

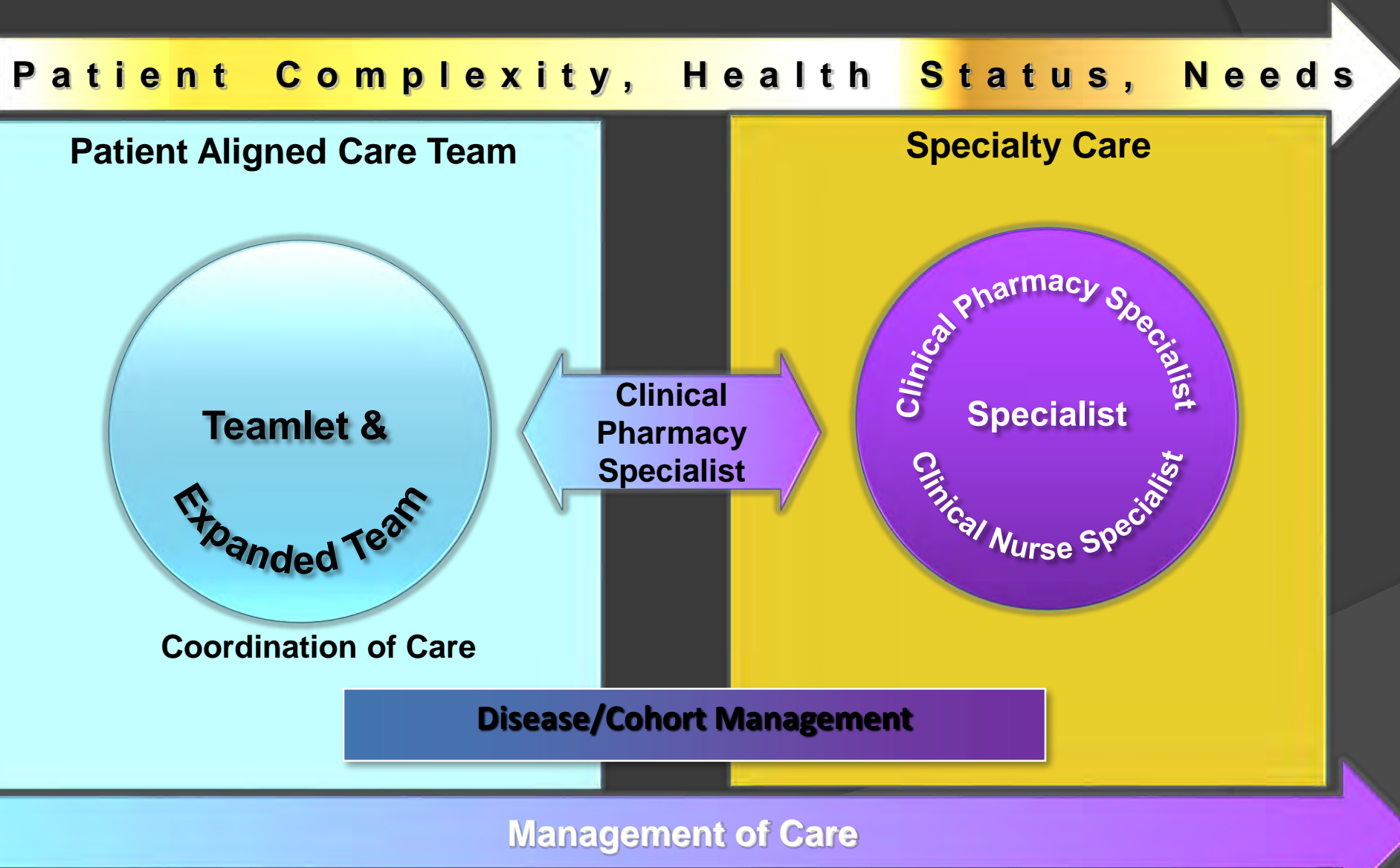
# *Pharmacists Role in Stroke Prevention Management in an Integrated Medical Home Setting*

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# VA's Success with Optimizing Drug Therapy: Clinical Pharmacy Services

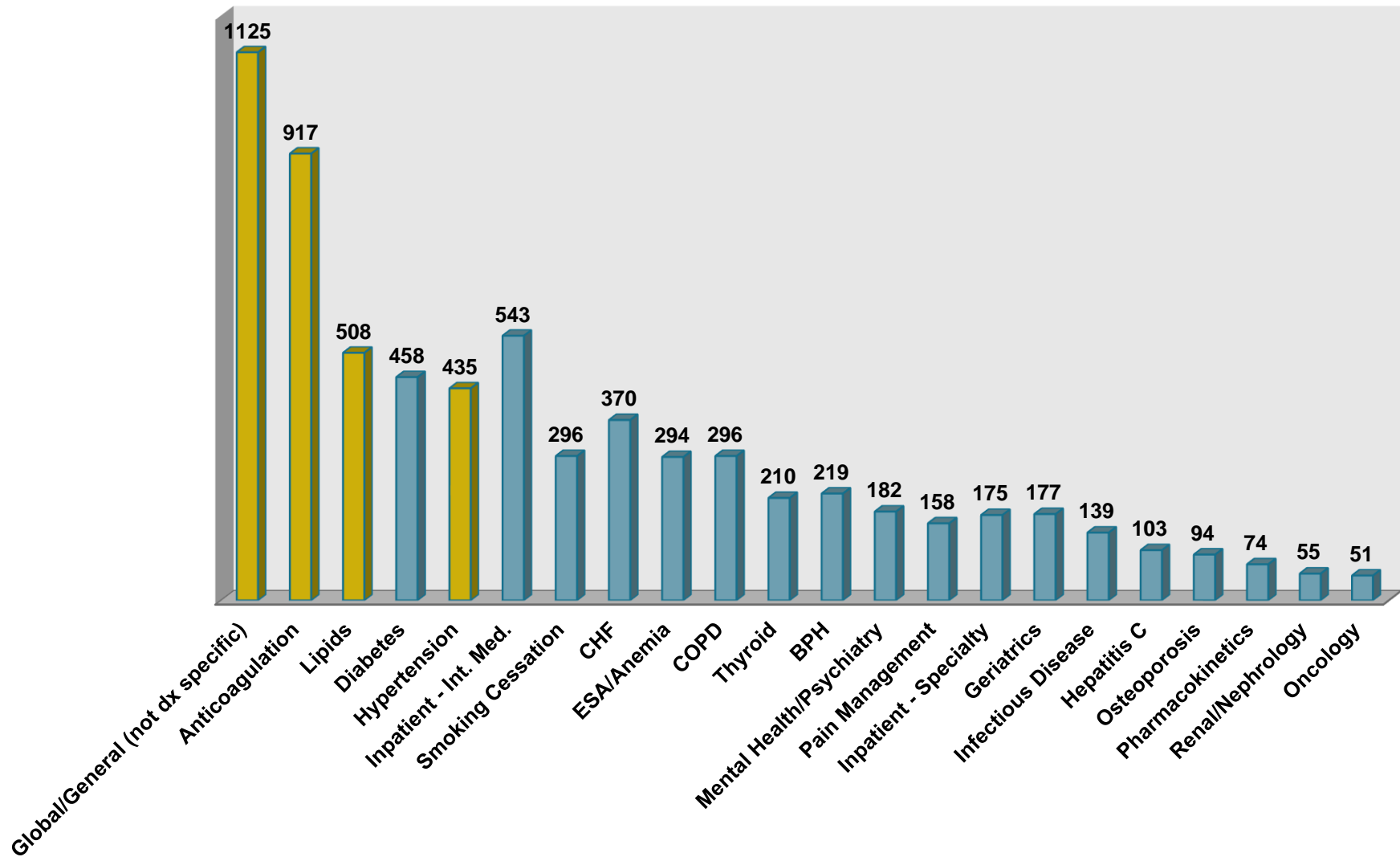
- In VA, Clinical Pharmacy Specialists work collaboratively with providers under a scope of practice that includes prescriptive privileges.
  - Clinical Pharmacy Specialist (CPS) are the medication use and safety experts ***improving medication safety***
  - CPS have the advance skills necessary to provide comprehensive medication management in Primary Care and Specialty Care ***improving outcomes.***
  - Minimize the patient's need to see multiple providers, for medication assessments and evaluations thus ***improving access***
  - Allows Provider time to be utilized for evaluation of disease progression and new identification of illnesses which ***improves overall health***
- **Studies have demonstrated that for every \$1 invested in clinical pharmacy services, more than \$4 in benefit is seen.**

# Clinical Pharmacy Model Vision: Collaboratively Bridging the Gap Between Primary Care and Specialty Care







Reference: A. Morreale June 2011

# Pharmacist SOP by Disease State



# Nationwide Clinical Pharmacy Workload Trends

| Parameter              | FY11      | FY12      | FY13      | % Change  |     |
|------------------------|-----------|-----------|-----------|---|-----|
| # Pharmacists with SOP | 2,132     | 2,616     | 2,853     |    | 34% |
| Encounters/FT E        | 403       | 615       | 586       |    | 45% |
| % Pharmacists w/SOP    | 30.9%     | 38.6%     | 41%       |   | 33% |
| Total 160 Encounters   | 2,454,419 | 3,677,269 | 3,751,001 |  | 53% |

# 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 roll-out 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**

# PhARMD Project Expansion

| <b>Metric</b>   | <b>FY12</b>   | <b>FY13</b>    |
|---|---------------|----------------|
| <b>Number of Pharmacist tool users</b>                | <b>117</b>    | <b>893</b>     |
| <b>Total Disease State Interventions</b>              | <b>15,410</b> | <b>180,019</b> |
| <b>Total Additional Pharmacotherapy Interventions</b> | <b>16,717</b> | <b>129,917</b> |
| <b>Avg Number of visits per CPS</b>                   | <b>162.5</b>  | <b>198.2</b>   |
| <b>Avg Number of Interventions per CPS</b>            | <b>304.5</b>  | <b>347.1</b>   |
| <b>Avg Number of Interventions per visit</b>          | <b>1.87</b>   | <b>1.75</b>    |

# Assessing Clinical Pharmacist Disease Management Outcomes

Interventions



Outcomes



Cost  
Avoidance

**CPS Documentation of  
Pharmacotherapy  
Interventions**

Anticoagulation  
Intervention

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

Clinical Outcomes  
Measured through  
Surrogate markers  
then run through  
Archimedes  
Model, adjusted to  
patient specific  
demographics  
from Central Data  
Warehouse (CDW),  
to project clinical  
outcomes

Apply cost models  
to 1-2 year cost  
avoidance based  
on disease control

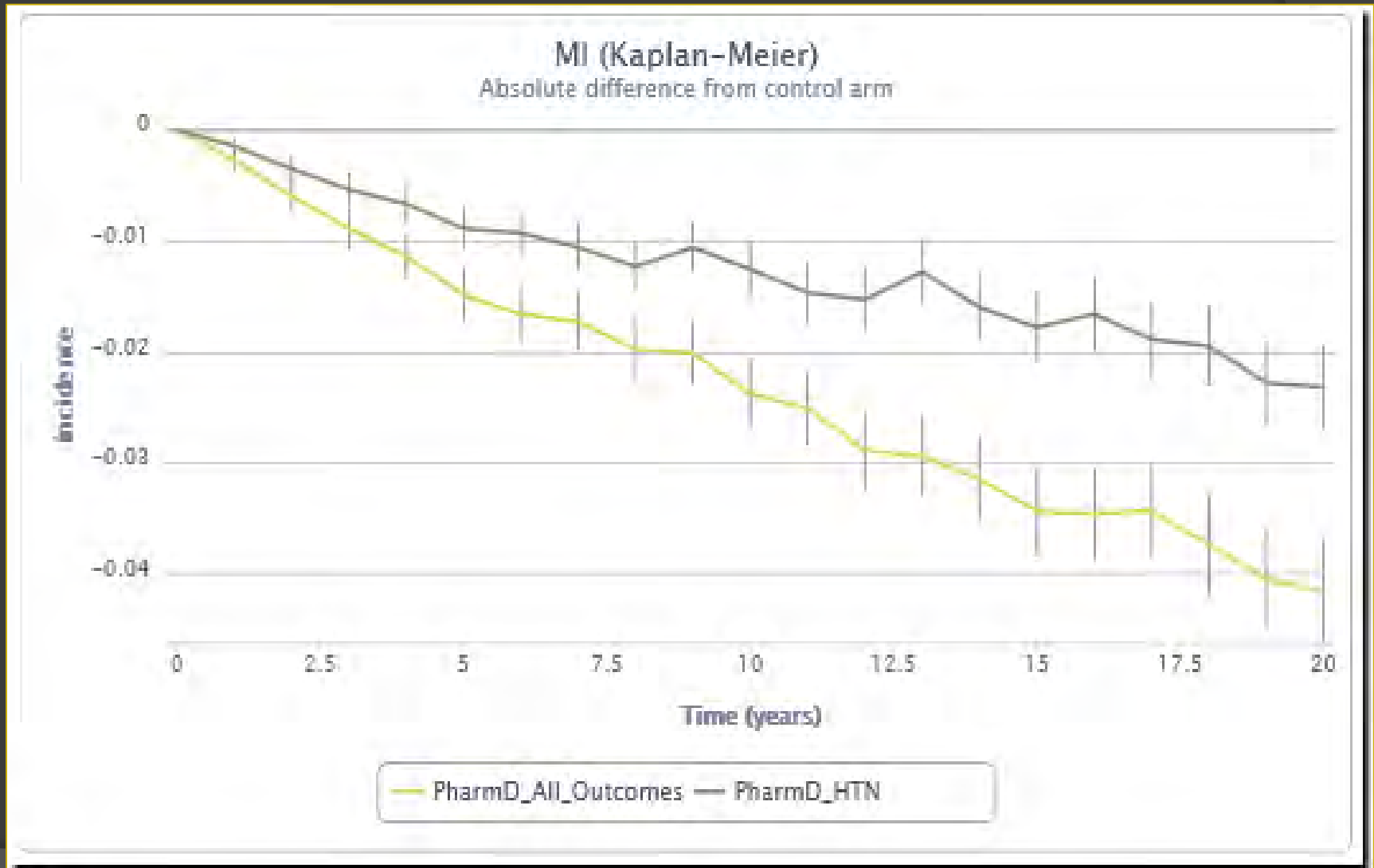


# PhARMD Preliminary Outcomes\*

| Condition | Visits to Goal | Days to Goal | Biomarker | Baseline Biomarker | End of tx biomarker | Patients Meeting Criteria |
|-----------|----------------|--------------|-----------|--------------------|---------------------|---------------------------|
| Diabetes  | 2-4            | 49           | HbA1c     | 9.05               | 8.08                | 957                       |
| HTN       | 1-4            | 31           | Systolic  | 153                | 133                 | 370                       |
|           |                |              | Diastolic | 93                 | 79                  |                           |
|           |                |              | MAP       | 113                | 97                  |                           |
| Lipids    | 1-2            | 34           | LDL       | 138                | 106                 | 689                       |

\*Patients specifically referred to the pharmacist for this disease and followed minimum of 6 month

# Hypertension Kaplan Meier Curve (example output)



# Cardiovascular NNTs: Preliminary 2 Yr Cost Benefit Analysis

| Disease                       | Outcome | NNT | Visit range | \$Cost/<br>Visit<br>(Avg cost) | Weighted Avg<br>Acute + 2 year<br>Cost /Event* | Avg Benefit/<br>Cost (min) |
|-------------------------------|---------|-----|-------------|--------------------------------|--|----------------------------|
| HTN                           | MI      | 43  | 1-4         | \$37.75-\$150<br>(\$75.5)      | \$29,294                                       | 9:1                        |
|                               | Stroke  | 152 | 1-4         | \$37.75-\$150<br>(\$75.5)      | \$37,589                                       | 3.3:1                      |
|                               | Death   | 63  | 1           |                                |  | Priceless                  |
| Lipid                         | MI      | ?   | 1-2         | \$37.75                        | \$29,294                                       |                            |
| All Dz<br>(HTN, DM,<br>Lipid) | MI      | 24  | 1-4         | \$37.75-\$150<br>(\$75.5)      | \$29,294                                       | 16:1                       |
|                               | Stroke  | 166 | 1-4         | \$37.75-\$150<br>(\$75.5)      | \$37,589                                       | 2.9:1                      |
|                               | Death   | 52  | 1-4         | \$37.75-\$150<br>(\$75.5)      |  | Priceless                  |

# Future Implications

- The merging of these tools and technology will lead to many enhancements to the system including the possibility for the following:
  - ✓ National Benchmarking of pharmacy interventions and outcomes
  - ✓ National, Regional and Local Cost justification of new and existing pharmacists
  - ✓ Comparison of pharmacy interventions in VHA to other healthcare organizations
  - ✓ 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, Regional, and National levels
  - ✓ Disease state goal impact metrics for clinical pharmacy services
  - ✓ Evaluation of differences in interventions made by pharmacists with different scope of practices and/or credentials
  - ✓ Cost benefit modeling of interventions made by pharmacist and impact on disease conditions and processes
  - ✓ Evaluation of differences in pharmacist prescribing and interventions made
  - ✓ Integration of patient complexity and interventions made by pharmacists related to disease state goal achievement

# Conclusions

- ① Tracking Clinical Pharmacists interventions and outcomes nationally is yielding robust numbers to be able to assess.
- ① Marrying Our software with the CDW & Archimedes Software gives up powerful predictive ability and has many implications for the future.
- ① Models are young and need significant refinement, especially around cost and timelines but are flexible.
- ① Outcomes achieved by Clinical Pharmacist should reduce Stroke and MI and is of a positive cost benefit to the system.