Appendix II
THE CHRONIC CARE MODEL

The Special Diabetes Program for Indians enabled the Indian health system to further improve how it deals with diabetes as a chronic disease. The Special Diabetes Program for Indians funding has allowed many programs to implement basic elements of quality diabetes care that were not present prior to the funding. The IHS National Diabetes Program has promoted a "best practices" approach to preventing and treating diabetes during the Special Diabetes Program for Indians initiative, and as a result, programs have implemented new activities that address a variety of aspects of addressing diabetes as a chronic disease. The IHS National Diabetes Program used the Chronic Care Model as an evaluation tool to assess how the Indian health care system has implemented essential elements of quality diabetes care as a result of the Special Diabetes Program for Indians.

The Chronic Care Model was developed in the past decade by Group Health Cooperative of Puget Sound, WA with funding from the Robert Wood Johnson Foundation to help health systems develop the basic elements for improving care at the community, health system, provider, and patient levels.[1] The IHS National Diabetes Program has actually been implementing components of this national model for years, but the Special Diabetes Program for Indians has helped expand the number of programs that have been able to better provide this type of quality diabetes care.

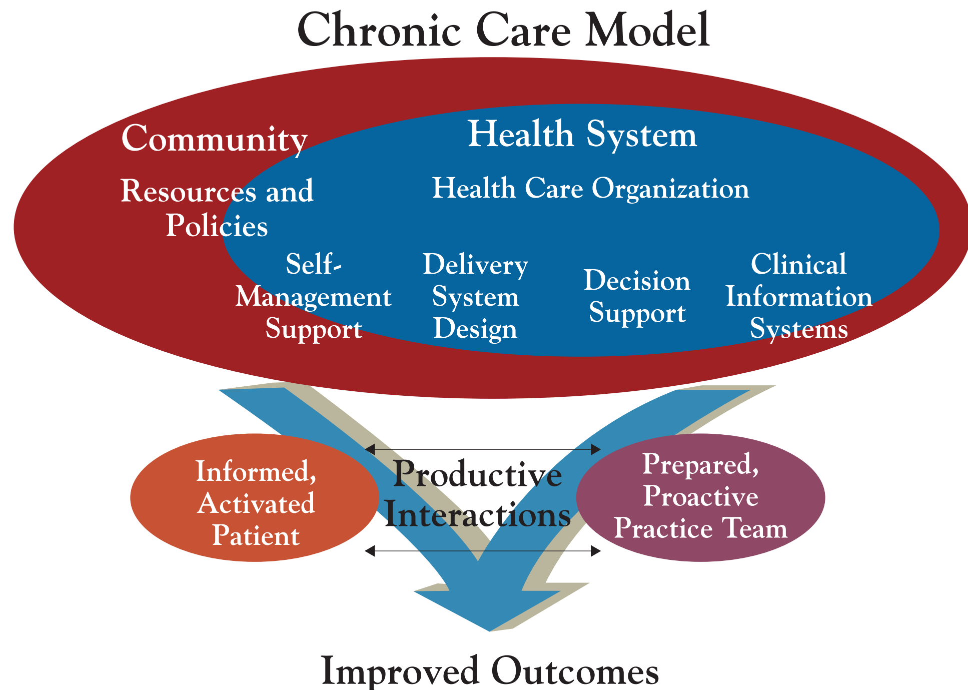
Science: The Chronic Care Model, when implemented through multifaceted interventions, can improve process and outcome measures for diabetes.[2] Using the Chronic Care Model has been shown to reduce short-term costs through reduced hospital admissions, emergency department visits, and physician consultations in people with diabetes.[3] Other studies have shown that improved glycemic control through implementing elements of the model is associated with short-term reductions in hospital stay and reduced hospital and outpatient use compared with usual care.[4]

The IHS National Diabetes Program used the Chronic Care Model as an evaluation tool to assess how the Indian health care system has implemented essential elements of quality diabetes care as a result of the Special Diabetes Program for Indians.

A. Components of the Chronic Care Model

The essential elements of a health care system that encourage high quality care for chronic diseases include the following:

1. Community Resources and Policies
2. Health System Organization
3. Self Management Support
4. Delivery System Design
5. Decision Support
6. Clinical Information Systems



Implementation of these elements – at the community, organization, provider, and patient levels – is associated with better outcomes of chronic disease care.

B. Evaluation using the Chronic Care Model

The Special Diabetes Program for Indians enabled the Indian health system to serve as an example of a large health system that includes most strategies recommended in the high quality care of individuals with chronic conditions. A recent review of the Special Diabetes Program for Indians grant program using the Chronic Care Model's *Assessment of Chronic Illness Care, Version 3*, revealed that the Special Diabetes Program for Indians and the IHS National Diabetes Program scored in the highest level for most components of the model (Table 1).

Table 1.
Evaluation of the Indian Health System using the Chronic Care Model.
A description of each component of the Chronic Care Model, how the Special Diabetes Program for Indians helped implement elements in each component, and examples or data are presented below.

Chronic Care Model Components	Description	SDPI Program Activities	Examples or Data
COMMUNITY RESOURCES AND POLICIES	Health system links and partners with community and regional resources	SDPI primarily funded tribes, and enabled greater partnerships between IHS programs and tribal communities.	258 (81%) of the 318 grant programs are managed by tribes Program reports of participation of tribal leaders and tribal health directors in planning and implementation of diabetes activities increased from 14% before the grants to 73% in 2002
		SDPI enabled more local community partnerships	Location community partnerships for diabetes activities increased with: • Tribal recreation wellness programs • Tribal health boards/councils • Social services programs • Tribal economic, cultural, religious programs or organizations
		SDPI enabled more partnerships with outside organizations	Partnerships with outside organizations increased: • Local schools systems • Colleges or universities • Local ADA affiliates • State and local cooperative extension services • State diabetes control programs
		SDPI enabled more national partnerships	National collaborations and partnerships were formed: • Federal agencies • AI/AN organizations • Diabetes expert organizations • Academic institutions • Other organizations
		SDPI led to the creation of the Tribal Leader Diabetes Committee, a group of tribal leaders focusing on addressing diabetes	TLDC formed in 1998, quarterly meetings since then, consultation on distribution of grant funds each year, partnerships with federal agencies and organizations, advisory on diabetes related activities, national advocacy

Chronic Care Model Components	Description	SDPI Program Activities	Examples or Data
HEALTH SYSTEM ORGANIZATION	Leadership, organizational strategy, and chronic care promotion	IHS National Diabetes Program has promoted coordinated care on all levels since 1979 through the national office, Area Diabetes Consultants, and network of diabetes programs	IHS National Diabetes Program with 11 staff, 13 Area Diabetes Consultants, and 19 model programs, manages the grant program for 318 grantees, sets standards of care, promotes comprehensive care of diabetes with a pubic health approach
		SDPI promoted chronic care according to standards through technical assistance and the sharing of Best Practices	Eight Regional Meetings allowed programs to share information and obtain technical assistance
		Tribal Leaders Diabetes Committee promotes chronic care	TLDC was the first tribal group to meet and work on a chronic disease

Chronic Care Model Components	Description	SDPI Program Activities	Examples or Data
SELF MANAGEMENT SUPPORT	Self management services provided and documented	Diabetes education services documented	IHS Diabetes Care and Outcomes Audit documents diabetes education services received each year
		SDPI allowed programs to implement and enhance diabetes education services and provide a variety of new types of diabetes education	Availability of organized diabetes education programs increased from 27% before the grants to 90% in 2002 Types of diabetes education expanded since the SDPI: • Diabetes support groups • Community and behavioral health services • Culturally appropriate diabetes education materials • TV, radio, PSAs, written materials, videos, school based curricula • Community based diabetes education was provided – health fairs, traditional methods, diabetes camps, group classes, workshops • Settings for diabetes education included clinics, groups and support groups • Staged diabetes management • Case management Diabetes education staff were hired • 58% of diabetes grant programs hired diabetes educators • Availability of RDs, PHNs, Medical Nutrition Services, and nutrition activities for family members increased
		SDPI enabled programs to adopt National Standards for diabetes Education Services	88 Programs completed the IHS Integrated Standards for Diabetes Education rankings (AHRQ Project) – of those, 79 ranked level 1 or less, 4 ranked level 2, and 5 ranked level 3.
		SDPI enabled IHS to apply and receive deeming authority for certification by CMS for diabetes education reimbursement	Level 2 programs can apply to IHS to obtain certification for reimbursement from CMS for diabetes education services

Chronic Care Model Components	Description	SDPI Program Activities	Examples or Data
DELIVERY SYSTEM DESIGN	Providers organized to proactively provide care via teams, care system	SDPI enabled Indian health programs and tribes to develop or enhance a team-based system of care	Use of key elements of care increased with the SDPI: • Diabetes registries (98%) • Diabetes teams (94%) • Diabetes clinics (69%) • Diabetes flowsheets (77%) Multidisciplinary team staff were hired: • RDs/PHNs (49%) • Diabetes educators (58%) • Medical specialists (podiatrists = 40%) • Physical activity specialists (40%) Availability of routine examinations and laboratory tests increased: • Foot examinations • Eye examinations • Dental examinations • A1C testing • Lipid testing • Tests for microalbuminuria • Urinalysis
Chronic Care Model Components	**Description**	**SDPI Program Activities**	**Examples or Data**
DECISION SUPPORT	Care organized around guidelines	SDPI enabled the IHS Standards of Diabetes Care (Guidelines) to be further implemented in Indian health programs	IHS Standards of Care were updated Staged Diabetes Management was used by 47% of the diabetes grant programs 14 Best Practices models were developed IHS Integrated Standards for Diabetes Education Programs were updated in 2002 Availability of diabetes related continuing education programs increased for health professionals and parahealth professionals

Chronic Care Model Components	Description	SDPI Program Activities	Examples or Data
CLINICAL INFORMATION SYSTEMS	Tracking patient care through registries, documentation, and feedback of ongoing care	SDPI enabled more programs to develop registries, use the IHS Diabetes Care and Outcomes Audit, and track national data through the annual grantee survey	Programs increased their use of registries and flowsheets to track patient care
		A compendium of all program activities is in development	More programs participated in the IHS Diabetes Care and Outcomes Audit since the SDPI: • 239 programs participated in the 2002 Audit representing 19,999 patients • Reports are available for feedback on the local, Area, or national levels • Intermediate outcomes of care have improved since the SDPI – A1C, blood pressure, lipid levels, cardiovascular risk factors, elements of care to prevent kidney disease
		Funding was used to improve diabetes data, including baseline data for prevalence, mortality, and to track complications	SDPI funding was used in each IHS Area to improve prevalence and mortality data The IHS Diabetes Data Warehouse was established to enable tracking of long-term complications using IHS RPMS data