Diabetes affects children & adults

Prevent type 2 diabetes

Control your diabetes better, visit your Doctor

Be active, eat healthy

La diabetes afecta a niños y adultos

evite la diabetes tipo 2

controle mejor su diabetes, visite a su médico

Se activo, come alimentos saludables

world diabetes day
día mundial de la diabetes
The Burden of Diabetes
## Cost-Effectiveness of Interventions for Preventing & Treating Diabetes

### Priority Level 1
- ✔ Glycemic control in people with A1c>9
- ✔ Blood pressure control in people with BP>160/95
- ✔ Foot care in people at risk

### Priority Level 2
- ✔ Preconception care
- ✔ Lifestyle DM prevention
- ✔ Influenza vaccine
- ✔ Annual eye exam
- ✔ Smoking cessation
- ✔ ACE inhibitors

### Priority Level 3
- ✔ Metforming prevention
- ✔ Cholesterol control (>200)
- ✔ Intensive glycemic control in people with A1c>8
- ✔ Screening for undiagnosed diabetes
- ✔ Annual microalbuminuria screening
Cost-Effectiveness (QALY US$) of Diabetes Mellitus (DM) Interventions in Latin America & the Caribbean

Preconception Care
Lifestyle Prevention
Smoking Cessation
ACE Inhibitors
Glycemic Control (A1c>9)
Foot Care
DM Screening
Micro Alb Screening
Glycemic Control (A1c>8)
Annual Eye Ex
BP Control (>160/95)
Metformin Prevention
Cholesterol Control (>200)
Influenza Vaccine

Cost Saving

Feasibility Level

Source: Disease Control Priorities in Developing Countries. Feasibility based on difficulty reaching target population, capacity, medical knowledge needed, capital required and social acceptability.
Chronic Care Model

COMMUNITY

Resources & Policies

Self-Management Support

Delivery System Design

Decision Support

Clinical Information System

HEALTH SYSTEM

Healthcare Organizations

Informed, Empowered Patient

Productive Interactions

Prepared, Proactive Practice Team

Improved Outcomes

Pan American Health Organization

World Health Organization
Six Focal Areas

- Healthcare Organizations
  - Visibly support improvement in chronic illness care at all levels of the organization
  - Provide incentives to encourage better chronic illness care
  - Facilitate care coordination throughout the organization
Chronic Care Model

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Improved Outcomes
Six Focal Areas

- Community Resources & Policies
  - Form partnerships with community organizations to support and develop interventions that fill gaps in needed services
  - Encourage patients to participate in effective community programs
  - Advocate for policies to promote health, prevent disease and improve patient care
Chronic Care Model

COMMUNITY
- Resources & Policies
- Self-Management Support
- Informed, Empowered Patient

HEALTH SYSTEM
- Healthcare Organizations
- Clinical Information System
- Delivery System Design
- Decision Support

PROFESSIONAL
- Practice Team
- Prepared, Proactive

Improved Outcomes

Productive Interactions
Six Focal Areas

- **Self-Management Support**
  - Emphasize the patient’s central role in managing his/her health
  - Use effective self-management support strategies that include goal setting, action planning and problem-solving
  - Organize internal and community resources to provide ongoing self-management support to patients
Chronic Care Model

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Healthcare Organizations
Decision Support
Clinical Information System
Self-Management Support
Delivery System Design

Informed, Empowered Patient
Prepared, Proactive Practice Team

Improved Outcomes

Productive Interactions
Six Focal Areas

- **Decision Support**
  - Embed evidence-based guidelines into daily clinical practice
  - Share evidence-based guidelines and information with patients to encourage their participation
  - Integrate specialist expertise and primary care
Chronic Care Model

COMMUNITY
- Resources & Policies

HEALTH SYSTEM
- Health Care Organizations
- Decision Support
- Clinical Information System
  - Delivery System Design

INFORMATION SYSTEM
- Self-Management Support

Implied Outcomes:
- Informed, Empowered Patient
- Prepared, Proactive Practice Team
- Improved Interactions

Prepared, Proactive Practice Team

Improved Outcomes
Six Focal Areas

- **Delivery System Design**
  - Define roles and distribute tasks among team members
  - Use planned interactions to support evidence-based care
  - Ensure regular follow-up by the care team
  - Give care that patients understand and that fits with their cultural background
Chronic Care Model

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Improved Outcomes

Productive Interactions
Six Focal Areas

- **Clinical Information Systems**
  - Provide timely reminders for providers and patients
  - Identify subpopulations for proactive care
  - Facilitate individual care planning
  - Share information with patients and providers to coordinate care
  - Monitor performance of practice team and care system
Breakthrough Series for the Improvement of Chronic Care (6–13 months timeframe)

Select Topic
(develop mission)

Planning Group

Develop Framework & Changes

Participants

Prework

Support

E-mail  Visits  Assessments  Telephone  Monthly Team Reports

LS 1  LS 2  LS 3  FINAL
The PDSA Cycle
Four Steps: Plan, Do, Study, Act

Also known as:
✓ Shewhart Cycle
✓ Deming Cycle
✓ Learning and Improvement Cycle
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Model for Improvement

Plan

Act

Study

Do
Repeated Use of the Cycle

Changes That Result in Improvement

Hunches
Theories
Ideas

DATA
VIDA Project

VIDA was a one-year intervention project focused on quality of diabetes care improvement in the state of Veracruz, Mexico. The intervention used the Chronic Care Model* and the Breakthrough Methodology* to promote collaboration between primary care teams to identify gaps in the provided care and find solutions.
Priority-setting: *Diabetes Care Model*

**Organization of diabetes care**

- **Self management support:**
  - Establish: patient goals, dm education program,
  - Support groups

- **Delivery system design:**
  - Reference system, specialist care

- **Decision support:**
  - Monthly meeting to ensure use of guidelines

- **Clinical information system**
  - QUALIDiAB

**Community linkages**

**Informed activated patient**

**Productive interaction**

**Prepared productive team**

**Better health for people with diabetes**
The intervention plan included:

- A structured diabetes education program
- In-service training on diabetes management and foot care
- Innovative reference system with specialist visit
- Monitoring system (QUALIDIAZ)
- Strengthen the *Grupos de Ayuda Mutua* (diabetic clubs) and the *promotoras* work

In addition, primary-care centers were able to implement other strategies to respond to specific needs
Change Package

Health Team Integration

Diabetes care improvement

Glycemic Control

Complications Prevention

Patient Support: “Grupos de Ayuda Mutua”

Educational Program

Act

Plan

Study

Do
Patient with good control (A1c< 7%) before and after the intervention among cases and controls
Change Package: Nicaragua

- Communication
- Coordination
- Educational Program
- Training
- Prevention of Complications
- Blood Glucose Control

Change Package: El Salvador

- Programa Educativo
- Clinical Information System
- Supplies
- Blood Glucose Control
- Prevention of Complications

Change Package: Costa Rica

- Integrated Care
- Electronic Record
- Support Groups
- PREVENTION/CONTROL DIABETES, METABOLIC SYNDROME & OBESITY
- STRENGTHEN LOCAL NETWORKS

Change Package: Guatemala

- BETTER CONTROL OF DM
- COMUNICATION
- EDUCATION
- CAPACITY BUILDING
- INFORMATION

Pan American Health Organization
Collaboration
Measure
Implement
Measure
Self-Management Support

% of population with documented goals

Target

Cycle 1
Cycle 2
Cycle 3
Cycle 6
Cycle 5
Cycle 4
Cycle 7
Cycle 8
Cycle 9

Patient Satisfaction
(average for 2-week period - all diabetic patients returning surveys)

target = 75%

Glycemic Control

Average % HbA1c

Target

Pan American Health Organization
World Health Organization
Chronic Care Model

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Clinical Information System: CDEMS, DM CARD

Informed, Empowered Patient

Productive Interactions

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Improved Outcomes
PATIENT'S RECORD CARD

Unit/Health Area: ____________________ Physician/Nurse: ____________________ Patient’s Name: ____________________

Gender: M □ F □ Date of Birth: __/__/____ Home Address: ___________________________________________________________

Complications: Retinopathy _ Neuropathy _ Nephropathy _ Diabetic Foot _ Amputation _ High Cholesterol _ Other? _____

MEDICAL VISITS

<table>
<thead>
<tr>
<th>Date</th>
<th>Tobacco/Alcohol Use</th>
<th>MEASURE</th>
<th>BMI</th>
<th>EXAMS</th>
<th>TESTS</th>
<th>TREATMENT</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Blood Pressure</td>
<td>Weight/Height</td>
<td>Foot</td>
<td>Eye</td>
<td>Blood Glucose/Alc</td>
<td>Lipid Profile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INSTRUCTIONS:
1. Write the unit or clinic as well as the physician’s and nurse’s names.
2. Write the patient’s name, gender, date of birth and home address.
3. Make a check mark (✓) if the patient has these complications, if not listed write the complication the patient has.
4. Write the date of the visit or encounter.
5. Inquire on tobacco and alcohol use; if positive answer write T+ or A+ in the corresponding box
6. Measure patient’s blood pressure, height and the weight and ascertain the BMI.
7. Ask the patient to remove shoes and socks and examine patient’s feet.
8. Examine retina after dilating pupils or refer the patient to the ophthalmologist once per year.
9. Review and write the results/ (or request new) fasting blood glucose test, A1c and lipid profile.
10. Explain to patient his/her educational goals as per the protocol for the non pharmacological treatment of diabetes mellitus. Make a check mark (✓) in the corresponding box if diet and exercise education are provided. Using codes in parenthesis, write what other educational subjects are discussed with the patient i.e. (1) General knowledge of diabetes; (2) Administration of medications and related risks; (3) Relation between diet, exercise, and blood glucose and other metabolic indicators; (4) Foot care; (5) Use of medical and community services; (7) Negative consequences of risk behaviors such as smoking and alcohol use, and ways of eliminating these behaviors.
11. Ask and write the name of all medicines and doses that the patient is taking.
12. Write the date of Influenza or Pneumococcal vaccination.

### Standards of Diabetes Care

<table>
<thead>
<tr>
<th>Component</th>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Pressure</td>
<td>Each visit</td>
<td>&lt;130/80</td>
</tr>
<tr>
<td>Eye Exam</td>
<td>Annual</td>
<td>Ophthalmologist/ Optometrist</td>
</tr>
<tr>
<td>Dental Exam</td>
<td>Every 6 months</td>
<td>Teeth and gum exam</td>
</tr>
<tr>
<td>Brief Foot Exam</td>
<td>Each visit</td>
<td>Remove shoes and socks</td>
</tr>
<tr>
<td>Complete Foot Exam</td>
<td>Annual</td>
<td>Visit the podiatrist if high risk</td>
</tr>
<tr>
<td>Flu vaccine</td>
<td>Annual</td>
<td>If available</td>
</tr>
<tr>
<td>Hemoglobin A1c</td>
<td>Every 3-6 months</td>
<td>&lt;7%</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>Annual</td>
<td>&lt;150 mg/dl</td>
</tr>
<tr>
<td>Cholesterol total</td>
<td>Annual</td>
<td>&lt;200 mg/dl</td>
</tr>
<tr>
<td>LDL Cholesterol</td>
<td>Annual</td>
<td>&lt; 100 mg/dl</td>
</tr>
<tr>
<td>HDL Cholesterol</td>
<td>Annual</td>
<td>&gt;40 (men) &gt;50 (women)</td>
</tr>
<tr>
<td>Proteinuria /albuminuria</td>
<td>Annual</td>
<td>&lt;30</td>
</tr>
<tr>
<td>Treatment Goals</td>
<td>Each visit</td>
<td>Discuss with patient</td>
</tr>
<tr>
<td>Blood Glucose</td>
<td>Monitor</td>
<td>Recommend if needed</td>
</tr>
<tr>
<td>Healthy Eating</td>
<td>Each visit</td>
<td>Recommend always</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>30”, 5 times/week</td>
<td>Recommend if indicated</td>
</tr>
</tbody>
</table>
Chronic Care Model

COMMMUNITY

Resources & Policies

Self-Management Support

HEALTH SYSTEM

Healthcare Organizations

Delivery System Design

Clinical Information

Decision Support

PREPARED, PROACTIVE PRACTICE TEAM

Informed, Empowered Patient

Productive Interactions

Improved Outcomes

COMMUNITY HEALTHCARE ORGANIZATIONS

Clinical Information

Delivery System Design

Decision Support

PREPARED, PROACTIVE PRACTICE TEAM

Informed, Empowered Patient

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COMMUNITY HEALTHCARE ORGANIZATIONS

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PREPARED, PROACTIVE PRACTICE TEAM

Informed, Empowered Patient

Productive Interactions

Improved Outcomes
Build up on existing strategies such as the CHRC guidelines, the Caribbean Protocol for Nutritional Management of Diabetes and Hypertension, CCH3
Collaboration
To Do List

- Share information with the PAHO local office
- Define national and local teams
- Organize initial meeting
- Define scope (public, private, national, demonstration sites?) and select clinics
- Measure baseline
- Organize LS1: Implementation of the CHRC Guidelines. Pocket guide… at least 30 health providers.
- Report by the end of January 2009
- Implement changes, measure again and report
- Bring results to ILS-2 (March 2009)