy
  - Anticoagulation initiation
  - Anticoagulation education provided
  - Dose adjusted due to supratherapeutic INR
  - Dose adjusted due to subtherapeutic INR
  - Dose adjusted due to other reason
- Compliance/adherence addressed
- Contraindication
- Drug Interaction
- Drug not indicated
- Duplication of therapy
- Manage adverse drug event

Medication intervention for disease state not listed above
- Initiate new medication for previously untreated diagnosis
- Adjust dosage or frequency
- Discontinue, change to different medication, or add new medication to current therapy
  **If related to management of an ADE or allergy, please document as well under additional pharmacotherapy intervention, manage ADE or allergy**

- Non-Formulary review/conversion
- Nonpharmacologic intervention made for disease state not listed above
  **Examples include, but are not limited to:**
  - Disease state education,
  - Lifestyle counseling and education,
  - Providing educational materials,
  - Providing home monitoring devices,
  - Making referrals for additional care
- Prevent or manage drug allergy
- Therapeutic drug monitoring or diagnostic evaluation
  (e.g. Amiodarone, Epopoetin, Anticoagulation, etc.)
PBM PhARMD Project
Defining Metrics and Reports

- CPPO Corporate Data Warehouse (CDW) database house metrics
- Initial metrics defined by PBM PhARMD Project workgroup, further refinement ongoing
- Staging tables and initial report parameters in SQL created for report generation
- Dashboards developed
  - Desire to have reports fluid and able to move between metrics easily, provide site level data along with individual CPS and patient specific data
- Awaiting additional security and site report access on CDW
PBM PhARMD Project
Metrics and Reports Available

• Total Number of Disease state Interventions per Clinical Pharmacy Specialist (CPS)
• Total Number of Additional Pharmacotherapy Interventions per Clinical Pharmacy Specialist (CPS)
• Average number of interventions per CPS visit
• Cost avoidance associated with specific pharmacotherapy interventions

• Number (%) of patients at goal by facility
• Time to goal for disease state (visits and days) by facility
• Cost of disease state specific medications per CPS

• Time to goal  Review of Treatment to Goal for disease specific interventions (IN DEVELOPMENT)
PBM PhARMD Expansion Pilot Results
April 2012 to January 2013

- Tool utilized by 314 pharmacists at 26 VA sites

<table>
<thead>
<tr>
<th>Metric</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Interventions made by the CPS</td>
<td>76,098</td>
</tr>
<tr>
<td>Number of Patients</td>
<td>19,229</td>
</tr>
<tr>
<td>Number of Visits</td>
<td>39,671</td>
</tr>
<tr>
<td>Avg. Number of Interventions per visit</td>
<td>1.92 (range of 0.6-2.6)</td>
</tr>
</tbody>
</table>
**PBM PhARMD Expansion Pilot**

**Average Number of CPS Intervention Per Visit**

![Bar chart showing average number of CPS interventions per visit from November 2012 to January 2013.](chart.png)
PBM PhARMD Expansion Pilot
CPS Disease State and Nonpharmacologic Interventions

<table>
<thead>
<tr>
<th>Year</th>
<th>Dx State Tx Interv</th>
<th>Dx State Nonpharm Interv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1500</td>
<td>1000</td>
</tr>
<tr>
<td>2013</td>
<td>3000</td>
<td>5000</td>
</tr>
</tbody>
</table>

Legend:
- Dx State Tx Interv
- Dx State Nonpharm Interv
PBM PhARMD Expansion Pilot
Total CPS Disease State Interventions

DM Interventions
HTN Interventions
Lipids Interventions
CHF Interventions
HCV Interventions
Bone Health Interventions
Tob Cess Interventions
PBM PhARMD Expansion Pilot
CPS Disease State Medication Interventions
(excludes Non-Pharmacologic)
Linking Cost Avoidance to CPS Interventions
Development of a Cost Benefit Model

- Development of cost benefit model underway
- Lee et.al. provides base for cost avoidance of interventions made by clinical pharmacists in VHA
- Analysis needed when the pharmacist functions as the prescriber as seen in PhARMD project
- Aldridge et.al. showed that 7% of interventions made in ER had potential to cause harm.

<table>
<thead>
<tr>
<th>Type of Intervention</th>
<th>Avg Cost Avoidance per intervention (Lee et. al)</th>
<th>Possible Cost Avoidance assoc with CPS Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease State Medication Interventions</td>
<td>$363.73</td>
<td>$6,533,318.26</td>
</tr>
<tr>
<td>Adj Dose or Frequency</td>
<td>$363.73</td>
<td>$616,522.35</td>
</tr>
<tr>
<td>Drug Interaction</td>
<td>$398.97</td>
<td>$83,384.73</td>
</tr>
<tr>
<td>Drug Not Indicated</td>
<td>$91.88</td>
<td>$30,923.62</td>
</tr>
<tr>
<td>Duplicate Therapy</td>
<td>$169.91</td>
<td>$22,937.85</td>
</tr>
<tr>
<td>New Tx for Existing Diagnosis</td>
<td>$1,861.46</td>
<td>$4,275,773.62</td>
</tr>
<tr>
<td>Manage ADE</td>
<td>$674.61</td>
<td>$1,204,853.46</td>
</tr>
<tr>
<td>Manage Allergy</td>
<td>$289.48</td>
<td>$43,132.52</td>
</tr>
<tr>
<td>Total CPS Cost Avoidance</td>
<td></td>
<td>$12,810,846.41</td>
</tr>
<tr>
<td>(based on Lee et.al.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total CPS Cost Avoidance</td>
<td></td>
<td>$896,759.25</td>
</tr>
<tr>
<td>based on 7% (Aldridge et.al.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Lee et.al. AJHP 2002;59:2070-2077
PBM PhARMD Project
Future Implications for Use

- Use of tool nationally has multiple implications for the profession of pharmacy and practice within VHA

Opportunities include:

✓ National Benchmarking of pharmacy interventions and outcomes
✓ National, VISN and Local Cost justification of new and existing pharmacists
✓ Comparison of pharmacy interventions in VHA to other healthcare organizations
✓ Use in OPPE process for Scope of Practice
✓ Creation of Clinical Pharmacy Staffing tools and models
✓ Identification of best practices for more rapid sharing of information
✓ Identification in potential gaps in care that may exist at facilities
✓ Marketing the impact of clinical pharmacy care at the facility, VISN, National levels
What Type of Pharmacists Do We Need?

• Is a Pharm.D. degree with its clinical training good enough to do many tasks?
• Do they need to have a residency?
• Is Board Certification a necessary skill?
• Do we have time to wait to get individuals with these skills?
• Are there ways to train people internal to the system to assure they have the knowledge, skills and abilities to do the job?
• Do those with advanced education outperform those without?
Questions We would Like To Answer

• Years of Experience vs. BCPS vs. residency – do younger tend to have more degrees?
• Do they get better outcomes?
• Difference geographically or similar
• Are there practice setting differences (specialty vs. primary care) based on residency BCPS?
• Do generalists achieve similar outcomes compared to specialists (e.g. anticoagulation, Diabetes)
• What are the contributions of trainees (residents and students) in improving outcomes?
• Does the school or residency you were trained at make a difference in outcomes?
National Implementation Challenges

1. Consistent use of CPS Justification Documents including business plans, position papers, literature and slide sets
2. Updated Functional Statements, Performance and Qualification Standards
3. Standardized Ongoing Professional Practice Evaluation Assessment Methodologies
4. Creation of Competency & Training Assessment Tools Documents
National Implementation Challenges (cont)

Local, Regional or national Data Warehouse Support

Standardized Methods to rollup Outcomes Assessments from all sites to further measure the success of the CPS

Pharmacy Resident and Student Integration

Methods to reorganize Pharmacy Services to incorporate the Medical Home & Specialty Models and increase employee satisfaction

Identifying the Role of the Pharmacy Technician in the model
New Projects and Priorities for 2013: Practice Based Changes

- Identify additional areas of unmet need in the ambulatory care area including, pain management, diabetes, dementia, Home Based Health care, mental health.

- Identify additional areas of unmet need in the inpatient setting including, Antimicrobial stewardship, Emergency Room Pharmacy, ICU, and Oncology

- Move toward defining CPS as a Non-Physician Practitioner

- Refine our Quality Assurance and Outcomes research capability to take on more ground breaking, publishable assessments of the CPS role in primary and specialty care.
ARE SIMILAR FORCES HAPPENING OUTSIDE THE VA?
# Quality – Saving Lives

Clinical Pharmacy Services improve patient quality outcomes by saving lives & reducing adverse events

Within their specific patient populations, CPS reduces mortality:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
<th>Study Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>89%</td>
<td>Early intervention by Collaborative Cardiac Care Program (Clinical Pharmacy Cardiac Risk Service (CPCRS) and Cardiac Rehab) reduces all-cause mortality rates by 89%</td>
<td>James A. Vohs Winner 2008</td>
</tr>
<tr>
<td>88%</td>
<td>Early intervention by Collaborative Cardiac Care Program reduces cardiac-related mortality rates by 88%</td>
<td></td>
</tr>
<tr>
<td>78%</td>
<td>Clinical Pharmacy Call Center (CPCC) reduces mortality rates for patients discharged from Skilled Nursing Facilities by 78% within the first 60 days of discharge</td>
<td>James A. Vohs Winner 2007</td>
</tr>
<tr>
<td>50%</td>
<td>CPCC reduces mortality rates for Medicare members who participate in our Medication Therapy Management (MTM) program by 50%</td>
<td></td>
</tr>
</tbody>
</table>

Within their specific patient populations, CPS reduces adverse events:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
<th>Study Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>81%</td>
<td>Clinical Pharmacy Anticoagulation &amp; Anemia Service (CPAAS) reduces the risk of bleeding by 81%</td>
<td>J Thromb Thrombolysis 2003</td>
</tr>
<tr>
<td>62%</td>
<td>CPAAS reduces the risk of blood clotting (thromboembolism) by 62%</td>
<td>CHEST 2005</td>
</tr>
<tr>
<td>36%</td>
<td>CPCC reduces ED visits for patients discharged from Skilled Nursing Facilities by 36%</td>
<td>Pharmacotherapy 2008</td>
</tr>
</tbody>
</table>
Collaborative Practice Agreements (CPAs) - Opportunities Under ACO arrangements
THE RESULT

Well at Walgreens

ask your pharmacist
drop
pick up express refills
Walgreen by the Numbers

- 7600 Stores on the best corners in America
- 67% of US population lives within 3 miles of a Walgreens
- 70,000 providers, mostly pharmacist
- 26,000 pharmacists are certified in immunizations
- 728 Take Care Clinics
- 119 “Medical Campus” Pharmacies
Regulatory & Political Change would make a huge difference
The CPS as a Health Care Provider

• Currently Pharmacists are **not recognized** in the Social Security Act (SSA) or CMS as Health Care Providers, practitioners, or Non-Physician Practitioners (NPPs)\(^3\)

• The following health care professionals are recognized as providers by the Social Security Act:\(^3,9\)
  – physician assistants, nurse practitioners, certified nurse midwives, clinical social workers, clinical psychologists, and registered dieticians / nutrition professionals

• CMS final Rule- May 2012 - New regulations allow hospitals to expand definition of medical staff to include PAs, APRNs, and **pharmacists** to perform all functions within their scope

• Payment for services not addressed. True implications are not clear
In a recent letter of public support for the report titled *Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General, 2011*, Dr. Regina Benjamin stated the following...

1. Health leadership and policy makers should further explore ways to optimize the role of pharmacists to deliver a variety of patient-centered care and disease prevention, in collaboration with physicians or as part of the healthcare team.

2. Utilization of pharmacists as an essential part of the healthcare team to prevent and manage disease in collaboration with other clinicians can improve quality, contain costs, and increase access to care.

3. Recognition of pharmacists as health care providers, clinicians and an essential part of the health care team is appropriate given the level of care they provide in many health care settings.

4. Compensation models, reflective of the range of care provided by pharmacists, are needed to sustain these patient oriented, quality improvement services.
Technology Implications Health in the Palm of Your Hand

**Examples**
- AliveCor – FDA approved electrocardiogram
- Dr. Mole app
- iHealth BP5 – wireless blood pressure cuff
- Digfit – Fitbit
- Zeo sleep sensor
- iBGStar – blood glucose monitor will evolve
- Wireless thermometers
- Smart Scales – body weight
- ICU on wrist device
- Cellscope – iPhone otoscope & dermascope
- Cell microscope – allow uploading, used in foreign countries
- Portable Echo – Vscan instead of stethoscope
- iRhythm – holter alternative in a patch
- Tricoder – Xprize

**Implications**
- Lower cost
- Widespread availability in doctors office with no need for delays or referrals
- Virtual encounters
- Immediate patient feedback
IMPLICATIONS FOR OUR INITIATIVES
Discussion Section - Right Care

- Substantial data exists that Clinical Pharmacist can improve care in Chronic disease states as proven by VA, Kaiser and other capitated, managed care models. In these settings they have made the pharmacist a mid-level provider or work under current state collaborative practice agreements.
  - How can and should this data be used to push for engaging our under utilized pharmacist workforce.
  - What can be done to get CMS to designate pharmacists as providers so that their documented positive services can be paid for.
  - Since systems like VA & Kaiser don’t bill for Pharmacy Services but rather have justified paying them by achieving better outcomes why can ACO’s, medical groups and others accomplish the same by directly hiring pharmacists?
  - What models and data, similar to that collected by the VA, can be centralized to demonstrate outcomes achieved by Pharmacist on the teams?
  - How do we educate the providers about the value of the pharmacist as a team member rather than as a threat to their practices or income?
Discussion Section - Right Care (cont)

• Will Physician Shortages; growing demographics of elderly; and more insured needing care increase opportunities for pharmacist as providers?
• MTM Services in the retail environment are exploding and businesses like Walgreens have changed their entire business model from distribution to MTM.
• Lower trained individuals, including pharmacy technicians, are being worked to the top of their license so what are the implications for Pharmacist graduating today?
• What are the implications of technology, like cell phones & EMR’s, to make information more readily available at various points of care including retail pharmacies?
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Pharmacy Benefits Management Services (119)
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