



# Implementation of DSME using SMA in Primary Care for Adults

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# *Introduction*

- Diabetes mellitus (DM) is a chronic condition
  - 24 million individuals (8% of U.S. population)
  - By 2050, number expected to double
  - 7<sup>th</sup> leading cause of death in 2006
- \$174 billion in direct and indirect costs in 2007
- Spending expected to increase from \$113 billion to \$336 billion between 2009 -2034
- Annual health care cost/person: with DM \$11,744 vs. \$5,095 without DM.





# *Purpose*

For patients with DM within a primary care setting:

- Implement a DSME program using the Chronic Care Model (CCM) and Shared Medical Appointments (SMA).
- Understand/improve processes of care and evaluate outcomes.
- Evaluate current practices of care and implement SMA to determine the cost effectiveness and provider productivity





# *Methodology*

- Diabetes self-management education (DSME)
  - an ongoing process used to facilitate and empower individuals to learn about DM and its complications through knowledge acquisition
- Shared Medical Appointments
  - First described in 1974 by Edward Noffsinger MD
- Diffusion of Innovation Theory
  - Everett M. Rogers
- Chronic Care Model
  - Uses six elements for delivery of comprehensive health care
- Plan-Do-Check-Act Cycle
  - A continuous quality improvement (CQI) process blending the implementation and monitoring of a project





# *DSME*

- An ongoing collaborative process
- Traditionally has occurred in acute care settings
- PCPs have been encouraged to refer to hospital-based DSME program
- Service delivery concept with the potential for design thinking
- Supported by ADA, AADE, NDEP, RWJF
- Improves outcomes





# *SMA*

- Health care delivery model
- Provide an opportunity to manage chronic illness, improve quality and patient self-efficacy and self-management
- AAFP, AHRQ, J&J Diabetes Institute
- Potential to increase financial productivity by \$15,411 per health care provider per year
- Benefits: improved A1C, microalbumin testing, foot exams, lipid testing, patient & provider satisfaction, self-efficacy, diabetes knowledge, QOL, & SMBG





# *Diffusion of Innovation*

- The Innovation
  - Relative advantage, compatibility, complexity, trialability, & observability
- Communication
  - Homophily or heterophily
- Time
  - Innovation-decision process, innovativeness of individual or other adoption unit, & the rate of adoption
- Social system
  - Social and communication structure, norms, opinion leaders and change agents, types of innovative-decisions, and consequences

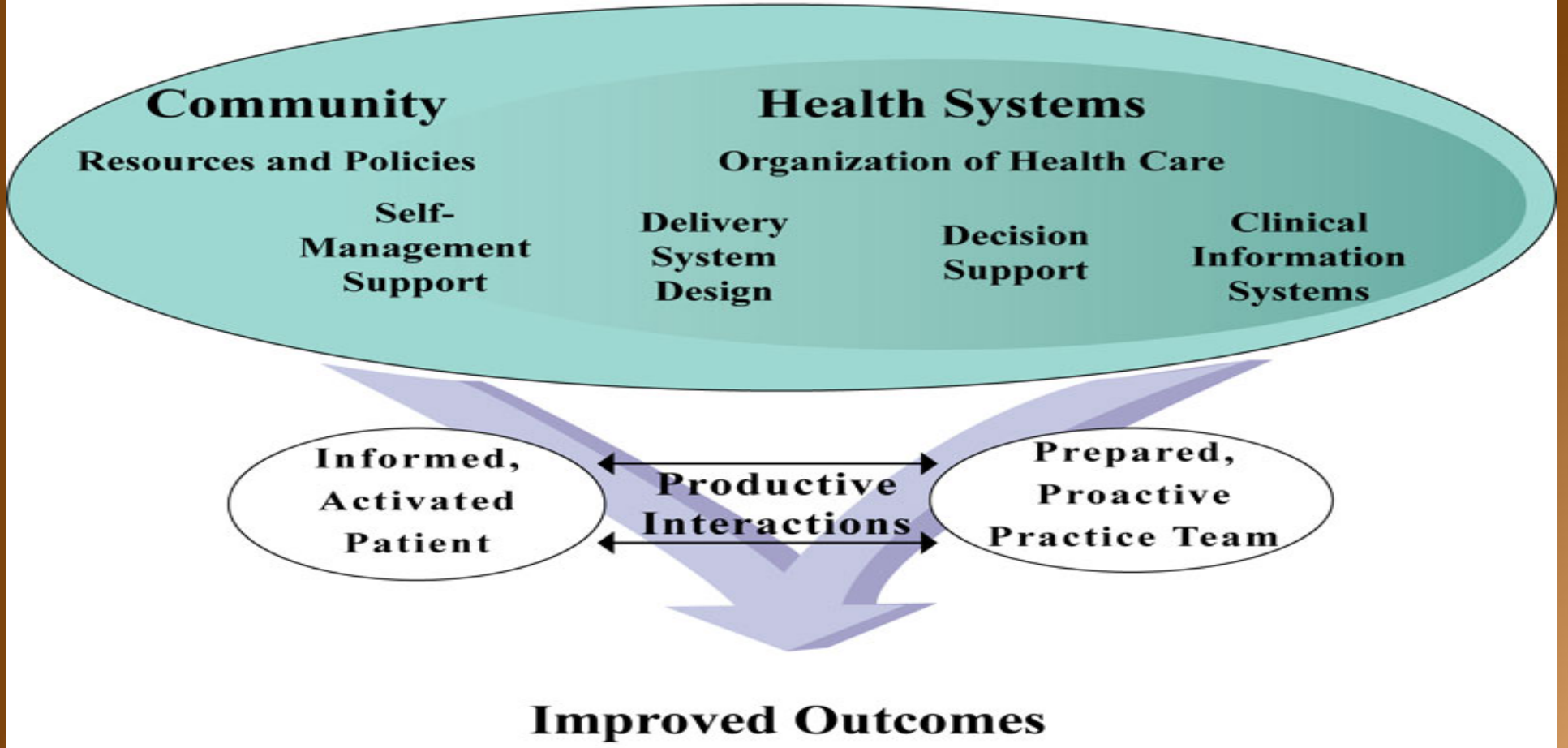






# Chronic Care Model

## The Chronic Care Model



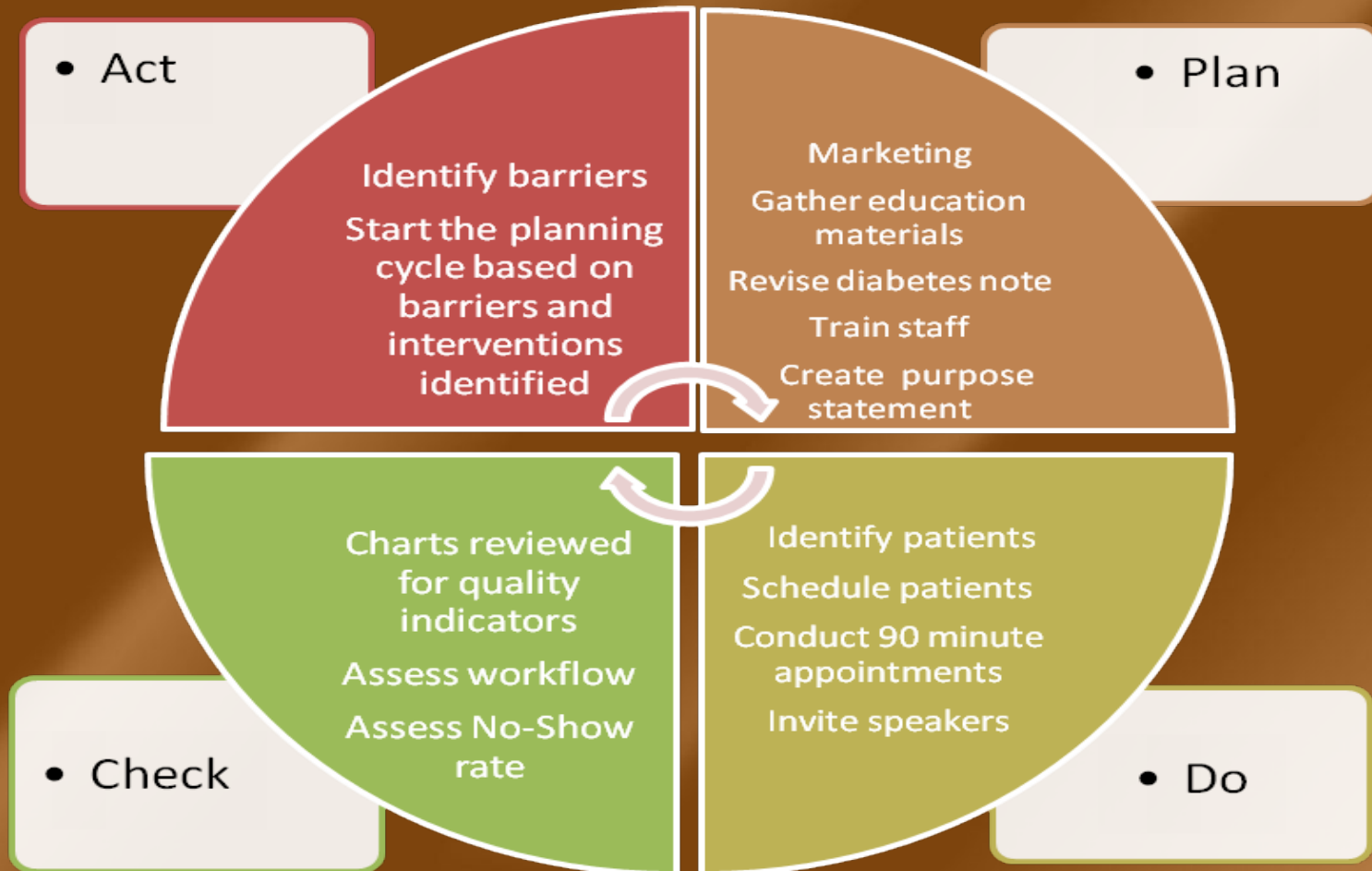
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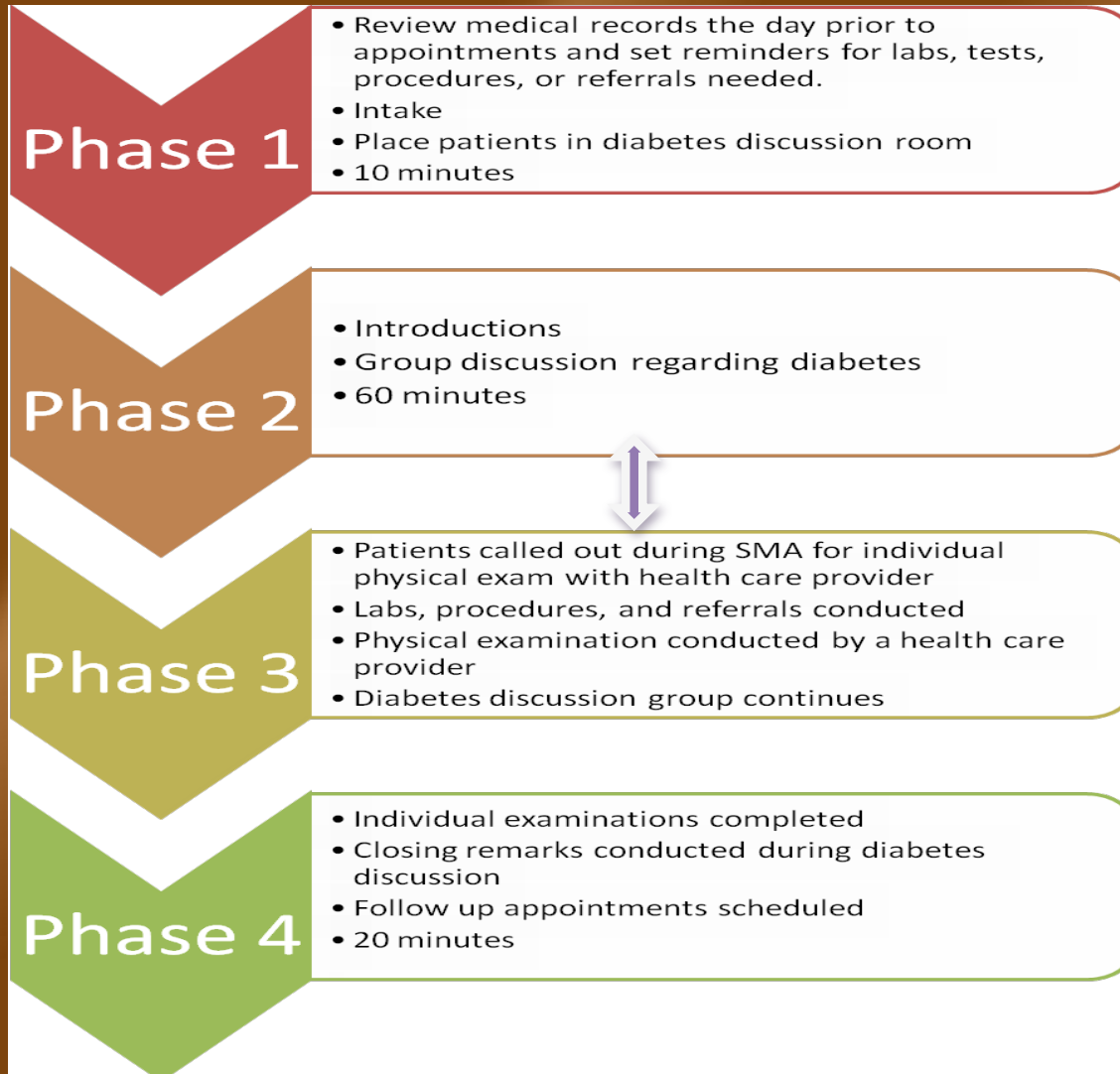


# Plan-Do-Check-Act Cycle





# Implementation





# Baseline Data

	BP $\leq 130/80$	A1C $\leq 7\%$	Chol $\leq 200$ mg/ dL	Trig $\leq 150$ mg/dL	LDL $\leq 100$ mg/dL	Urine albumin measured within 12 months	Urine albumin $\leq$ 30 $\mu\text{g}/\text{mg}$	Eye exam within the last 12 months	ASA 81 mg daily
Yes	60 (86%)	22 (31%)	64 (93%)	47 (67%)	54 (79%)	17 (25%)	41 (61%)	46 (66%)	31 (45%)
No	10 (14%)	48 (69%)	5 (7%)	23 (33%)	14 (21%)	52 (75%)	26 (39%)	24 (34%)	38 (55%)
Total	70	70	69	70	68	69	67	70	69





# *A1C measures*

A1C Measures	Baseline	3 months	6 months
Average A1C	7.95%	7.48%	7.51%
Patients with repeat A1C value	N/A	59 (84%)	22 (31%)
Patient with A1C $\leq 7$	22 (31%)	24 (41%)	7 (32%)
Patient with A1C $\leq 9$	55 (79%)	52 (88%)	19 (86%)
Patients with a decrease in A1C	N/A	34 (58%)	12 (55%)





# *Lipids*

<b>Lab Being Measured</b>	<b>Baseline</b>	<b>Follow up</b>
Average Cholesterol	146 mg/dL	153 mg/dL
Average Triglycerides	141 mg/dL	149 mg/dL
Average LDL	78 mg/dL	87 mg/dL





# *Process Measures*

- % with 1  $\geq$  HbA1c test annually.
- % with 1  $\geq$  LDL cholesterol test annually.
- % with 1  $\geq$  microalbuminuria during measurement yr, or who had evidence of medical treatment for existing nephropathy.
- % who received eye exam with dilation, or evaluation with retinal photography by ophthalmologist or optometrist annually or every other yr if low risk of retinopathy.
- % with receiving 1  $\geq$  foot examination annually.
- % with smoking status ascertained/documentated annually.







# *Outcome Measures*

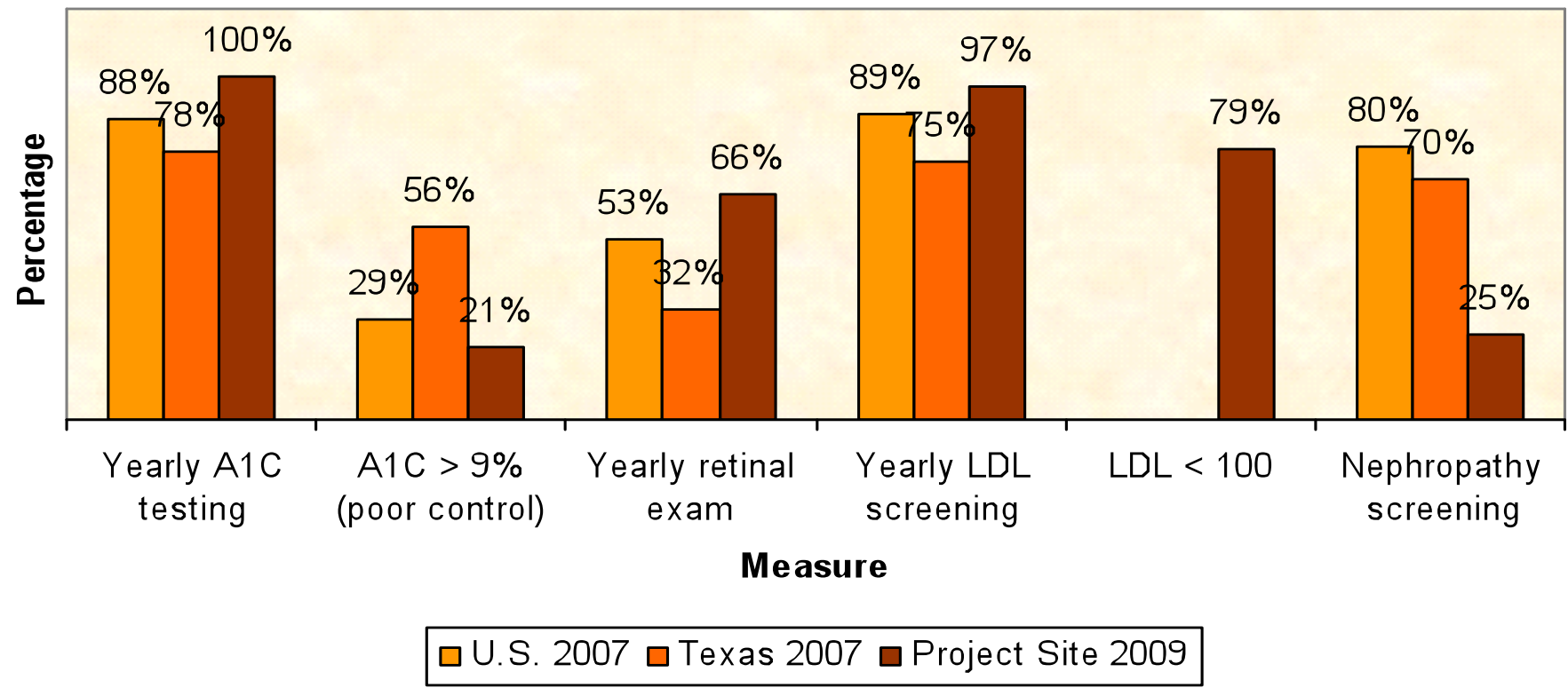
- % with most recent HbA1c level  $>9.0\%$  (poor control).
- % with most recent LDL cholesterol  $<130$  mg/dl.
- % with most recent blood pressure  $<140/90$  mmHg.





# Results

### HEDIS Measures Compared to Project Site at Iniation





# *Evaluation*

- Relevance: Need for the program
- Adequacy: Ability to address the problem
- Progress: Tracking of program activities
- Effectiveness: Whether pre-determined objectives were met
- Impact: Long-term effects of the program
- Efficiency: Extent to which results are obtained less expensively
- Sustainability: Likelihood of program effects to continue





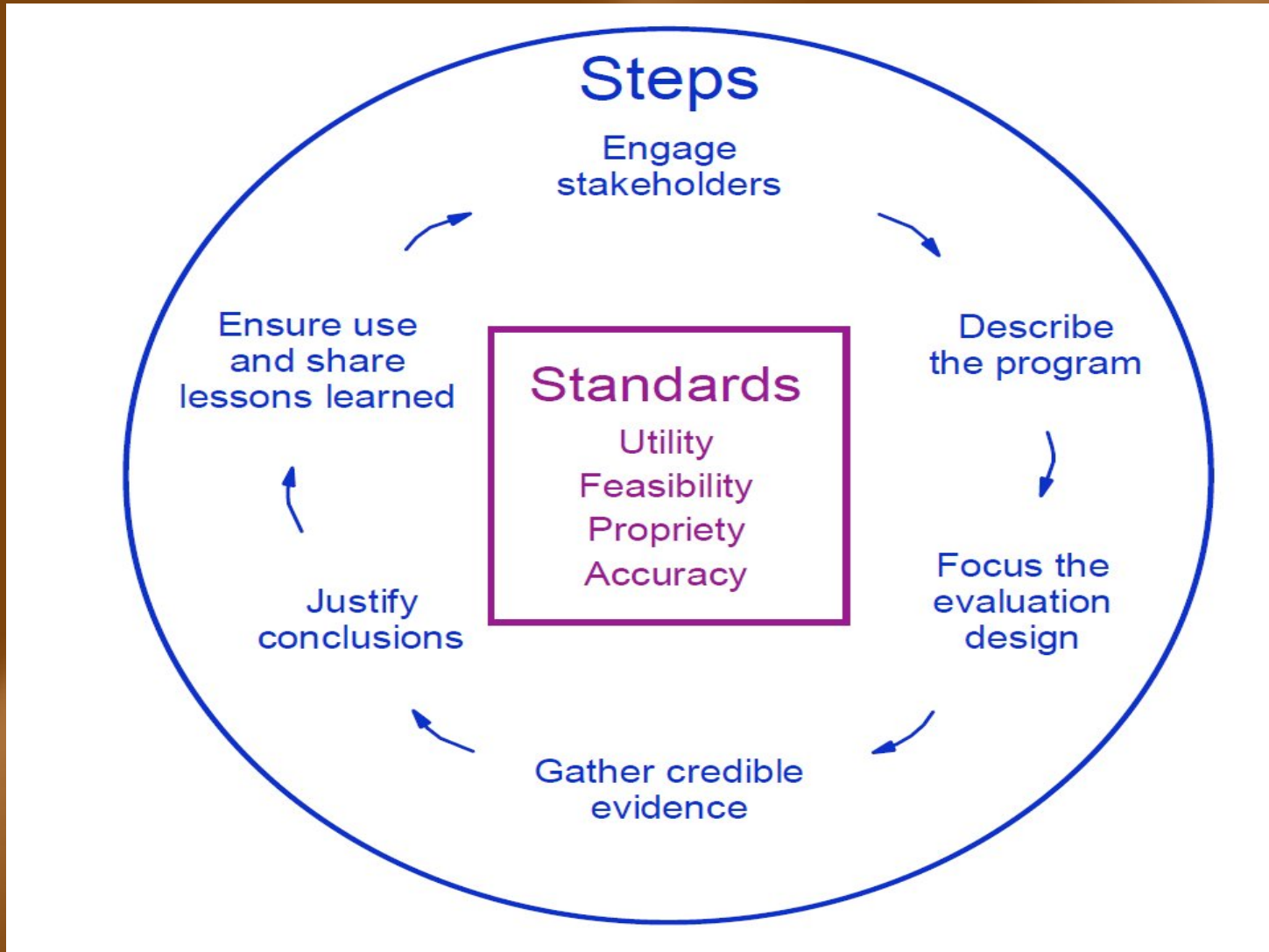
## *Conclusion & Recommendations*

- Multidisciplinary approach needed
- Improvement in process & measure outcomes
- Revenue increased
  - 70 patients
  - 74 visits
  - \$15,665 vs. \$8,140
- Diabetes Physician Recognition (DPR) effective June 2010
- EMR
- Legislation





# CDC Framework





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