

Draft for Approval
2 February 2001

2000 Strategic Plan

Diabetes and Flu/Pneumococcal Campaign

**A Program To Encourage People With Diabetes
To Get Pneumococcal and Annual Flu Vaccines**

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February 2001**

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I. Problem Definition and Description: 1997 - 1999

Three years ago, Centers for Disease Control and Prevention (CDC) research revealed a simple, dramatic fact: People with diabetes are three times more likely to die of flu/pneumonia complications than the general population. Since then, CDC has worked on a national basis and with states to transform that statistic into a multifaceted campaign to save lives. This document details the stages of planning and progress that have gone into this campaign.

A. Data Platform

Epidemiological research captured by CDC revealed that people with diabetes are at greater risk of both contracting and dying with the flu and pneumonia. Each year 10,000 to 30,000 people with diabetes die with flu or pneumonia complications.

HealthStyles research, purchased by CDC in 1996 and again in 1998, also revealed that only 40% of people with diabetes receive an annual flu shot. This leaves a large at risk population for whom a flu shot would be a simple, safe, inexpensive prevention measure.

Environmental scanning showed that other organizations such as the American Diabetes Association and the National Eye Institute, are already raising awareness of other specific risks such as foot and eye disease. Rather than duplicating these efforts, CDC sought to address the wider issue that people with diabetes are more vulnerable to common, everyday health risks, and that they can take easy preventative steps to ensure good health and to control their diabetes. The research indicating low rates of flu and pneumonia vaccination among people with diabetes compelled the CDC Division of Diabetes Translation to target these two co-morbidities (the impact of two diseases on mortality) for its first prevention campaign.

Because people with diabetes are the ultimate audience, formative focus groups were held to evaluate their knowledge about flu, flu shots and their disease, finding very little awareness about this risk. Additionally, they indicated that strongest motivation for people with diabetes to get an annual flu shot was their doctor's recommendation for it. Focus group insights were incorporated into developing the various creative campaign elements and materials. Health professional focus groups similarly revealed that a flu shot was not an initial concern when seeing diabetes patients, many were not aware of the co-morbidity risk, and felt it was difficult during their limited patient visits to adequately cover all diabetes care needs including once a year prevention measures.

To carry the message through public health channels and to media outlets, in 1997 CDC polled Diabetes Control Program (DCPs) directors in every state on their ability to deliver this message to local levels. Over 70 percent reported wanting to implement a communication campaign on this topic.

CDC identified three components in the development and implementation of the campaign:

- An awareness building campaign about this risk for people with diabetes
- A health systems intervention to get health professionals to recommend and give more flu shots to diabetes patients
- A capacity building program of training and technical support for state DCPs to conduct the campaign

B. BRFSS & MMWR Findings

Additional data in support of the campaign was published in an MMWR article, “Influenza and Pneumococcal Vaccination Rates Among Persons with Diabetes Mellitus,” in October 1999. The article featured Behavioral Risk Factor Surveillance System (BRFSS) data collected in 1997 from 7011 respondents with diabetes.

The data revealed that of the adults with diabetes 52.1 percent reported receiving flu shots within the past 12 months, and 33.2 percent reported ever receiving pneumococcal vaccine. Further analysis of the data revealed varied immunization behaviors according to ethnicity, age, gender, and geographic location. Non-Hispanic whites were more likely to report receiving pneumococcal vaccine and flu shots than Non-Hispanic blacks and Hispanics. As age increased reports of vaccination also significantly increased, a finding that helped support the campaign decision to target people with diabetes age 25-54. (For the full text of the MMWR article, **see Appendix H**)

In 1999, following a technical review of published research on pneumococcal rates among diabetes patients, including the MMWR mentioned above, and the pros and cons of pneumococcal vaccinations, CDC expanded the campaign to include messages about pneumococcal vaccination.

In 2000, The American Diabetes Association also added flu and pneumococcal vaccinations to their Standards of Care for health professionals to follow with diabetes patients. This brings another strong leg to the CDC message platform toward health professionals.

II. Problem Analysis

The data clearly indicated a need for a program that would target people with diabetes and health professionals treating them on a national basis, and work through DCPs to state levels. CDC determined these goals as appropriate for the campaign.

A. Goals of the Initiative:

1. Raise awareness of the increased risk for people with diabetes who are infected with influenza or the pneumococcal virus.
2. Achieve an increase in the number of people with diabetes who receive pneumococcal and annual flu shots.
3. Initiate a health systems level intervention.
4. Increase the capacity to implement this health communications program on state and local levels.

B. Target Audiences

The **target audiences** are defined as:

- People with diabetes (primarily ages 25-54, including African American and Latin American populations)
- Those impacted by the disease, e.g. family members
- Health care providers caring for people with diabetes and their intermediaries (MCOs, pharmacists)

In a program seeking a behavior change, such as getting an annual flu shot, we look to subsegment the target audience in order to direct messages to those for whom it is needed most. The audience of people with diabetes could be segmented to 25-54 years because these represent the concentrated years of adult onset. The primary target for current adult immunization programs for influenza and pneumococcal programs have been people with diabetes, ages 54 and above, and those at high risk due to chronic diseases and compromised immune systems. Health professionals receive recommendations and reminders to vaccinate these groups through Medicare and other senior standards of care. There were ample messages directed to older age groups about the topic of annual vaccinations to be able to eliminate them from our target group.

African American and Latin American population segments are disproportionately affected by diabetes and are less likely to receive flu/pneumococcal vaccines. Messages about annual preventive care are even more important for these populations.

To picture our target audiences, we develop information about them as a group, and even more importantly, we draw a vivid picture of them as individuals. This helps us better understand their beliefs, attitudes, lifestyles, and cultural influences, which allows us to better plan for the channels to reach them and the best opportunities to persuasively reach them. Complete **Audience Profiles** were developed for Caucasian, African American and Hispanic/Latin American populations with diabetes. In 2000, profiles were developed for Asian American, Native American and Health Care Providers. (See **Appendix D**)

C. Campaign Implementation

CDC employed a **multi-disciplinary approach** to reach these audiences:

- A nationwide communications campaign conducted to raise awareness that people with diabetes need an annual flu shot
- Health systems-based interventions developed to ensure health professional recommendation of a flu shot, and flu shot availability

Before being implemented on a national scale, these approaches were piloted and extensively evaluated in 1997 in four states: Florida, Texas, Montana and California. During the pilot phase, the state DCPs teamed with their state counterparts from the National Immunization Program to conduct the program in each pilot state.

With the national roll out of the campaign, beginning in 1998, CDC partnered with Diabetes Control Programs (DCPs) in each state to bring the campaign to state level. The states were asked to work with managed care organizations, retailers and other intermediaries, the state immunization program director, and public health information officer, to use their networks to educate people with diabetes about the flu. Each year, state DCPs have been encouraged to expand their participation and bring in more partners to help conduct the program.

A rigorous process for capacity building was instituted beginning with the pilot program, with other elements added in for subsequent years. These have included full day training sessions, sessions at the CDC Annual Diabetes Conference, a two-hour satellite training broadcast to all states, teleconferences, and technical assistance. DCPs have been evaluated each year of the campaign and throughout the campaign to determine further needs and training enhancements. More details on this are on page 14.

III. Communications Program Planning

A. Program Planning:

For the mass media communication campaign, a **Creative Brief** was the planning instrument for all creative materials. (See Appendix B)

Using a creative platform that could eventually cover multiple risks and prevention steps in future campaigns, CDC's creative contractor, Prospect Associates, developed the overarching campaign theme, **"Diabetes. One Disease. Many Risks."** The tag line, **"With Diabetes, Prevention is Control."** illustrates that diabetes is a disease that can be controlled with some simple prevention measures. Several creative concepts were developed and tested with people with diabetes, in various ethnicities and locales, to ensure effectiveness of the concepts and their ability to motivate the target audience. The final concept – and the one that resonated best with people with diabetes - used the visual metaphor of a life preserver to communicate the significance of what a flu shot is to people with diabetes. The target audience felt it best expressed their own empowerment to do something simple to help control their disease.

B. Chronology of Program:

1997

- Research is performed
- Strategic program plan is developed
- Creative concepts developed
- Concepts are tested with the target audience
- Creative and other programs materials are developed and produced
- Pilot states are trained
- Program materials are distributed to media
- States follow up on distribution of program materials
- States are evaluated on the program and its usability
- Media results are evaluated.
- National roll out is decided for 1998 flu season

1998

- National rollout is announced at Annual Diabetes Conference in April
- Training session on conducting a media campaign is held at conference
- Additional formative research is gathered with health professionals
- Creative materials are reproduced
- States request quantity of posters and for state from CDC
- Satellite training session is held in July
- State implementation kits are distributed
- Media kits are sent to states
- Campaign is rolled out in August
- Media kits are distributed nationally
- PSAs distributed nationally
- States follow up with media and conduct health systems interventions
- States are evaluated on the program, its accomplishments, additional needs
- Media results are evaluated
- Program enhancements are determined for 1999 flu season

1999

- National program is announced at Annual Diabetes Conference in April
- Training session is held at conference
- States begin lining up partners for the campaign
- Current creative materials are produced
- States request quantities of posters and brochures from CDC
- Additional creative materials are produced:
 - Event poster
 - Patient reminder postcards
 - Physician reminder postcards
 - Small space print PSA
 - All materials included on CDs for states to use, adapt, reprint
- Satellite training session is held in July
- State implementation kits are distributed
- PSAs reproduced and packaged for send out
- Media kits are sent to states
- Campaign kicks off end July
- Media kits are distributed nationally (News lead changed each year to keep information fresh)
- PSAs distributed nationally
- States follow up with media and conduct health systems interventions
- Monthly teleconferences held with states (July – February)
- States are evaluated on the program, partners, accomplishments, additional needs
- Media results are evaluated
- Refinements determined for 2000

2000

- National program is announced at Annual Diabetes Conference in April
- Training session is held at conference, one-on-one sessions also held
- States begin lining up partners for the campaign
- CDC targets additional national partners for the campaign year
- DCPs asked to add in partners for the year
- PSAs reproduced and packaged for send out
- States use materials from previous year's CD and implementation kit
- CDC provides states with Swiss-cheese (fill-in-the-blank) press release to use
- CDC releases national press release on flu vaccine delay, and populations reminded to get vaccines, including people with diabetes
- Campaign rolls out in November, due to flu vaccine delay
- Monthly teleconferences held with states to update on vaccine delay, timeline and activities (July – February)
- States are evaluated on the program, partners, accomplishments, additional needs
- Media results are evaluated
- Refinements determined for 2001

C. Materials Developed:

Prospect created materials for four components to be used at national and local levels:

- **News media relations:** Initially, **press kits** were created and sent to English and Hispanic media outlining the connection between diabetes and the flu. DCPs also received press kits to use in smaller markets. A **pre-printed newspaper story** in English, Spanish and tailored for African American audiences was developed and sent to smaller weekly newspapers. The **news release** was sent over the news wire, and top media contacts were targeted.
- **Public service advertising: Television, radio and print PSAs** were created and sent to public service directors. The television PSA used verbatim quotes from the target audience focus groups. In the words of one participant, "A flu shot? Guess you could say it's like a life preserver when you have diabetes." A strong call-to-action encouraged viewers to "see your doctor about getting a flu shot today." **Teaser packaging** showed the life preserver with the line, "Open this package to save thousands of lives" to entice busy public service directors to use the PSAs. **Radio and print PSAs for African Americans** with diabetes were developed and tested for media serving that audience.
- **Consumer and health care provider materials:** Nearly 1 million consumer **information brochures and posters** for health care providers' waiting rooms were printed and sent to states for distribution. In 1999, reproducible materials including **a low literacy brochure, an informational insert on pneumococcal vaccination, transit ad/billboard design, physician and patient reminder postcards, campaign letterhead, bill stuffers, diabetes flu event posters, and all other print materials** were developed and sent on CDs to state DCPs. Campaign materials are also available on the CDC Diabetes and Flu/Pneumococcal campaign Web site.

- **State Implementation Kits:** Kits were created to guide the state DCPs and their local partners (county health departments, managed care organizations, etc.) as they implemented the campaign on a local level. Included were specific tips on developing story angles, interviewing and pitching, and sample press releases and pitch letters. Such materials kept campaign messages consistent across all states.

Health systems interventions have been developed and encouraged throughout the states including incorporating annual flu shots for people with diabetes into health systems delivery. Some DCPs and their partners have created other materials using the campaign information and creative, but adapting them to their needs. (More details on this are on page 13)

D. Implementation of Materials

1. Rationale:

The program is a relay carried out at two levels. CDC performs the national campaign initiative by creating audience-tested materials, providing training and technical assistance to states, and conducting the national media campaign overlay. States, organized by the DCPs, perform the local leg by running materials locally to the key markets in their states, and orchestrating health systems interventions, and evaluation.

The year 2000 flu vaccine delay and potential shortage caused several alterations to CDC plans for the program. First, material distribution was delayed until November 1 to allow for vaccine to reach states. Second, state DCPs and their partners implemented delays in their own plans, with some partners abandoning plans for flu shot clinics. The news media coverage of the shortage caused many people not to seek, or to delay receiving vaccine, for which the impact will not be known until the end of the flu season. The delay in vaccine delivery may also have an adverse effect on media usage of diabetes flu program materials this year, which will not be fully measured until the end of March 2001.

2. Materials Packaging and Distribution Plan

States receive a requested quantity of consumer posters and brochures for distribution. They receive a sample quantity of all other materials and a CD disk in Quark or PageMaker to take to their printer to develop quantities for distribution.

(See Appendix E for a complete list of communications materials)

3. Public Service Advertising:

English public service advertising materials are distributed and tracked (through Neilsen) by Goodwill Communications with monthly reports sent to Prospect. Spanish materials are distributed and tracked by Prospect partner agency, Bienestar LCG.

a. English radio PSA packets (5,300 quantity)

- Pre-printed radio envelope
- Cassette tape, with custom face label
- OR reel-to-reel tape, with custom box label

- Script booklet, with recorded PSA script, also with :10, :20 and :30 second announcer read scripts
- Radio bounceback card that PSA director sends back with number of airings

b. Spanish radio PSA packets (500 quantity)

- Same as above, but all elements are in Spanish

c. African American radio PSA packets (700 quantity)

- Same as above, but all materials are designated for African American audiences

d. English print PSA packets (5,250 quantity)

- Pre-printed print envelope
- Print PSA in two sizes
- Cover letter

e. Spanish print PSA packets (650 quantity)

- Same as above, but all elements are in Spanish

f. African American print PSA packets (500 quantity)

- Same as above, but all materials are designated for African American audiences

g. English TV PSA packets (1,470 quantity)

- Cardboard mailing box
- Mailing label with custom art
- Cover letter/photocard showing frames from the TV spot
- Tape with generic label
- Dub wrapper label
- Television bounceback card which is sent back to public service director showing number of airings

h. Spanish TV PSA packets (360 quantity)

- Same as above, but all elements are in Spanish.

E. News Media Outreach

To generate news stories in **long-lead print media** about the need for people with diabetes to receive annual flu shots and pneumococcal vaccines, a special media outreach was conducted.

- A media list was developed of feature magazines for men and women, sports and health publications, some national news magazines and medical trade publications.
- A pitch letter was developed for the publications with the news angle of “Recent news reports of a potential flu vaccine delay and shortage could discourage millions of Americans from getting their annual flu shot. Such action could leave many at risk for life-threatening influenza and pneumonia infections, especially the nearly 16 million people with diabetes in the US and those with other chronic infections.”
- Diabetes and Flu Fact Sheet

- Contact was made with all publications on the media list.

A **national news release** about the need for influenza shots for those at risk is developed and sent out by the Department of Health and Human Services each season, and CDC made a number of press statements updating the delay in vaccine delivery.

CDC developed a “**Swiss-cheese**” **press release (fill-in-the-blank release)** that was sent to states to use for their Diabetes and Flu/Pneumococcal programs.

F. Association Outreach

To ensure that other non-profit health and work place organizations which serve health professional members know and distribute information about the need for annual flu shots and pneumococcal vaccine for people with diabetes, a special outreach was developed. The goal was to secure visibility in health professional newsletters and association publications so that the messages would filter down to state chapters and assist DCPs with partnerships, as well as remind health professionals of the need for flu shots with people with diabetes. (See **Appendix F for a complete list of targeted Associations**)

This included:

- Development of target list of health professionals groups, web content managers, and other related organizations of the target populations
- Distribution of a pitch letter and fact sheet

G. Partnership Outreach

Partners are key for states to be able to disseminate the messages and affect flu vaccination among target audiences. In previous years, states have worked with pharmacy chains, managed care organizations, and peer review organizations (PROs) as partners.

With a goal of developing up to three national partners to work with this year that states could tap into, we formalized a partner approach. (See **Appendix G for a complete list of targeted companies**)

This approach included:

- Development of a highly targeted list of partners to approach
- Development of a package of information to send to targeted partners, including background on the program and its results, participation by states, types of activities that lend themselves to partnership
- Contact with all target partners on the list

We have secured **four national partners** in 2000. PharmaseeTV is running the television public service announcements in 250 independent pharmacies across the country. Osco Drug is distributing the brochures and fact sheets at their *Eating Healthy Diabetes* Seminars and posting posters and distributing brochures at 50 stores offering immunizations. Rite Aid Corporation is placing posters in 80 of their stores. The American Pharmaceutical Association (APhA) included our information in their list-serve reaching 1,000 pharmacists and posted Diabetes Flu posters at their immunization certificate training sessions for pharmacists, and distributed posters,

brochures and pneumococcal inserts to pharmacy students conducting community awareness programs nationwide about the benefits of immunizations and diabetes self-management.

The strategy in 2001 is to expand these partnerships and create new ones.

H. Program Results

In 1999:

- 180 million consumers or 73 percent of the US population were exposed to campaign messages
- 65.5 million more consumers were exposed to campaign messages than in 1998
- TV PSA usage was up over 41,000 airings over 1998
- TV PSAs ran on 643 stations, radio PSAs ran on 706 stations, print PSAs ran in 878 different newspapers and magazines
- 453 different newspapers ran diabetes flu stories
- 42 states participated in the program

Each year, the program has reaped increased PSA usage and news media attention. States have become more adept at arranging stories on their own as well.

1997 (4 pilot states)

Print News

<u>State</u>	<u>Number of Stories</u>	<u>Circulation</u>
California	50	2,340,800
Texas	60	2,182,216
Florida	37	2,505,480
Montana	4	67,352

Print PSA

<u>State</u>	<u>Number of Placements</u>	<u>Circulation</u>
California	1	10,324
Texas	1	21,000
Florida	3	48,595
Montana	2	20,472

Matte Story

<u>State</u>	<u>Number of Placements</u>	<u>Circulation</u>
California	4	103,750
Texas	4	54,832
Florida	6	182,282
Montana	No report received.	

TV PSA

<u>State</u>	<u>Number of Placements</u>
<i>English</i>	

California	7 stations, 115 times
Texas	7 stations, 135 times
Florida	6 stations, 157 times
Montana	3 stations, 216 times (paid for by the state)

<i>Spanish</i>	
California	6 stations, 48 times
Texas	1 station, 2 times

Radio PSA

<u>State</u>	<u>Number of Placements</u>
<i>English</i>	
California	11 stations, 65 times
Texas	3 stations, 35 times
Florida	8 stations, 45 times
Montana	1 station, 15 times
No state indicated:	5 stations, 35 times

<i>Spanish</i>	
California	2 stations, 20 times
Texas	2 stations, 10 times
Florida	2 stations, 25 times

August 1998 – March 1999 (National roll out)

TV News

<u>Number of Stories</u>	<u>Viewers Tracked</u>	<u>Estimated Reach</u>
26	127.6	1,748,100

Print News

<u>Number of Stories</u>	<u>Circulation</u>	<u>Estimated Reach</u>
472	9,266,336	37,065,344

Matte Story

<u>Number of Stories</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English – 368	4,496,414	17,985,656
Spanish – 13	357,932	1,431,728
African American – 15	265,932	1,063,728

Print PSA

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
406	4,672,854	18,691,416

AP Story

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
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169	7,677,989	30,711,956
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TV PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value</u>
205	7,983	\$1,086,870

Radio PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value</u>
772	92,868	\$873,589

**TOTAL
MEDIA**

2472

**TOTAL
TRACKED**

26,865,057

**TOTAL
ESTIMATED**

108,697,928

September 1999-March 2000

Print News

<u>Number of Stories</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-396	7,625,057	30,500,228

Print PSA

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-440	30,105,613	120,422,452
Spanish-38	6,076,781	24,307,124

Matte Story

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-7	189,718	758,782
African American-42	553,148	2,212,592
Spanish-4	77,500	77,500

TV PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value/Reach</u>
English-626	48,985	\$2,759,635 (Value)
Spanish-17	2803	4,169,700 (Reach)

Radio PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value/Reach</u>
English-602	70,075	\$669,864 (Value)
Spanish-95	8386	3,859,750 (Reach)

**TOTAL
MEDIA**

2288

**TOTAL
TRACKED**

44,758,066

**TOTAL
ESTIMATED REACH**

179,779,935

November 2000 – December 2000 (Final results will be available in March 2001)

Print News

<u>Number of Stories</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-185	5,683,669	22,734,676

Print PSA

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-2	25,000	100,000

Matte Story

<u>Number of Placements</u>	<u>Circulation</u>	<u>Estimated Reach</u>
English-14	123,848	495,632

TV PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value/Reach</u>
English-132	4,342	\$269,223 (Value)

Radio PSA

<u>Number of Stations</u>	<u>Number of Airings</u>	<u>Estimated Value/Reach</u>
English-336	35,817	\$342,772 (Value)

TOTAL**MEDIA**

669

TOTAL**TRACKED**

5,872,676

TOTAL**ESTIMATED REACH**

23,490,704

- We estimate that the actual reach may be up to four times the tracking number. This is because the tracking service generally finds only about 25 percent of articles or broadcast in small newspapers or cities.
- Estimated value is the amount we would have paid if we had purchased the airtime.
- Television PSA placements include cable television stations which were distributed in a separate package.

IV. Health Systems Intervention

Each year, DCPs are surveyed to determine the extent of:

- Participation in the program
- Increase in partner and health intervention activity
- Use of the materials
- Helpfulness of technical assistance
- Success of their effort
- Suggestions for improvements

States are encouraged to track increases in flu shots among people with diabetes, to include questions to measure increases in BRFSS every two years, and to determine and measure smaller impacts in local population areas. States also incorporate and measure campaign efforts in many other ways, including:

A. Collaboration:

- Integrate into standards of care “Clinical Practice Guidelines” vaccination services for people with diabetes with provider groups/organizations.
- Work with other groups such as NIP, HMOs, PROs, state coalitions, community-based organizations, federally qualified health centers (FQHC), and community health centers to integrate vaccination into health systems for people with diabetes.
- Help other groups integrate vaccination for people with diabetes, including state Medicaid programs, local PPOs, fee-for-service groups, specialist service groups (endocrinologists), and pharmacists.

Partnership efforts have increased every year, and have included:

1997: States in the pilot program partners with state National Immunization Program directors.

1998: State partners included HMOs, Blue Cross/Blue Shield, Kaiser Permanente, HCFA and the PROs, pharmacies like CVS and Fred Meyers

1999: State partners increased in addition to those used in 1998 to include others such as Veteran Administration, hospitals, church groups, community health centers, American Diabetes Association or Foundation chapters, dialysis centers, kidney foundations, universities, minority focused coalitions, diabetes educators, local health departments.

2000: National partners were brought in to help distribute materials and included PharmaseeTV, Osco Drug, Rite Aid Corporation, the American Pharmaceutical Association (APhA).

B. Data Collection:

- Identify local sources of baseline data (BRFSS, HCFA billing data, state Medicaid, PPOs, pharmacy data).
- Assess local levels of vaccination among people with diabetes.
- Monitor outcomes of proposed intervention strategies through data collection. Baseline, post-intervention data, and case control should focus on the increases of flu vaccination in people with diabetes.
- Develop time-limited, measurable objectives based on the Healthy People 2010 goals for adult immunization, with particular emphasis on influenza vaccination levels.
- Work with drug company representatives that provide influenza vaccines as a possible source to see if there has been an increase in the use of influenza vaccine in an area where interventions are conducted (this source will not be diabetes-specific, however).

V. Increasing Capacity to Implement and Manage the Program

A. Program Implementation and Management:

At CDC, the program has a technical monitor for the program and others in the Diabetes Translation Division health communication branch who oversees the program. They are assisted

by CDC's creative communication contractor, Prospect Associates, which handles creative materials for the program, partner outreach, assists with capacity training, and results collection.

In 1999, we began a program of monthly teleconferences with DCPs to cover different aspects of conducting the campaign and share information among states. This is continuing. Prospect assists with setting the agenda for the call, participating on the calls, taking minutes and distributing these following the call to CDC and state DCPs.

Meetings are held every two weeks by CDC staff to review activity and discuss program needs. Budgets and activities are tracked and reported to CDC on a monthly basis.

DCPs have largely been enthusiastic partners because they feel the campaign represents a single modifiable risk with one call to action: Get a flu shot. They feel it's a health problem upon which they can have an impact. Although campaign materials have been developed for different target audience segments – such as Hispanic and African American audiences, primary care physicians, diabetes educators – all have focused on the risk/flu shot benefit in the same manner. When we go to add on more audiences, while we may adjust the message tone and look to make them relevant, we need to stay focused on the risk/benefit that has made the campaign so effective.

B. Process evaluation:

Process evaluation is conducted by Prospect on the campaign implementation to measure:

- Number of states participating
- Number and type of partners
- News media stories and potential consumers reached (in print and broadcast)
- Public service advertisements shown and potential consumers reached (in print and broadcast)

VI. Strategic Recommendations for Future Years

As the campaign continues to evolve nationally and on a state level, we must remain focused on what has helped to build it thus far, and how to increase the impact of the program. These are the opportunities we see to guide our strategic efforts:

- Stay focused on the singular message of getting flu and pneumonia vaccinations, even with new audiences.
- Emphasize more ways to deliver shots to people with diabetes.
- Integrate organizations/professions that already have links with diabetes patient care.
- Help DCPs move toward partnerships and interventions that impact shot delivery, with less of their emphasis on mass media and materials dissemination.
- Leverage key relationships with organizations that reach the Hispanic and African American communities and other audience groups, as they are added to the program.
- Build sustainability for the program by including DCPs and other professionals into evolution plans.

Reaching and working with more health professionals...

The goal for the program is simple: Motivate the consumer audience to get a pneumococcal shot and an annual flu shot. Everything we propose, everything we do, should be targeted toward helping DCPs do this. First, we help create more opportunities to deliver shots to diabetes patients, and we need to minimize missed opportunities for reminding them they need one. This includes moving beyond the primary care doctor to work with the entire continuum of health professionals involved in a team approach to care of diabetes patients: from endocrinologists, nurses, dietitians, specialists like nephrologists, podiatrists, ophthalmologists, diabetes educators, hospital nutritionists, and pharmacists. All have national and state organizations we can work with and whose members still need to receive our messages. It may be possible to motivate them to participate in immunization efforts once they are aware of the risk. Reaching the publications of these professionals organizations with our message is also part of the communication plan for the coming years.

Forging new partnerships and programs...

From our evaluations, we know that most DCPs distributed materials as their primary health intervention. Experience tells us that's not enough to accomplish change. We also need more access points such as health fairs, pharmacists giving flu shots, and community diabetes flu clinics. Second, we need to build programs, training and technical assistance, partnership kits, and easy-to-organize interventions that help DCPs focus more on immunization opportunities than on materials dissemination. We may consider developing 3-4 "vaccine intervention ideas" that DCPs can implement. This may include programs that pair nurses and work sites, pharmacists and their stores, piggybacking on immunization activities and bringing together those service deliverers (MCOs, pharmacies, provider organizations and pharmaceuticals) with those with the desire (public health and non-profit groups) to create new promotions that offer flu and pneumonia shots for people with diabetes. The National Vaccine Program Office has been working on encouraging non-traditional sites for immunization such as churches, billiard and bingo halls, and community centers. Their efforts might be incorporated into ours, as well.

Identifying more people who need to know...

While our main consumer audiences is 25-54 years, the primary target audiences for influenza/pneumococcal programs has been primarily people with diabetes, ages 60 or more, and those at high risk due to chronic diseases and compromised immune systems. The new ACIP guidelines lowering the age recommendation to 50, are likely to produce side benefits for our program by focusing new attention on adult immunization and creating a target sub-segment to consider for our efforts. We also want to understand who still is not getting immunized and target those for special intervention and communication efforts.

In approaching Hispanics and African Americans – groups with a higher incidence of diabetes and who are more unlikely to receive flu/pneumonia vaccines, we can expand our efforts. We need to establish partnerships with existing networks that work with these audiences and diabetes, and do more segmented interventions. Here, there is synergy with NDEP in that these organizations/networks are already identified and working with NDEP and we can work together to reach out to them.

Sustaining the program for years to come...

In addition to presenting program messages to new target audiences, we want to build sustainability for the program in the future in two ways: By giving DCPs a range of interventions and partners to work with; and, by having them take part in the direction of the program. First, we will create opportunities with national level partners that have state and/or regional access. Second, we recommend establishing an advisory group with representatives of CDC, DCPs, ADA, MCOs, community health, diabetes educators, nurses association, NPHIC, and even media. They can help us determine what new products and interventions would be effective, and have input into where they want the program to be in five or seven years and beyond, especially if CDC can no longer be the prime motivator.

Our experience over these years shows that there still is a large role for CDC to play in this program. There are some challenges inherent in working on the state level through DCPs, including:

- Some are highly resistant to moving “health interventions” beyond materials distribution.
- State DCPs do not have the resources to distribute and follow up on PSA and news materials within their states. CDC will need to provide the resources for the national materials development and distribution.
- State DCP turnover is high, which means annual training and continued capacity building is required.

The primary factors that have differentiated the level of involvement and success that a DCP has with the program are:

- The mindset and skill set of the DCP
- Resource issues:
 - Time to devote to this program within their duties
 - Minding it day to day
 - Having the right staff to support their efforts
- The type of control exercised by the health department, e.g. whether the DCP has to use the health department’s media relations staff or can organize and conduct this themselves.
- Partner resources that have been provided

Appendix

A. Timeline of Actions

B. Creative Brief

C. Situation Analysis

D. Audience Profiles

E. Materials Developed

F. Targeted Associations

G. Targeted Partners

H. “Influenza and Pneumococcal Vaccination Rates Among Persons with Diabetes Mellitus—United States, 1997,” MMWR, October 1999.

A. Timeline of Actions

Diabetes and Flu/Pneumococcal Campaign Timeline

Activity	October	November	December	January	February	March	April
Campaign Planning and Environmental Scan							
Work with CDC to target next risk, audiences	→						
Environmental Scan	→						
Concept and Message Development, Testing							
Develop creative brief, initial concepts, messages		→	→				
Focus group logistics, testing				→	→		
Finalize messages					→	→	
Final testing of messages						→	→
Communications Plan							→
Limited Test					→	→	
Produce Communications Products							→
Activity	May	June	July	August	September	October	November
Produce Communications Products	→	→					
National Roll Out							
Distribute state implementation kits		→					
Capacity Building workshop preparation	→	→					
Capacity Building workshop			→				
Launch campaign				→			
Evaluation							
Develop evaluation	→						
Gather baseline data		→					
Outcome evaluation						→	(Thru March)

B. Creative Brief

4/4/97	The Creative Brief
1. Target Audience(s) Those persons with diabetes (ages 25-54, heavily skewed African American and Latin American) Those impacted by the disease, e.g. family members	
2. Objective(s) Raise the audience's awareness that people with diabetes are at increased risk of getting and dying from other diseases such as flu or pneumonia. Convince the audience to get an annual flu shot. (This implies that the audience will need to find out where to call to find out about shots.)	
3. Obstacles Lack of awareness that people with diabetes are at greater risk of getting other diseases, such as flu or pneumonia. Lack of awareness that persons with diabetes are at greater risk of fatal complications from influenza and pneumonia. Concern that screening and preventive measures might make them sick, or cause side effects Cultural beliefs about diseases, visiting doctors, and treatment Lack of access to quality health care Lack of awareness of available community resources	
4. Key Promise If I take preventive measures like getting a flu shot, then I'll be more confident that I'm doing all I can not to be a victim of my disease.	
5. Support Statements/Reasons Why Diabetes is a major risk factor for excess morbidity and mortality due to pneumonia and influenza. People with diabetes are almost three times more likely to die from pneumonia and influenza. An estimated 20,000 persons with diabetes died of flu or pneumonia in a recent year, yet most people with diabetes still have not been vaccinated. Despite the risk of increased morbidity and mortality, there are steps people with diabetes can take, such as getting vaccinated. County health departments, state health diabetes control programs and other community organizations offer support and can provide access to free vaccinations.	
6. Tone Optimistic, warm, positive. Culturally sensitive and diverse, motivating and ATTENTION-GETTING (without being a fear-based message, reasons for optimism)	

4/4/97	The Creative Brief
7. Media One TV PSA, radio PSA (live script), print PSA, media kit, community kit, brochure (to be distributed at points where people get flu shots, diabetic care and other community information venues)	
8. Openings Places where people are receptive to messages: Visits to clinics/doctors' offices/pharmacies Reading local newspapers, community newsletters Listening to radio talk shows Churches and their newsletters Community events, e.g. festivals Health fairs	
9. Creative Considerations Materials will be distributed nationally by CDC and locally by state diabetes control program personnel. Printed materials only to be developed in Spanish and English. This is a seasonal message . PSAs will be tagged with local contact information.	
NOTE: All creative Briefs <i>must</i> be accompanied by a page summarizing the background situation.	

C. Situation Analysis

National Diabetes Media Campaign Situation Analysis

Introduction

The following is an analysis of the diabetes environment—science base, patient knowledge and attitudes, and other programs—that will help shape the direction and audience for the National Diabetes Media Campaign, a new CDC initiative designed to increase awareness of diabetes on a national level. This situation analysis covers information about:

1. **State-of-the-Science in Diabetes**—what is known about the incidence and prevalence, risk factors, treatments, and control of diabetes;
2. **Knowledge and Attitudes**—how people with diabetes feel about the disease and their attitudes toward treatment and control of complications;
3. **Challenges and Opportunities**—issues currently at play in the diabetes arena which may either enhance or pose obstacles to the success of the National Diabetes Media Campaign; and
4. **Other Diabetes Education Initiatives**—programs and messages that may compete for public and media attention during National Diabetes Month and throughout the year.
5. **Recommendations**—suggested direction and approach for the National Diabetes Media Campaign.

Background

An estimated 16 million Americans have diabetes mellitus, a serious, lifelong condition and one-half of these cases are undiagnosed. The number of persons now diagnosed with diabetes has increased from 1.6 million in 1958 to 8 million in 1995—a fivefold increase.¹ NIDDM, the most common form of diabetes, affects about 90 to 95 percent of people with diabetes. This form of diabetes usually develops in adults over the age of 40 and is most common in adults over age 55.²

People with diabetes are at risk for developing a number of serious or life-threatening complications related to the disease. Diabetes is:

- The leading cause of adult blindness and kidney failure in the U.S.³
- The leading cause of lower extremity amputations. Five-year mortality rates range from 39% to 68% among patients undergoing amputation.⁴

¹ Diabetes: A Serious Public Health Problem. At-a-Glance 1996. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention.

² Diabetes Overview fact sheet. National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD. 1995.

³ Ibid. Chapter 16, “Kidney Diseases in Diabetes.”

⁴ Ibid. Chapter 18, “Lower Extremity Foot Ulcers and Amputations in Diabetes.”

- A leading cause of birth defects in babies born to women with preexisting diabetes. Without special preconception diabetes management, major malformations occur in 7 to 13 percent of babies born to mothers with diabetes.⁵
- A major risk factor for heart and vascular disease. In people with diabetes, heart disease appears earlier in life, affects women almost as often as men, and is more often fatal.⁶

CDC Efforts

CDC's efforts to reduce the burden of diabetes in the U.S. include defining the nature, extent, and causes diabetes through:

- Surveillance and epidemiology
- Developing and evaluating education and community-based programs
- Implementing state-based Diabetes Control Programs (DCP), and
- Coordinating overall efforts within the diabetes community to translate the results of diabetes research into practice.

In addition to these activities, CDC, along with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), has recently established the National Diabetes Education Program in response to the findings of the DCCT (described below). A Steering Committee has been established to plan and develop the program.

1. State-of-the-Science in Diabetes

As with all communications about health and disease, it is important to have a science base on which to anchor messages. The state-of-the-science is presented here to aid in refining program objectives, defining specific target audiences, and creating appropriate messages for the media campaign.

Characteristics of People with Diabetes

- Based on the 1989 National Health Interview Survey, 58% of people with noninsulin-dependent diabetes mellitus are women. Seventy percent are non-Hispanic white, 20% are African American, 5% are Mexican American, and 5% are of other ethnicity. Median age is 64 years.⁷
- Minority groups bear a disproportionate share of the burden of diabetes:
- Compared with non-Hispanic whites, diabetes rates are about 60 percent higher in African Americans and 110 to 120 percent higher in Mexican Americans and Puerto Ricans.⁸
- Diabetes occurs at an epidemic rate in many American Indian and Alaska Native communities, where it affects 3 to 50 percent of the adults.⁹
- More than 10 percent of elderly adults have been diagnosed with diabetes.¹⁰

⁵ Ibid. Chapter 36, "Pregnancy in Preexisting Diabetes."

⁶ Ibid. Chapter 19, "Heart Disease and Diabetes."

⁷ Ibid. Chapter 1, "Summary."

⁸ Diabetes Overview fact sheet. National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD. 1995.

⁹ National Diabetes Data Group. Chapter 1, "Summary," in *Diabetes in America*, 2nd edition, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, NIH Pub. No. 95-1468. 1995.

- Most frequently (78%), people with diabetes live in or just outside a city. Persons with NIDDM have less education and lower income levels than nondiabetic adults.¹¹
- Research has shown a correlation between diabetes prevalence and socioeconomic status, with households in the lowest economic group (annual incomes below \$15,000) showing the highest prevalence of diabetes.
- Good diabetes self-care is costly and requires diabetes education. This care may seem an unattainable commodity for economically disadvantaged populations. In addition, the future-time orientation of diabetes self-care may seem impractical to many economically disadvantaged individuals.¹²
 - In one study of non-Mexican-American Hispanic adults with diabetes, 27 percent of respondents agreed with the statement that not having enough money to take care of themselves could result in death from diabetes.¹³

Risk Factors for Diabetes

- There is no single cause of NIDDM. Risk markers for the disease include older age, family history of diabetes, minority ethnicity, lower socioeconomic status, obesity, and physical inactivity.

Prevention and Control

- The Diabetes Control and Complications Trial (DCCT), a study conducted by NIDDK between 1982 and 1993, established a close correlation between the degree of control achieved by individuals with diabetes and the incidence rate of complications among those individuals. The DCCT's dramatic results showed that intensively managed patients with diabetes maintained lower mean blood glucose levels and had a reduction in the development or progression of eye, kidney, and nerve complications.¹⁴ The key finding of the DCCT is that metabolic control matters in the prevention of the complications of diabetes.
- It remains unknown whether interventions focused on such components as weight loss and increased physical activity can prevent diabetes or reverse the pathology in those already diagnosed with diabetes.¹⁵ In fact, NIDDK is currently publicizing two clinical trials in which primary prevention strategies related to the onset of diabetes will be evaluated.

2. Knowledge and Attitudes

The knowledge and attitudes of people with diabetes and those at risk for the disease are important considerations in the development of appropriate and motivating messages. These factors will have an impact on both the “what” and the “how” of the communication. In light of the diversity in populations that are disproportionately affected by diabetes, an understanding of these factors will be critical—both if the National Diabetes Media Campaign seeks to develop an

¹⁰ Diabetes: A Serious Public Health Problem. At-a-Glance 1996. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention.

¹¹ Ibid.

¹² Murphy FG, Satterfield D, Anderson RM, Lyons AE. (1993). Diabetes educators as cultural translators. The Diabetes Educator. 19:113-117.

¹³ Zaldívar A, Smolowitz J. (1994). Perceptions of the importance placed on religion and folk medicine by non-Mexican-American Hispanic adults with diabetes. The Diabetes Educator. 20:303-306.

¹⁴ Santiago JV. (1993). Lessons from the diabetes control and complications trial. Diabetes. 42:1549-1554.

¹⁵ National Diabetes Data Group. Chapter 1, “Summary,” in *Diabetes in America*, 2nd edition, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, NIH Pub. No. 95-1468. 1995.

overall message that will speak to a broad target audience, or if separate messages and materials are to be developed for specific target audience segments.

Diabetes Knowledge and Beliefs

- In one study (subjects' ethnicity not provided), many people with diabetes saw the disease as serious (93%), yet some of those same patients did not believe that their own case was serious (50%). Of those who felt that the disease was not very serious, none had noted a diabetic complication in a friend, relative, or themselves.¹⁶

African Americans

- In one study, African Americans with diabetes exhibited an understanding of the potential long-term complications associated with diabetes but expressed a lack of knowledge about screening for these complications.¹⁷
- African-Americans with diabetes are aware that diet played a role in the management of the disease, yet they are unclear as to what the role entailed. These patients also stated that their dietary needs frequently were ignored secondary to the needs of the family. For example, because of the inconvenience of preparing a separate meal for the family, many women continued eating a high-fat diet.¹⁸
- In another study, African-American patients identified coping with the various psychosocial challenges of the disease, particularly the increased stress it places on their daily lives, as one of their top three concerns.¹⁹

Hispanics

- Studies have shown varying degrees of knowledge about potential long-term complications of diabetes as well as awareness of screening test and treatments for complications among Hispanics with diabetes. Findings have included:
- Little understanding of long-term consequences among Caribbean Latinos.²⁰
- Lack of knowledge about screening for diabetes complications among Hispanics (focus groups conducted by the National Eye Institute (NEI) with Latinos from Central America, Puerto Rico, Mexico, and Cuba).
- Greater knowledge of potential long-term complications of diabetes among Mexican-American patients.²¹
- Research conducted among Latino populations has shown a tendency to believe that the potential long-term consequences of diabetes and eventual death from the disease were inevitable.²² Getting diabetes was considered to be inevitable if it was in the family.²³

¹⁶ McCord EC, Brandenburg, C. (1995). Beliefs and attitudes of persons with diabetes. Family Medicine. 27:267-271.

¹⁷ Maillet NA, Melkus GD, Spollett G. (1996). Using focus groups to characterize the health beliefs and practices of black women with non-insulin-dependent diabetes. The Diabetes Educator. 22:39-46.

¹⁸ Ibid.

¹⁹ Anderson RM, Barr PA, Edwards GJ, Funnell MM, Fitzgerald JT, Wisdom K. (1996). Using focus groups to identify psychosocial issues of urban black individuals with diabetes. The Diabetes Educator. 22:28-33.

²⁰ Quatromoni PA, Milbauer M, Posner BM, Carballeira NP, Brunt M, Chipkin SR. (1994). Use of focus groups to explore nutrition practices and health beliefs of urban Caribbean Latinos with diabetes. Diabetes Care. 17:869-873.

²¹ Zaldívar A, Smolowitz J. (1994). Perceptions of the importance placed on religion and folk medicine by non-Mexican-American Hispanic adults with diabetes. The Diabetes Educator. 20:303-306.

²² Ibid.

- Urban Caribbean Latinos have stated that having diabetes has a strong negative impact on their lives. They believed that they were unable to participate fully in daily activities ranging from household chores to social gatherings. Activities requiring assistance (for example, grocery shopping, insulin administration, and foot care) contributed to feelings of dependence.²⁴
- The same group was unclear about the role of diet in the management of diabetes, and stated that the needs of a person with diabetes, particularly dietary needs, were frequently subordinated for the sake of the family.²⁵
- In one study of non-Mexican-American Hispanic adults with diabetes, only 18 percent of respondents were aware of the fact that being Hispanic is a risk factor for developing diabetes.²⁶
- In the NEI focus groups, Hispanic participants felt strongly that celebrities were not the best spokespeople, unless they too had diabetes, and that physicians were more credible sources of information.

Native Americans

- In a study of Native Americans with diabetes, only 50% of respondents indicated that they believed NIDDM was a very serious disease and 90% indicated that the long-term complications of diabetes could be minimized by controlling blood glucose.²⁷
- Native Americans with diabetes frequently state that coping with the disease meant a major lifestyle change and that it has a strong negative impact on their lives.²⁸
- Physicians were identified by Native Americans as the most credible sources of information about diabetes and the prevention of complications.²⁹

Implications of Culture on Education

- African Americans, Hispanics, and Native Americans have expressed cultural barriers to diabetes management and control. As CDC's focus group research with populations at increased risk for diabetes revealed, these barriers include:
 - Language and communications.
 - Health beliefs and practices.
 - Community remedies.
 - Food choices and traditions.
 - Social support.
 - Role of religion.
 - Health provider credibility.
 - Perceptions of obesity.
 - Physical activity.

²³ Quatromoni PA, Milbauer M, Posner BM, Carballeira NP, Brunt M, Chipkin SR. (1994). Use of focus groups to explore nutrition practices and health beliefs of urban Caribbean Latinos with diabetes. Diabetes Care. 17:869-873.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Zaldívar A, Smolowitz J. (1994). Perceptions of the importance placed on religion and folk medicine by non-Mexican-American Hispanic adults with diabetes. The Diabetes Educator. 20:303-306.

²⁷ Womack RB. (1993). Measuring the attitudes and beliefs of American Indian patients with diabetes. The Diabetes Educator. 19:205-209.

²⁸ Ibid.

²⁹ Ibid.

- Value of glucose control.
- Many Hispanics indicate that religious beliefs play an important role in their diabetes care or have a belief that common folktales (such as eating too much sugar or being nervous) are related to the cause of diabetes.³⁰
- In studies of Hispanics with diabetes, use of traditional (nonmedical) remedies to treat diabetes has been found. The practice of using bitter substances such as boiled eggplant, grapefruit juice or skins, and lemon juice mixed with olive oil to reduce blood glucose levels is common.³¹ The previously mentioned NEI focus groups with Hispanics also showed a reliance on folk remedies to control blood glucose levels.
- Among African Americans, the cultural role of food and eating can serve as a barrier to diabetes management. As with other groups, the type of food eaten, its preparation, and its consumption are rich in cultural meaning for African-American individuals.³²

3. Challenges and Opportunities

The following assessment of challenges and opportunities in the immediate future will help to establish the best positioning for CDC and its message, and will provide a guide to issues that need to be addressed in campaign development.

Challenges

- Media professionals have seen increasing competition for unpaid/public service air time due to an expansion in the number of health and social issues competing for media attention. In addition, several of the major television networks have implemented their own public service campaigns, often incorporating a range of issues under one umbrella theme or approach.
- The specific populations at increased risk for diabetes and its complications—African Americans, Hispanics, and Native Americans—have vastly different needs, beliefs, and attitudes, and respond to different types of communications and outreach. The National Diabetes Media Campaign will face the challenge of either selecting an overall message that is relevant and motivating to all of these groups or designing different approaches and messages to reach various segments of the target audience.

Opportunities

- There has been a renewed Federal focus on diabetes prevention and control, with the allocation of funds for research and education.
- Proven success in outreach and the translation of scientific findings about diabetes places CDC in a good position to increase its visibility and recognition as a Federal leader in the field.

³⁰ Zaldívar A, Smolowitz J. (1994). Perceptions of the importance placed on religion and folk medicine by non-Mexican-American Hispanic adults with diabetes. *The Diabetes Educator*. 20:303-306

³¹ Quatromoni PA, Milbauer M, Posner BM, Carballeira NP, Brunt M, Chipkin SR. (1994). Use of focus groups to explore nutrition practices and health beliefs of urban Caribbean Latinos with diabetes. *Diabetes Care*. 17:869-873.

³² Anderson RM, Barr PA, Edwards GJ, Funnell MM, Fitzgerald JT, Wisdom K. (1996). Using focus groups to identify psychosocial issues of urban black individuals with diabetes. *The Diabetes Educator*. 22:28-33.

- CDC's established network of state diabetes control programs provide a natural framework for the dissemination of campaign materials, which will foster repetition of messages on the national, state, and local levels.

4. Other Diabetes Education Programs

Many organizations, in addition to CDC, conduct diabetes awareness and education campaigns during National Diabetes Month and throughout the year. These messages compete for public and media attention. It is imperative that the National Diabetes Media Campaign be innovative and creative, yet integrated with the efforts of other Federal Government agencies and advocacy organizations. The following are examples of these competing messages and programs.

- NIDDK has distributed kits to health professionals and people with diabetes: "Do Your Level Best," focusing on blood glucose monitoring, and "Feet Can Last a Lifetime," focusing on prevention of foot ulcers and lower extremity amputations.
- NIDDK is also publicizing two new clinical trials that will evaluate primary prevention strategies related to the onset of the disease itself, once focusing on preventing insulin-dependent diabetes mellitus and the other on preventing NIDDM among those with impaired glucose tolerance.
- The National Eye Institute (NEI) distributes a "National Diabetes Month Eye Initiative" kit to health professionals. This kit, focusing on the prevention of diabetic eye disease, includes contact information for CDC's state diabetes control directors.
- The American Diabetes Association (ADA) undertakes various public education and awareness campaigns during National Diabetes Month.
- ADA also developed Diabetes Assistance and Resources (DAR), a special outreach program for Hispanics. DAR, which is used by 20 ADA affiliates, incorporates an information and referral network, neighborhood parties and food tastings, and group lectures.³³
- Staged Diabetes Management, a comprehensive education and treatment program for Native Americans, works with local providers who establish consensus-based guidelines for patient management. Several Indian Health Service units use the approach in their areas.³⁴

5. Recommendations

This analysis of the diabetes environment points to a number of conclusions and to two separate recommendations for the potential approach of the National Diabetes Media Campaign. This section is followed by a table that facilitates comparisons between the two approaches by summarizing the major elements of each approach in a side-by-side format.

Summary of Key Points

- Minorities, especially African Americans, Hispanics, and Native Americans are disproportionately affected by diabetes. People with diabetes are more likely to:
 - Live in an urban area.
 - Have low-income and education levels.

³³ Dealing with diabetes. (1996). Food Insight. Fall.

³⁴ Ibid.

- There are many risk factors for diabetes, but no single cause. Risk factors include:
 - Family history.
 - Minority status.
 - Low socioeconomic status.
 - Obesity.
 - Physical inactivity.
- There is science behind treatment for diabetes and control of long-term complications in people with diabetes.
- There is not yet scientific evidence for the primary prevention of diabetes.
- People with diabetes are somewhat aware of the seriousness of the disease, but they do not have a clear understanding of managing diabetes and preventing complications. Those who did not feel that the disease was serious did not have personal experience of complications. Thus, an understanding of complications seems to be related to perceptions of severity.
- Culture impacts people's perceptions that they can control diabetes or prevent complications. Specific cultural factors vary between specific populations.

Recommendations

- Messages should focus on a target audience with low socioeconomic status and low educational attainment.
- Because different messages will be appropriate to an at-risk population and a population of people with diabetes we recommend that CDC choose between two separate approaches for the Campaign.
- **Scenario 1: Communicating a message about diabetes control and prevention of complications to those who have been diagnosed with the disease.** This is an important and complex message involving medical and lifestyle information. It is unlikely that such a message will motivate those who may not know they are at risk for diabetes. This approach focuses on specific, discrete target audiences that allows for tailoring of the message and its delivery in a very precise manner. However, by focusing only on groups of people with diabetes we will pass on other opportunities to present this issue to a broader public.
- **Scenario 2: Communicating the seriousness of diabetes and the risk factors to a the general population, with an emphasis on African Americans, Hispanics, and Native Americans.** This approach affords us the opportunity to communicate about diabetes risk factors to a more diverse audience and also to place CDC/DDT more squarely in public view (if desired). The longer term view in this scenario is to introduce more targeted communications after building awareness of the seriousness of diabetes. Because the reach of this program is larger than in scenario 1, the resources that will be required to implement it optimally are larger as well.
- A review of the HealthStyles data previously suggested is recommended to provide further insight into the knowledge of diabetes and risk factors among those who have not been diagnosed with the disease.

Table 1. Alternative Scenarios for a National Diabetes Media Campaign

Variable	People with Diabetes	People at Risk (General Population)
Audience	Adults > 50 y/o with diabetes with emphasis on African Americans, Hispanics, and Native Americans. Children with diabetes and their parents.	General population with emphasis on African Americans, Hispanics, and Native Americans
Problem to be addressed	People with diabetes, and their family members, are not aware of the serious complications of the disease and strategies for preventing these complications.	People are not aware that they may be at risk for diabetes, and that it is a potentially serious disease.
Objectives	Increase awareness of ways to control diabetes and prevent complications.	Increase awareness of risk factors for diabetes. Increase awareness of the need to find out if one has diabetes..
Strategy	Targeted consumer program designed to educate audience about preventing complications.	Broad-based consumer media program to raise awareness of risk factors.
Potential tactics	Print and/or radio PSAs through targeted media. Outreach and liaison with groups servicing these audiences. Turn-key educational program for DCPs to implement. Media relations with targeted magazines, radio and newsletters.	Print, radio and/or television PSAs through mainstream and targeted media. Media relations with high circulation magazines, radio and television networks. Turn-key educational program for DCPs to implement. Video news release or satellite media tour during National Diabetes Month.
Program evolution	Target audiences become more refined or segmented over time within existing audiences.	After general awareness campaign, move to more targeted audiences defined through formative research (e.g., who is not being reached by initial efforts?).

D. Audience Profile

(Updated November 2000)

Diabetes mellitus is a serious, chronic condition affecting nearly 16 million Americans, half of who remain undiagnosed and without appropriate medical care. Each year almost 800,000 individuals are diagnosed with diabetes. The most common form of diabetes is type 2 diabetes, or noninsulin-dependent diabetes mellitus (NIDDM) which primarily develops in adults over the age of 40 and is most common in adults over the age of 55. The number of individuals diagnosed with diabetes has increased significantly over the past fifty years. Since 1958 almost 14.5 million people have been diagnosed with the disease.

Diabetes is the sixth leading cause of death by disease in the United States. Diabetes is a life-long condition with associated complications that may affect almost every part of the body. These complications include heart disease, blindness, stroke, kidney failure, nerve damage and amputations. In 1997, diabetes cost the U.S. \$98 billion dollars in care, hospitalization, treatment supplies, lost work time, and disability payments.

Current public health initiatives continue to explore the effective methods and tools used to encourage self-management of diabetes. While research indicates that diabetes is a global public health concern, the data also illustrates the increased risk for immigrant populations living in industrialized nations. Identification of special populations at risk for diabetes in the U.S. and their knowledge, attitudes, and beliefs about diabetes shape campaigns aimed at increasing awareness and prevention. CDC's *Diabetes Flu Campaign* specifically target people with diabetes aged 25-54, and their physicians and care takers to inform them of their increased risk of death should they be infected with influenza or pneumococcal disease. The campaign also strives to increase the percentage of people with diabetes who receive pneumococcal and annual flu shots.

This profile will explore the demographics; incidence, prevalence and risk factors for diabetes; cultural influences; and, media habits and preferences of the general population and those special populations who are disproportionately affected by diabetes. These populations include, Hispanic, African American, Asian American, and Native American. The profile will also explore the influences and habits of physicians and providers who care for people with diabetes. Each section will also include perceived opportunities and challenges to communications of the campaign messages to each population.

General Population

Incidence, Prevalence, and Risk Factors for Diabetes

Approximately 5.9 percent of the American population have been diagnosed with diabetes, and still another 5.4 million people remain undiagnosed. Each year 798,000 people are diagnosed with diabetes. Diabetes affects individuals of all ethnicities, socioeconomic classes, ages, and genders. Women and specific minority populations are at higher risk for diabetes. The median age for an individual diagnosed with diabetes is 64 years.

Risk factors for diabetes include:

- Obesity
- Genetics
- Lifestyle: Level of physical activity and dietary habits
- Ethnicity

Approximately 10,000 to 30,000 people die with flu and pneumonia each year. Individuals with diabetes are three times more likely to die with the flu or pneumonia than people who do not have diabetes. Deaths among people with diabetes increases between 5 and 15 percent during flu epidemics.

According to researched assessed from HealthStyles and Life Style studies, of the sample diagnosed with diabetes:

- 40.3% did not get a flu vaccination within the last 12 months
- Were mostly white (72.3%), with other races represented 14.9% black and 9.8% Hispanic
- Tended to be married (63%) with children, with 33% having children at home
- Had lower household incomes compared to the rest of the sample with 23% making less than \$15,000
- Were less likely to have completed high school (81.7%) than the general population
- Skewed slightly older with ages 45-64 constituting 45.5% of the sample

Behavior towards vaccination

When asked about getting vaccinations in the last 12 months, respondents cited a doctor's recommendation most frequently (71%). The second motivation was themselves taking the initiative, followed by family members.

Barriers for not getting a flu shot were evenly split between:

- Lack of awareness that they needed a vaccination
- Anticipation that the vaccination might make them sick
- No health professional offered to provide a flu shot, or a vaccination against pneumonia.

Compared to the general public, people with diabetes are:

- Less likely to take risks
- Less likely to feel they have more to accomplish in the future
- Less concerned with physical attractiveness and are more prudish
- More likely to agree with traditional views of women's roles and feel offended by sex and violence on television
- More likely to have affiliation with the Democratic party

Characteristics of people with diabetes, not vaccinated for flu:

- 66% feel less in control than they would like to be
- 33% fear being victims of crime
- They are more likely to describe themselves as reserved
- They place more value on physical appearance and fashion, and describe themselves as more competitive
- Almost 50% describe themselves as very or somewhat conservative, compared with 41% of those who were vaccinated

Characteristics of people with diabetes, vaccinated for flu:

- More content with the status quo
- Like routine
- Value security
- Feel more in control and less victimized
- More likely to agree with traditional views

Hispanic Population

Demographics

The Hispanic population is the second largest minority population in the United States with nearly 27 million people representing approximately 8.6 percent of the U.S. population. Hispanics are one of the most rapidly increasing minority populations and are expected to comprise 21 percent of the total U.S. population by 2050.

Mexican Americans, Puerto Ricans, and Cubans make up the majority of the Hispanic population. Mexican Americans are the largest of the three subgroups representing 64 percent of the Hispanic population. The median age in the Hispanic population is 26 and approximately 82 percent of the Hispanic population are less than 45 years old.

Incidence, Prevalence, and Risk Factors for Diabetes

Diabetes is the 7th leading cause of death among Hispanic Americans, and the 4th leading cause of death among Hispanic women and Hispanic elderly. The San Antonio Heart Study revealed that the prevalence of NIDDM was two to three times higher in Mexican Americans than in non-Hispanic whites. Mexican Americans living in the barrio were two to four times more likely to be diagnosed with NIDDM than their counterparts living in suburban neighborhoods.

One survey revealed that Cuban Americans were less likely than Mexican Americans or Puerto Ricans to have ever been diagnosed with diabetes. In fact, among Hispanics aged 20-44 years only 2.4 percent of Cuban Americans were estimated to have diabetes, compared to 3.8 percent and 4.1 percent of Mexican Americans and Puerto Ricans, respectively. It is hypothesized that Cuban American population is less susceptible to diabetes because they have a significantly lower degrees of genes originating from Amerindian ancestry.

A survey in San Luis Valley, Colorado revealed that the incidence of NIDDM was 2.4 times higher in Hispanic men than in non-Hispanic Caucasian men, and the incidence in Hispanic women was 3.6 times higher. Another study revealed that incidence of diabetes varied in Mexican American populations by neighborhood. Low-income barrio housing and transitional neighborhoods reported 8.7 and 8.4 percents incidence over eight years, respectively, while Mexican Americans living in suburban neighborhoods only reported 3.4 percent. These figures show 1.66 times higher odds of type two diabetes in Mexican Americans living in transitional neighborhoods than non-Hispanic whites, and 2.27 times higher odds for Mexican Americans living in suburban neighborhoods.

Hispanic Americans share many risk factors for diabetes with Caucasian populations. The following list details some of those risk factors:

- Obesity

The prevalence of obesity is higher in Mexican American than in non-Hispanic whites, however simply being overweight does not account for the disparity between Hispanic Americans and non-Hispanic white populations. The distribution of weight is also a risk factor for NIDDM.

- Metabolic Variances

Mexican Americans have mean serum insulin levels higher than that of non-Hispanic white populations. This results in increased resistance to the action of insulin.

- Genetic Factors

This is a strong degree of familial aggregation of diabetes in Mexican American populations. The San Antonio study showed that the risk for Mexican Americans developing diabetes is twice as high in populations with first degree relatives who have diabetes.

Cultural Influences

There are a number of sociocultural and behavioral risk factors associated with Hispanic Americans and diabetes. Studies have shown that Mexican Americans with higher levels of acculturation are significantly less likely to be diagnosed with NIDDM. This could be a reflection of a higher value placed upon preserving Mexican culture, including traditional family structure and diet habits by Mexican American populations who are less assimilated. Mexican Americans who primarily eat traditional Mexican fare often have higher levels of fat consumption which can impair glucose tolerance.

There is also some evidence to indicate that levels of physical activity affect the prevalence of diabetes. Hispanic Americans tend to be more sedentary than non-Hispanic whites. There is evidence to suggest that the benefits of regular physical activity are not understood, and labor intensive jobs may tend to lower an individual's interest in engaging in physical activity in off hours.

Hispanics Americans are more likely to live at poverty level than non-Hispanic whites, reporting a median annual income of less than \$25,000. Puerto Ricans, the subgroup with the highest incidence of diabetes, report median incomes of less than \$10,000. Hispanic adults are about twice as likely to reports being unable to see a physician when needed due to cost. Hispanic Americans are more likely to have inadequate insurance or to be uninsured than any other ethnic group in the U.S. It has also been shown that unless the health care or clinic setting provides services in a culturally or linguistically competent manner, many who have insurance still will not go.

Media Habits and Preferences

Hispanic Americans use television as their primary media source, followed by radio. Puerto Ricans and Central Americans report the highest media usage (10.25 and 10.22 hours per day,

respectively). Mexican Americans follow with 9.18 hours per day of media usage, and Cuban Americans report the lowest level (7.43 hours per day). All subgroups prefer Spanish-language media sources to English-language media.

Hispanic Americans recognize Spanish-speaking physicians as the most credible source of health and medical information. Other well-known figures with diabetes or a history of diabetes in the family are also considered credible sources; however, celebrities and other spokespersons are not credited with true concern about the issue or the community.

Challenges

- Hispanic Americans' religious beliefs can play into their willingness to seek treatment for diabetes or to engage in preventive practices such as receiving an annual flu shot. Many Hispanic Americans believe that God's will influence an individual's health and it is left to God to cure disease.
- Many Hispanic Americans are more likely to see a physician if they are ill, but not for preventive measures such as a flu shot. Lack of health insurance, access to culturally competent care, undocumented status, and money all significantly influence health care decision among Hispanic American populations.
- Many Hispanic American populations rely on folk remedy to cure disease or treat diabetes. Often folk medicine practices replace Western medicine.
- Hispanic Americans are less likely to follow the recommendations of a physician that they consider impersonal or uncaring.
- Only 47 percent of physicians serving Hispanic American and African American populations in one study recommended flu shots to their patients, compared to 70 percent of physicians serving primarily white populations who recommended an annual flu shot.

Opportunities

- The church and community based organizations both play an important role in the life of Hispanic Americans. The advice and recommendation of a respected community or religious leader may be one of the most effective ways to reach Hispanic Americans. Flu shot clinics held at churches may also overcome cultural and religious barriers that prevent many Hispanic Americans with diabetes from receiving annual flu shots.
- Information about diabetes and the flu should be provided in Spanish-language format.
- The involvement of culturally and linguistically competent health care services is crucial in effectively communicating important health messages about diabetes and flu.

African American Population

Demographics

The African American population represents 21 percent of the U.S. population. The 8 cities with the highest concentration include New York, Chicago, Detroit, Philadelphia, Los Angeles, Houston, Baltimore and Washington, DC.

The African American population, while still relatively young, is aging. African Americans had a median age of 28.2 years in 1992, and only 24 years in 1980. In 1992, 54 percent of all African Americans lived in the South, while 45 percent live in the North and West. The projection is that well into the next century the majority of African Americans will reside in the South.

Incidence, Prevalence, and Risk Factors for Diabetes

Approximately 2.3 million, 10.8 percent of the all African Americans, have been diagnosed with diabetes. The rate of diabetes in African Americans has tripled in the past 30 years and the prevalence of diabetes in blacks is 1.7 times as frequent as in non-Hispanic whites. Twenty-five percent of African American women over the age of 55 have diabetes, and 25 percent of the total African American population between the ages of 65 and 74 have diabetes.

The incidence of diabetes is higher among African American populations than non-Hispanic whites. Within a 12-year period the incidence of diabetes in African American women was 15 percent and 10.9 percent in African American men. In that same period, the incidence of diabetes in white men and women was 7 percent and 6.9 percent, respectively. Since the 1960s, diabetes among African Americans has tripled.

A combination of risk factors account for the disproportionate number of African Americans diagnosed with diabetes. They include:

- Genetic History
- Obesity
- Socioeconomic Status
- Physical Activity
- Insulin Resistance
- Metabolic Variances

Cultural Influences

There are a number of attitudes, beliefs, and practices that contribute to increased development of diabetes in African Americans. African Americans are also less likely to receive a pneumococcal and annual flu shot.

- Body image
- Food habits
- Distrust of health professionals

Diabetes is sometimes referred to by African Americans as “having sugar.”

Media Habits and Preferences

Messages need to be sensitive and targeted to the African American experience. Media viewing habits are particularly high for television, followed by African American formatted radio stations.

Challenges

- Overcoming beliefs about the flu vaccine
- Encouraging use of preventive medicine services
- Requesting preventive health services such as a flu shot

Opportunities

- Churches
- Community-based organizations
- Radio spots
- Barbershops (African American men)
- Family and peer recommendations

Asian American Population

Demographics

There are 9.8 million Asian Americans in the U.S. with over 50 percent of the population living in the Western U.S. Asian Americans are growing faster than any population in the country at 5.2 percent growth. The Asian American population is highly urbanized with over 93 percent of the population living in metro areas. The average Asian American household income (\$46,695) is also significantly higher than that of any other population group, and Asian Americans also report the highest level of education, with 38 percent of the population holding a bachelor's degree or higher.

The Asian American population is not a homogeneous group but made up of several subpopulations. The average Asian American household is larger (3.8) than the average American household (3.2). Chinese-Americans comprise the largest subgroup of the Asian American population (23.8 percent), followed by Filipino-American (20.4 percent), Japanese-American (12.3 percent), Asian-Indian (11.8 percent), Korean-American (11.6 percent), and Vietnamese-American (8.9 percent).

Incidence, Prevalence, and Risk Factors for Diabetes

The difference between the rates of NIDDM in native Asian populations and Asian American populations are startling. The disparity which can range between 5 to 25 percent affords an unusual opportunity to observe lifestyle changes and behaviors associated with westernization that contribute to higher levels of NIDDM.

Studies have shown that age-adjusted rates of diabetes in the four major subgroups of the Asian American population are at least two times greater than that of the non-Hispanic Caucasian population. Filipino-Americans have the highest rate of diabetes among the four major groups (21.8 percent), and the highest level of new diabetes cases (15.5 percent).

Risk factors that may contribute to higher levels of diabetes among immigrant populations of Asian Americans include:

- Lifestyle changes-Dietary and Physical Activity
- Metabolic Variances
- Weight Gain

Cultural Influences

Asian American groups all have unique cultural features, however they share some features that affect their medical decision making. Some of these features include:

- Cautious in personal and business dealings
- Strong emphasis on education

- Strong sense of family and cultural/community preservation

Media Habits and Preferences

There are more than 500 newspapers, magazines and radio stations now serving the Asian American and Pacific Islander populations. Print is the dominant source of news and information. There are 2-4 national daily publications per subgroup with regional editions in major geographic markets. There are also numerous local community papers. Television is quickly becoming the more dominant media source and is the primary form of entertainment. The television is the most effective tool for building awareness.

Radio is particularly effective during California drive time as a tool for disseminating information and raising awareness. Asian American business owners frequently listen to radio throughout the day.

Across all subgroups it is popular to rent Asian programming on video where available. This affords the opportunity to include video inserts to disseminate information.

Challenges

- Culturally and linguistically competent health service
- Cultural beliefs about western medicine
- Strong belief in holistic and alternative medicines
- Lack of access to health care
- Reluctance to get help for what they believe are minor health problems such as flu

Opportunities

- Community newspapers
- Community based organizations
- Community fairs and cultural events
- Video inserts
- Sense of obligation to family
- Approach to illness as a shared family problem
- Flu shot as solid planning for the future

Native American Population

Demographics

There are over 500 tribal organizations in the U.S. and approximately 1.9 million individuals living in the U.S. who define themselves as American Indian or Alaska Native. Of these almost 2 million individuals, only 1.2 million live in reservation states served by the Indian Health Service (HIS). Native Americans are a young population with a median age of 26. Native Americans are at lower socioeconomic status and have lower levels of education than the general U.S. population.

Incidence, Prevalence, and Risk Factors for Diabetes

There have been recent, sharp increases in the number of individuals diagnosed with diabetes. The most comprehensive research and data to date are from a study of the Pima Indians in southern Arizona where half of all adults have diabetes. Native American women have higher rates of diabetes (13.2 percent) than Native American men (11 percent). Native American rates of diabetes (12.2 percent) are also higher than for the general U.S. population (5.2 percent). Native Americans are 10 times more likely than the general population to develop diabetes.

Risk factors for diabetes in Native Americans are similar to those of the other special populations at increased risk for diabetes. Risk factors include:

- Genetics
- Obesity
- Lifestyle: Diet and lack of physical activity
- Metabolic variance

Cultural Influences

Native Americans view diabetes as a new disease that has come from outside communities. Effective communications and education initiatives must be culturally competent. They should also elicit the involvement of the community. Local health beliefs play an important role in the development of medical beliefs and practices.

- Live with large extended families
- Strong family and tribal ties
- More indirect ways of communicating such as body language
- Rely on spiritual resources as source of energy and power
- Stories maintain tradition and shape views

Media Habits and Preferences

- Radio is primary media outlet
- Prefer Native Americans to be used in materials
- Messages need to build on strength of Native American culture

- Consistent, straightforward wording is best

Challenges

- Many Native American communities are rural and have lower levels of education, awareness and understanding of diabetes and preventive medicine.
- Must account for local health customs and beliefs in educational materials
- View of diabetes as an assault from the outside communities

Opportunities

- Use existing groups within tribes and communities to disseminate information
- Opportunity for community involvement in education initiatives

Health Care Providers

Media Habit and Communication Preferences

Physicians receive numerous pieces of mail each day, many from pharmaceutical companies and other organizations. Research has indicated that providing clearly marked, simple packaging with a CDC logo or suggestion of the enclosure of health guidelines increases the likelihood that physicians will open and use materials.

In general, the need to see many patients and the lack of time to delve into other health areas besides the reason the patient is there, serves as a major barrier to physicians providing annual vaccinations. Diabetes educators, nurses and physician assistants are more likely to make health recommendations to patients and to spend time answering questions.

Physicians have indicated that the following tools would be effective in sharing information about the need for people with diabetes to receive pneumococcal and annual flu shots:

- Direct mailings, including statistics
- Professional meetings
- Office tools such as a flu shot checklist, pens, reminder cards, etc.
- Clear guidelines

Challenges

- Lack of knowledge about guidelines
- Reimbursement/Health Care system/HMOs
- Timing
- Disparity between knowledge and practice
- Physicians serving primarily minority populations are less likely to offer the flu vaccine than those health providers serving primarily non-Hispanic white communities.

Opportunities

- Physicians have expressed interest in receiving clearer guidelines about diabetes and flu vaccination
- Possibly use HMOs to encourage patients to ask their health care provider about the flu shot
- Provide physicians with statistics to share with patients about diabetes and the flu, statistics can also be ethnically specific
- Partnership with drug company representatives to distribute information to doctors

E. Communications Program Materials

Product	Printing Quantity	Provided
English brochure	850,000	Directly to states
English poster	100,000	Directly to states
Spanish brochure	160,000	Directly to states
Spanish poster	30,000	Directly to states
English pneumo Insert	850,000	Directly to states
Spanish pneumo Insert	160,000	Directly to states
English event poster	500	Directly to states, on disk in state kit
Spanish event poster	500	Directly to states, on disk in state kit
Transit ad	60	On disk, in state kit
Low-lit brochure	500	Directly to states, on disk in state kit
English postcard (patients)	500	Directly to states, on disk in state kit
Spanish postcard (patients)	500	Directly to states, on disk in state kit
English postcard (health providers)	500	Directly to states, on disk in state kit
English bill stuffer	500	Directly to states, on disk in state kit
Spanish bill stuffer	500	Directly to states, on disk in state kit

F. Targeted Associations

Associations

American Academy of Ophthalmology	Association for Professionals in Infection Control
American Academy of Optometry	Association of American Indian Physicians
American Assoc. of Clinical Endocrinologists	Association of Clinicians for the Underserved
American Assoc. of Homes and Services for the Aging	Association of Nurses in Aids Care
American Assoc. of Occupational Health Nurses	Body Positive
American Association for Women Podiatrists	Consultant Dietitians in Health Care Facilities
American Association of Health Plans	Health Education Resource Organization
American Association of Immunologists	Healthy Mothers, Healthy Babies
American Association of Retired Persons	Hispanic American Geriatrics Society
American Association of Retired Persons	Indian Health Service
American Cancer Society	Int'l and Amer. Assoc. of Clinical Nutritionists
American College of Nutrition	Joslin Diabetes Center
American College of Nutrition	Maternity Center Association
American College of Obstetricians and Gynecologist	Nat'l Assoc. for the Advancement of Colored People
American Hospital Association	National Alliance for Hispanic Health
American Medical Women's Association	National Asian Pacific Center of Aging
American Occupational Therapy Association	National Assoc. for the Visually Handicapped
American Optometric Association	National Association of Chain Drug Stores
American Physical Therapy Association	National Association of Hispanic Nurses
American Podiatric Medical Association	National Association of People with Aids
American Public Health Association	National Association of Public Hospitals
Assoc. of Asian Pacific Community Health Orgs	National Association of Vision Professionals
Assoc. of Occupational and Environmental Clinics	National Association of Local Boards of Health
Assoc. of State and Territorial Health Officials	National Black Nurses Association
Association for Macular Diseases	National Caucus and Center on Black Aged

National Community Pharmacists Association
National Foundation for Infectious Diseases
National Foundation for Infectious Diseases
National Hispanic Council on Aging
National Indian Health Board
National Kidney Foundation
National Medical Association
National Minority Aids Council
National Rural Health Association
National Urban League
National Wellness Association
National Women's Health Network
Office of Minority Health Resource Center
Older Women's League
Pan-American Assoc. of Ophthalmology
Pan-American Assoc. of Ophthalmology
Senior Citizens Association
The Congress of National Black Churches
National Eye Institute

National Council of La Raza
National Council of Senior Citizens

G. Targeted Partners for 2000

Partnership Outreach
American Association for Health Plans
American Pharmaceutical Association Foundation
Association of Teachers of Preventive Medicine
Bayer Corporation
Becton Dickinson
Bristol Meyers Squibb
CVS
Eckerd
Eli Lilly and Company
Merck Vaccine Division
National Alliance for Hispanic Health
National Association of Chain Drug Stores
National Coalition for Adult Immunization
National Medical Association
Osco Drug
Pfizer
Pharmacia Upjohn
PharmaseeTV
Rite Aid Corporation

H. MMWR, October 1999

Influenza and Pneumococcal Vaccination Rates Among Persons with Diabetes Mellitus -- United States, 1997

October 29, 1999 / 48(42);961-7

Vaccination is an important public health intervention for reducing morbidity and mortality from influenza and pneumonia among persons with diabetes (1,2). A national health objective for 2000 is to increase influenza and pneumococcal vaccination rates to greater than or equal to 60% among persons at high risk for complications from influenza and pneumonia, including persons with diabetes (objective 20.11) (3). Although the Advisory Committee on Immunization Practices (ACIP) recommends that all persons with diabetes be vaccinated, data from the 1993 Behavioral Risk Factor Surveillance System (BRFSS) showed that 40% of persons with diabetes reported receiving an influenza vaccination within the previous year, and 21% reported ever receiving a pneumococcal vaccination (4). To assess the vaccination rates among persons with diabetes in 52 reporting areas (i.e., 50 states, the District of Columbia, and Puerto Rico), CDC and the Council of State and Territorial Epidemiologists (CSTE) analyzed data from the 1997 BRFSS. This report summarizes the findings of this analysis, which indicate that most states did not reach the national health objectives for influenza and pneumococcal vaccination in their populations with diabetes.

BRFSS is an ongoing, state-based, random-digit-dialed telephone survey of non-institutionalized civilian adults aged greater than or equal to 18 years. The analysis included only respondents who answered "yes" to the question, "Has a doctor ever told you that you have diabetes?" Women who were told they had diabetes only during pregnancy were not classified as having diabetes. In 1997, influenza and pneumococcal vaccination rates for the 52 reporting areas were examined; 7011 respondents with diabetes from the reporting areas were included in this analysis. Responses for two questions related to vaccination status were analyzed: "During the past 12 months, have you had a flu shot?" and "Have you ever had a pneumonia vaccination?" Of the 7011 respondents, 181 (2.6%) and 384 (5.5%) did not report or did not know their influenza and pneumococcal vaccination status, respectively, and were excluded from the analysis. Data from all of the reporting areas were analyzed to determine sociodemographic characteristics associated with receipt of influenza and pneumococcal vaccinations. Racial/ethnic groups other than non-Hispanic whites, non-Hispanic blacks, and Hispanics were not included because numbers, when presented separately, were too small for meaningful analysis. Data were weighted by age, sex, and racial/ethnic distribution to reflect the adult population of each of the 52 reporting areas. SUDAAN was used to calculate point estimates, 95% confidence intervals (CIs), and significant differences (p less than 0.05).

Among adults with diabetes, 52.1% reported receiving influenza vaccine during the previous 12 months, and 33.2% reported ever receiving pneumococcal vaccine ([Table 1](#)). Non-Hispanic whites were significantly more likely to report receiving influenza and pneumococcal vaccines (56.6% and 38.8%,

respectively) than non-Hispanic blacks (48.1% and 24.9%, respectively) and Hispanics (41.0% and 20.9%, respectively). Women were slightly more likely than men to report vaccination, but this difference was significant only for pneumococcal vaccine. As age increased, report of vaccination significantly increased, from 27.7% (ages 18-44 years) to 69.6% (ages greater than or equal to 75 years) for influenza vaccination and from 11.2% (ages 18-44 years) to 53.4% (ages greater than or equal to 75 years) for pneumococcal vaccination. No significant association was noted between receipt of vaccination and level of education.

Receipt of influenza and pneumococcal vaccinations varied by reporting area ([Figure 1](#) and [Figure 2](#), [Table 2](#)). Rates for influenza vaccination ranged from 29.1% in Puerto Rico to 79.9% in Maine ([Table 2](#)). Twelve of the reporting areas met the national health objective of greater than or equal to 60% for influenza vaccination, and another 23 areas were within 5 percentage points of the objective. Rates for pneumococcal vaccination ranged from 22.0% in Arkansas and Puerto Rico to 48.6% in Montana ([Table 2](#)); no reporting areas reached the national health objective. Overall, rates for both vaccines were lowest in the southeast regions and highest in the northwest regions.

Reported by: SM Benjamin, PhD, Council of State and Territorial Epidemiologists, Atlanta, Georgia. The following BRFSS coordinators: J Cook, MBA, Alabama; P Owen, Alaska; B Bender, MBA, Arizona; T Clark, Arkansas; B Davis, PhD, California; M Leff, MSPH, Colorado; M Adams, MPH, Connecticut; F Breukelman, Delaware; I Bullo, District of Columbia; S Hoecherl, Florida; L Martin, MS, Georgia; A Onaka, PhD, Hawaii; J Aydelotte, MA, Idaho; B Steiner, MS, Illinois; K Horvath, Indiana; K MacIntyre, Iowa; J Tasheff, Kansas; T Sparks, Kentucky; B Bates, MSPH, Louisiana; D Maines, Maine; A Weinstein, MA, Maryland; D Brooks, MPH, Massachusetts; H McGee, MPH, Michigan; N Salem, PhD, Minnesota; D Johnson, MS, Mississippi; T Murayi, PhD, Missouri; P Feigley, PhD, Montana; L Andelt, PhD, Nebraska; E DeJan, MPH, Nevada; L Powers, MA, New Hampshire; G Boeselager, MS, New Jersey; W Honey, MPH, New Mexico; C Baker, New York; P Buescher, PhD, North Carolina; L Shireley, MPH, North Dakota; P Pullen, Ohio; N Hann, MPH, Oklahoma; J Grant-Worley, MS, Oregon; L Mann, Pennsylvania; Y Cintron, MPH, Puerto Rico; J Hesser, PhD, Rhode Island; M Wu, MD, South Carolina; M Gildemaster, South Dakota; D Ridings, Tennessee; K Condon, Texas; K Marti, Utah; C Roe, MS, Vermont; K Carswell, MPH, Virginia; K Wynkoop-Simmons, PhD, Washington; F King, West Virginia; P Imm, MS, Wisconsin; M Futa, MA, Wyoming. Epidemiology and Statistics Br, Div of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note:

Although the vaccination rates in this report are higher than those reported in 1993, a large gap remains between influenza and pneumococcal vaccination rates among persons with diabetes and the national health objective for 2000. Pneumonia and influenza are more likely to be listed as a cause of death for persons with diabetes than for persons without diabetes, and many deaths associated with pneumonia and influenza can be attributed to diabetes (1). For persons with diabetes, influenza and pneumococcal vaccines can reduce the number of respiratory infections, the number and length of hospitalizations for respiratory infections, the number of deaths from these infections, and medical expenses associated with influenza and pneumonia (2).

The national health objective for 2000 was reached only for influenza vaccination among persons aged greater than or equal to 65 years with diabetes. Since the ACIP recommends that everyone aged greater

than or equal to 65 years receive influenza and pneumococcal vaccinations (5,6), it may be routine for providers to offer vaccinations to persons aged greater than or equal to 65 years with diabetes. The findings indicate that many patients and providers may not be aware of the ACIP guidelines for persons with diabetes. Increased efforts are necessary to heighten awareness of the need for increased vaccination and to improve routine use of vaccination among persons of all ages with diabetes. These efforts should include incorporating recommendations for influenza and pneumococcal vaccinations into standard-of-care guidelines for persons with diabetes.

The findings that Hispanics and non-Hispanic blacks had lower vaccination rates than non-Hispanic whites are consistent with the 1993 examination of vaccination rates among persons with diabetes (4). These disparities may result from differences in access to vaccination services across these groups, differences in the quality of care received by different racial/ethnic groups, or social and cultural factors that impact vaccine acceptance. These disparities must be investigated further to improve vaccination rates in these populations.

Vaccination rates varied substantially among reporting areas, perhaps because of differences in demographic distribution, provision of adult vaccination programs, physician practice patterns, access to health care, and patient attitudes. CDC is evaluating these patterns to learn why they occur and how reporting areas with low coverage levels can improve them.

The findings in this analysis are subject to at least two limitations. First, persons residing in nursing homes and in households without telephones were not included in this survey; therefore, these results cannot be generalized to these segments of the population. Second, because data were self-reported, they are subject to recall bias. Self-report of diabetes and of influenza vaccination are highly accurate (7,8), but self-report of pneumococcal vaccination may be less accurate than self-report of influenza vaccination (9).

Most reporting areas did not meet the national vaccination objectives among their populations with diabetes. Recognizing the importance of preventive-care practices in reducing morbidity and mortality among persons with diabetes, CSTE has recommended that receipt of preventive-care practices among persons with diabetes, including influenza and pneumococcal vaccination, be placed under national public health surveillance.

CDC and other federal agencies have implemented the racial/ethnic disparities initiative. One objective is to eliminate racial/ethnic health disparities in vaccination rates by 2010. Additional information about the initiative is available from the World-Wide Web at <http://raceandhealth.hhs.gov/>* and http://www.cdc.gov/diabetes/projs/racial_init.htm.

In 1998, to improve vaccination rates among persons with diabetes, CDC implemented the Diabetes Flu/Pneumococcal Campaign entitled "Diabetes. One Disease. Many Risks." Through state-based diabetes-control programs (DCPs), the campaign encourages persons with diabetes to receive influenza and pneumococcal vaccinations. DCPs are implementing health systems-based interventions to encourage health-care professionals to recommend influenza and pneumococcal vaccinations. Because persons with diabetes report a high rate of routine medical care, these interventions can have a large impact on improving vaccination rates. Interventions that include standing orders for vaccination, using provider and patient recalls and reminders, and feedback on vaccination levels have been shown to be effective in increasing vaccination rates (10). In addition, opportunities for vaccination outside of traditional health-care settings should be extended to persons with diabetes who routinely do not have

access to traditional health-care facilities (10). Additional information about the Diabetes Flu/Pneumococcal Campaign is available from the World-Wide Web at <http://www.cdc.gov/diabetes/projs/cdc-flu.htm> and <http://www.cdc.gov/diabetes/states/states.htm>.

References

1. Valdez R, Narayan KMV, Geiss LS, Engelgau MM. The impact of diabetes mellitus on mortality associated with pneumonia and influenza among non-Hispanic black and white U.S. adults. *Am J Public Health* 1999;89:1715-21.
2. Nichol KL, Lind A, Margolis KL, et al. The effectiveness of vaccination against influenza in healthy, working adults. *N Engl J Med* 1995;333:889-93.
3. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives--full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212:913-9.
4. Beckles GL, Engelgau MM. Influenza and pneumococcal vaccination coverage in adults with diabetes, 1993. *Diabetes* 1997;46(suppl 1):62A.
5. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(no. RR-4).
6. CDC. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1997;46(no. RR-8).
7. Bowlin SJ, Morrill BD, Nafziger AN, Lewis C, Pearson TA. Reliability and changes in validity of self-reported cardiovascular disease risk factors using dual response: the Behavioral Risk Factor Survey. *J Clin Epidemiol* 1996;49:511-7.
8. Hutchison BG. Measurement of influenza vaccination status of the elderly by mailed questionnaire: response rate, validity, and cost. *Can J Public Health* 1989;80:271-5.
9. MacDonald R, Baken L, Nelson A, Nichol KL. Validation of self-report of influenza and pneumococcal vaccination status in elderly outpatients. *Am J Prev Med* 1999;16:173-7.
10. CDC. Vaccine-preventable diseases: improving vaccination coverage in children, adolescents, and adults. *MMWR* 1999;48(no. RR-8).

* References to sites of non-CDC organizations on the Internet are provided as a service to MMWR readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.