Recommendations for Preconception Health and Health Care: Strategies for Implementation

Secretary's Advisory Committee on Infant Mortality
November 29, 2006

Hani K. Atrash, MD, MPH

hka1@cdc.gov

Associate Director for Program Development

National Center on Birth Defects and Developmental Disabilities

And,

The CDC/ATSDR Workgroup on Preconception Care, and

The CDC Select Panel on Preconception Care

"The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention/the Agency for Toxic Substances and Disease Registry"

The Preconception Care Team

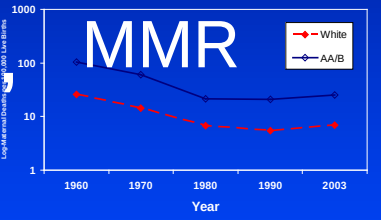
- **Steering Committee:**
  - CDC, HRSA/MCHB, ACOG, MOD, AMCHP, CityMatCH, Consultants
- **Select Panel:**
  - Representatives of partner organizations, subject matter experts
- **CDC/ATSDR Workgroup:**
  - Representatives of 22 programs (80+ members)
- **Workgroups (Clinical, Public Health, Consumer):**
  - Practitioners, members of select panel, members of CDC/ATSDR workgroup

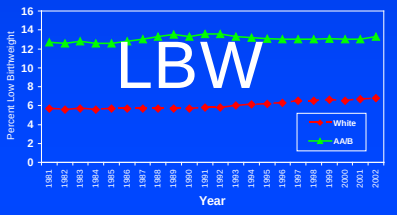
Why Preconception Care

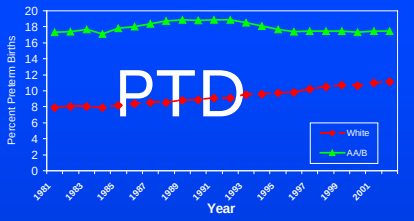
1. Poor Pregnancy Outcomes Continue To Be At Un-acceptable Levels
2. Women Enter Pregnancy “At Risk” For Adverse Outcomes
3. We Currently Intervene Too Late
4. Intervening Before Pregnancy Has Been Recommended
5. There Is Consensus That We Must Act Before Pregnancy

1. Adverse Pregnancy Outcomes Continue to be Higher Than Acceptable

- Levels of BDs, FAS, IM, LBW, PTD, MM&M, C-Section, unplanned pregnancies are too high
- Since 1980:
  - LBW increased 14.7% (VLBW 26%)
  - PTD increased 26% (VPTD 8.2%)
  - MMR increased 3.2%
  - IMR decreasing at a slow rate:
    - Causes changed
    - US is 28th among developed countries
  - Racial gap continues







2.1 Risk Factors Are Prevalent Among Pregnant Women

- Pre-exisiting medical condition 4.1%
- Rubella seronegative 7.1%
- Smoking 11%
- Alcohol 10.1%
- HIV/AIDS +ve 0.2%
- Inadequate pnc 15.9%

2.2 Risk Factors Are Prevalent Among Women Likely to Become Pregnant

- Cardiac Disease 3%
- Hypertension 3%
- Asthma 6%
- Diabetes 9%
- On teratogenic drugs 2.6%
- Overweight or Obese 50%
- Not taking folic acid 69%
- Dental caries/oral disease (Women 20-39) >80%

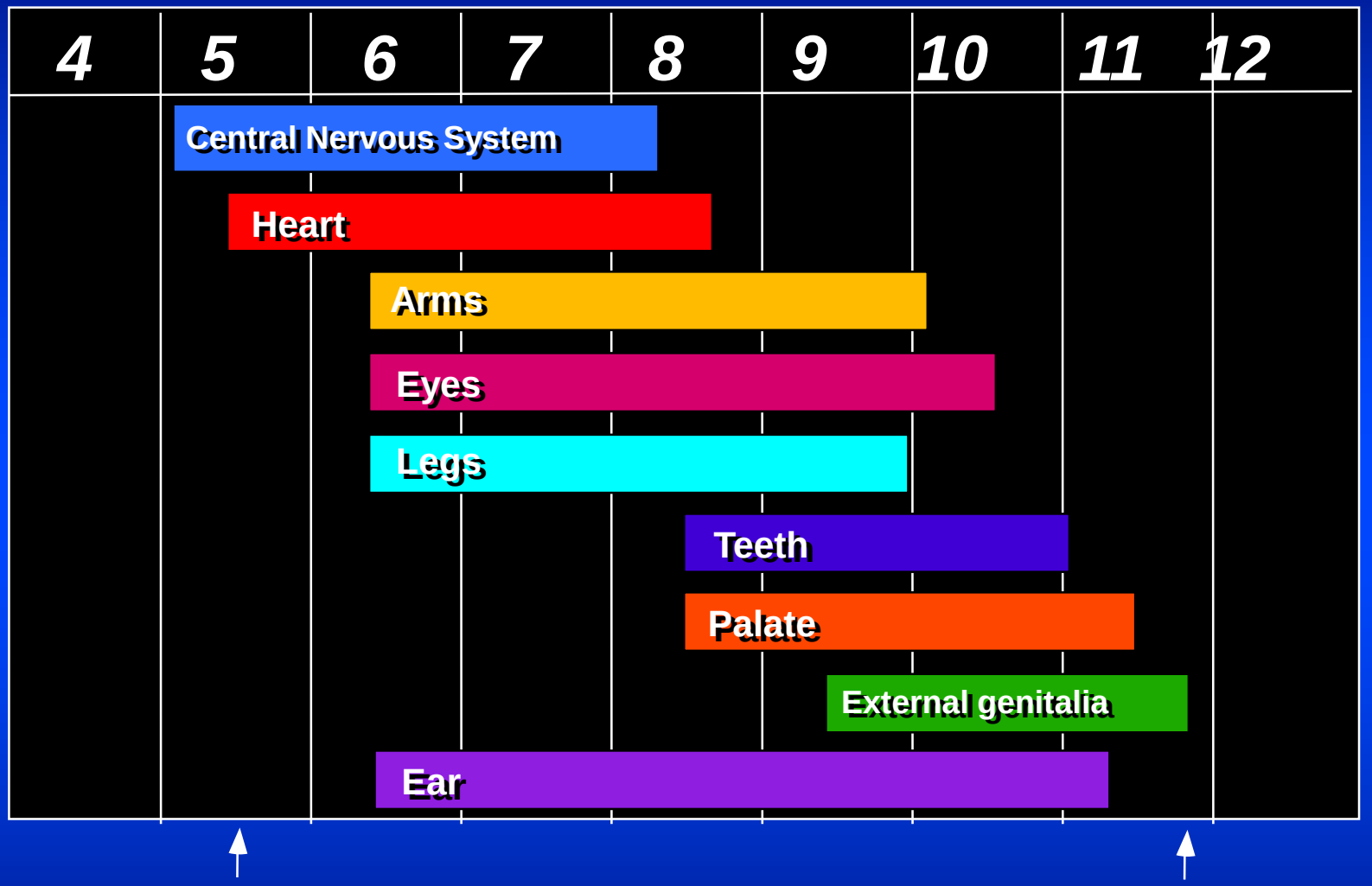
CDC

2.3 Risk Factors Are Prevalent Among Women Likely to Become Pregnant

- A high proportion of women reported one or more of 3 risk factors (frequent drinking, current smoking, and absence of an HIV test):
  - Preconception women: 54.5%
  - Pregnant women: 32%
- Women respond to messages regarding behaviors that directly affect pregnancy such as smoking, alcohol consumption and taking folic acid

Prevalence of Risk Factors for Adverse Pregnancy Outcomes During Pregnancy and the Preconception Period—United States, 2002–2004. John E. Anderson · Shahul Ebrahim · Louis Floyd · Hani Atrash

3. We Currently Intervene Too Late



Critical Periods of Fetal Development

Early prenatal care is not enough, and in many cases it is too late!

Preconception Care - Goal

To promote the health of women of reproductive age before conception and thereby improve pregnancy-related outcomes

Paradigm Shift

From

Anticipation and Management

to

Health Promotion and Prevention

From

Healthy Mothers Healthy Babies

to

Healthy Women Healthy Mothers Healthy Babies

4. Intervening Before Pregnancy Has been Recommended

Screening

HIV; Tests for specific indications: STDs; Tests to assess proven etiologies of recurrent pregnancy loss; Tests based on medical or reproductive history; Skin test for Tuberculosis; Screening for genetic Disorders based on family history: CF, Fragile X, mental retardation, Duchene muscular dystrophy; Screening for genetic disorders based on racial/ethnic background: Sickel hemoglobinopathies (African Americans), B-Thalassemia (Mediterraneans, SE Asia, AA/B), α-Thalassemia (AA/B and Asians), Tay Sachs disease (Ashkhenazi Jews, French Canadians, Cajuns), Gaucher's, Canavan, and Nieman-Pick Disease (Ashkenazi Jews), Cystic Fibrosis (Caucasians and Ashkenazi Jews)

Counseling

Exercising; Reducing weight before pregnancy, if overweight, Increasing weight before pregnancy, if underweight; Avoiding food additives; Preventing HIV infection; Determining the time of conception by an accurate menstrual history Abstaining from tobacco, alcohol, and illicit drug use before and during pregnancy; Consuming Folic Acid; Maintaining good control of any pre-existing medical conditions

Vaccination

Vaccinations should be offered to women found to be at risk for or susceptible to:
Rubella
Varicella
Hepatitis B

Maternal Assessment

Family planning and pregnancy spacing; Family history;enetic history (maternal and aternal); Medical, surgical, pulmonary and neurologic history; Current medications (prescription and OTC); Substance use, including alcohol, tobacco and illicit drugs; Nutrition; Domestic abuse and violence; Environmental and occupational exposures; Immunity and immunization status; Risk factors for STDs; Obstetric history; Gynecologic history; General physical exam; Assessment of Socioeconomic, educational, and cultural context

Preconception Interventions Work

Giving Protection:

- Folic Acid Supplements
- Rubella Immunization
- Testing for HIV/AIDS
- Hepatitis B Vaccination

Manage Conditions:

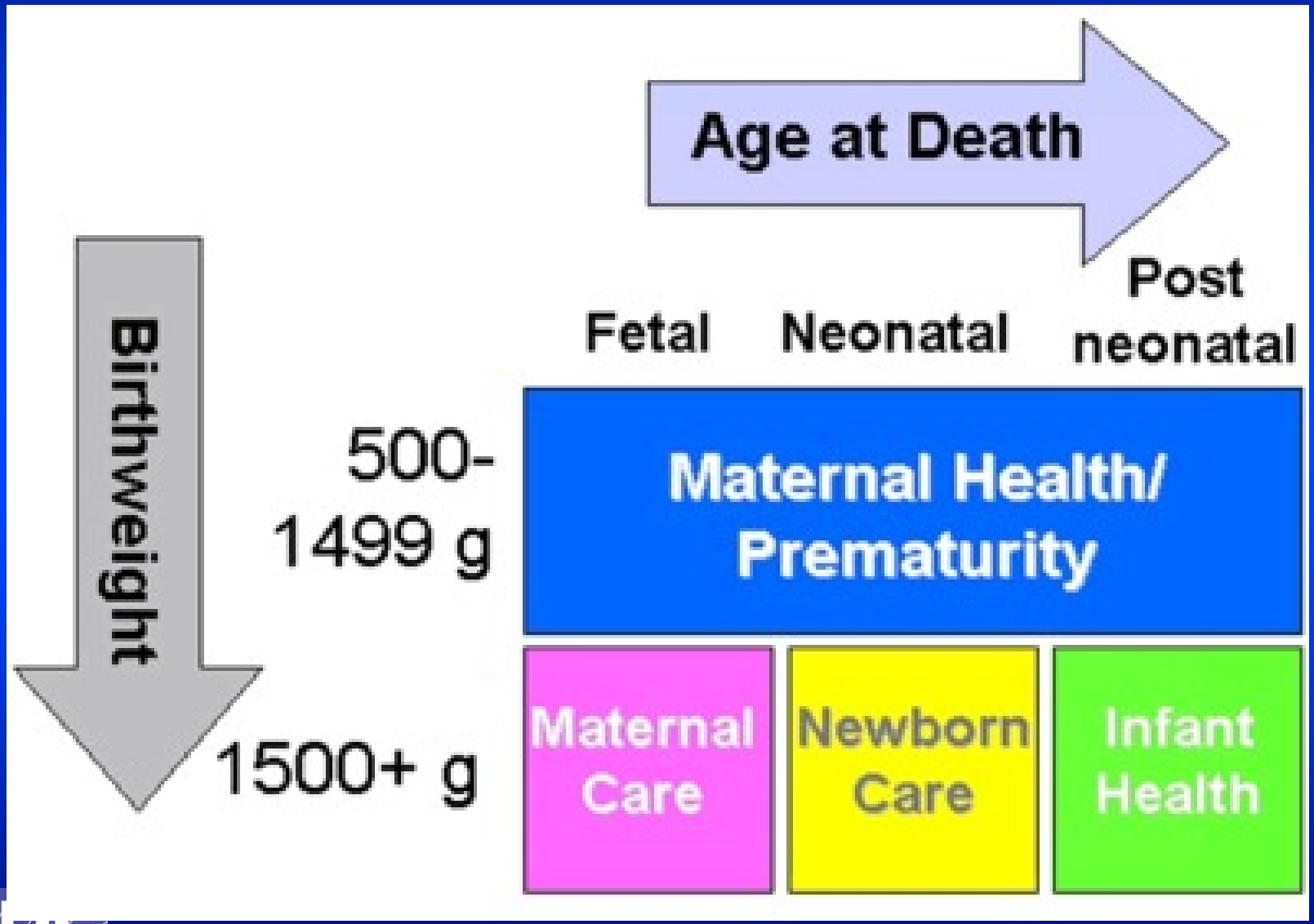
- Diabetes
- Hypothyroidism
- Maternal PKU
- Obesity
- STDs
- Oral Health

Avoid Teratogens:

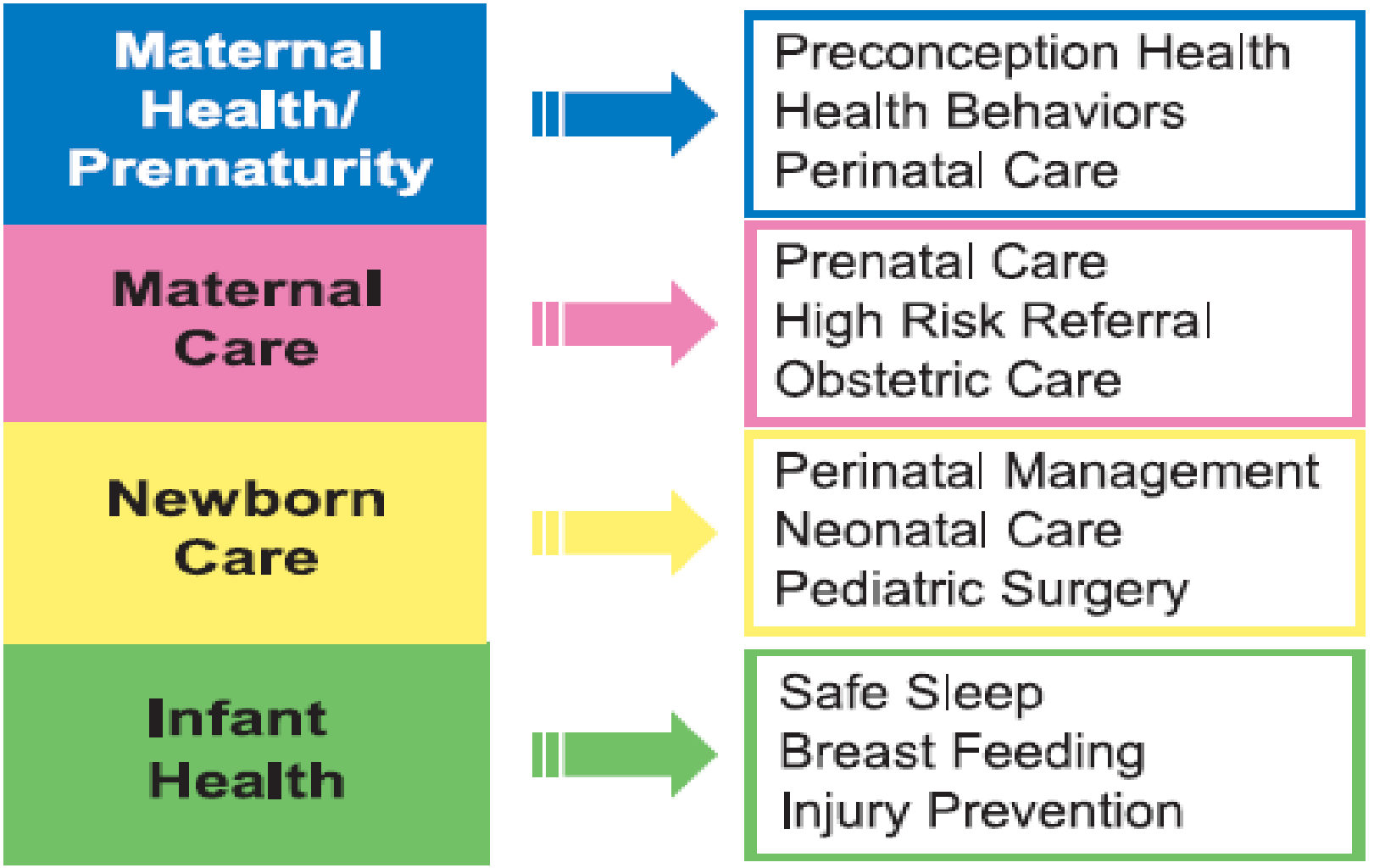
- Alcohol use
- Anti-epileptic drugs
- Accutane use
- Oral anticoagulants
- Smoking

CDC

Perinatal Periods of Risk



Community-level evidence: PPOR – The Perinatal Periods of Risk An approach to estimate *excess* mortality in each period of risk and to identify disparities among subpopulations



Women's Health (Illness) a Significant Contributor to Adverse Pregnancy Outcomes

(Published) analysis from Perinatal Periods of Risk projects in New York City, Tulsa, and Kansas City concluded that racial and ethnic disparities in feto-infant mortality were largely related to maternal health, and, interventions to reduce feto-infant mortality should include preconception care and improvements in women's health

- *Besculides M, Laraque F. Racial and ethnic disparities in perinatal mortality: applying the perinatal periods of risk model to identify areas for intervention. JAMA 2005;97:1128–32.*
- *Cai J, Hoff GL, Dew PC, Guillory VJ, Manning J. Perinatal periods of risk: analysis of fetal-infant mortality rates in Kansas City, Missouri. Matern Child Health J 2005;9:199–205.*
- *Burns PG. Reducing infant mortality rates using the perinatal periods of risk model. Public Health Nurs 2005;22:2–7.*

CDC

PPOR Analysis of 2000-2002 of data from the 66 largest cities, suggests that preventive action must address maternal health prior to conception and early in pregnancy

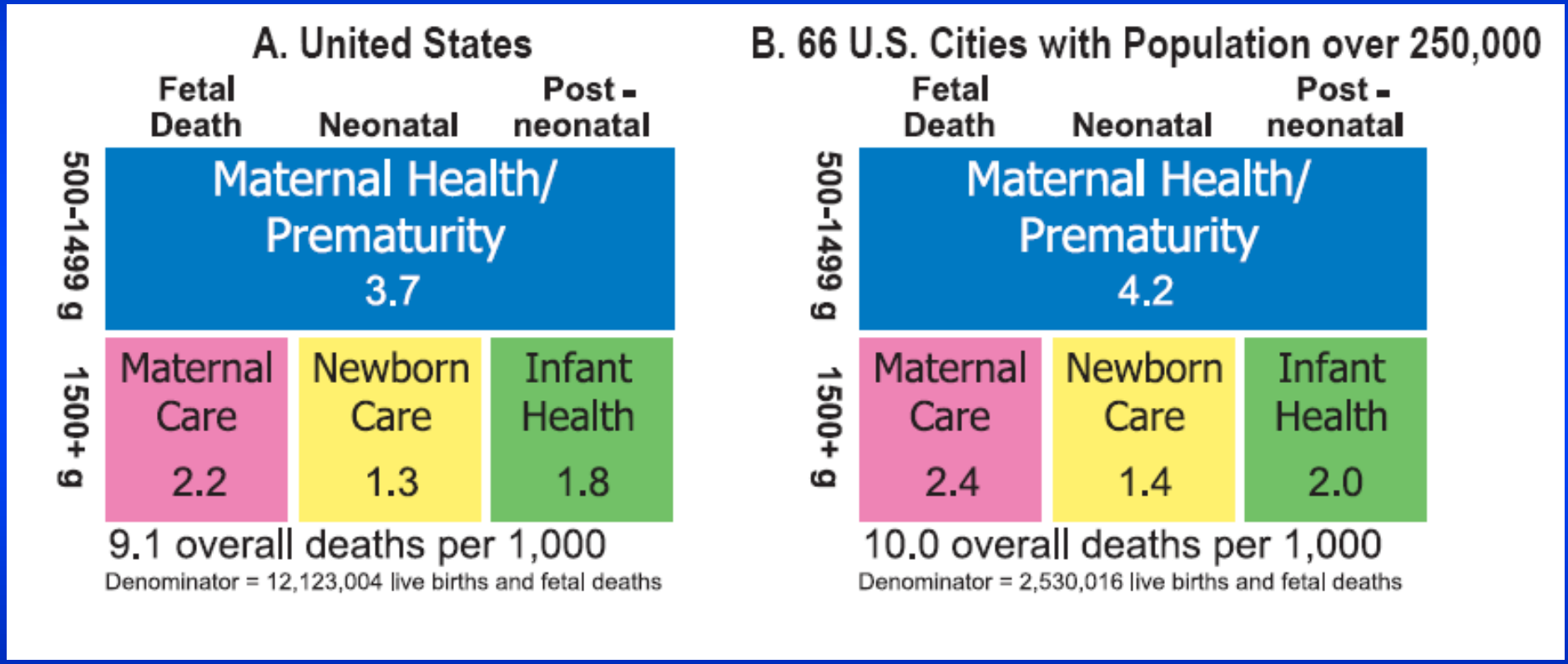
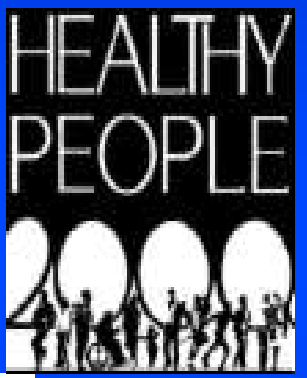


Figure 2. In 2000-2002, the overall PPOR feto-infant mortality rate was higher in the nation's largest cities than in the US as a whole.

5. Consensus that we must act before pregnancy

- Recommendations and clinical practice guidelines have been published by many organizations
  - **MOD**
  - **ACOG**
  - **AAP**
  - **AAFP**
  - **ACNM**
  - **USPHS**
  - **HP 2000**



March of Dimes
Saving babies, together

CDC

Not a new concept

Health Care Community:

- 1979: first federal position paper acknowledges the need to change the nation's approach to prevention -
- 1983, AAP, ACOG, in partnership with MOD: *Guidelines for Perinatal Care*
- 1985, IOM *Preventing Low Birthweight* report
- 1989, The Expert Panel on the Content of Prenatal Care
- 1990s: *Healthy People 2000*
- 1993, MOD: *Toward Improving the Outcome of Pregnancy: The 90s and Beyond*
- 1995: ACOG technical bulletin on preconception care

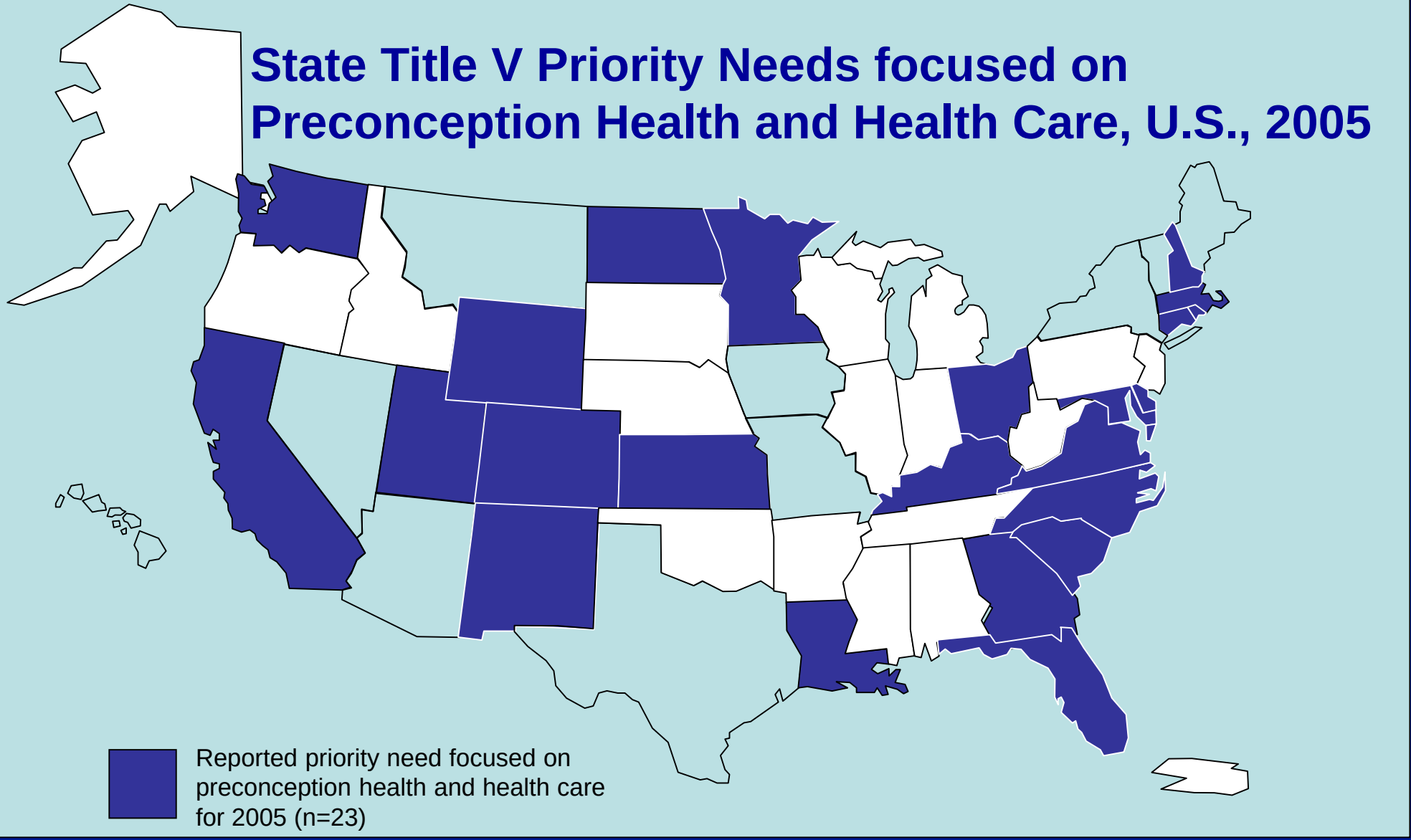
Professional organizations:

- AWHONN: Position Statement on Smoking and Childbearing
- ACNM: educational and practice
- MOD: numerous materials for health care professionals
- AAP, ACOG: increasing emphasis
- AAFP: many articles in the official journal

A preconception focus is being woven into existing programs and guiding the development of new initiatives

- Analysis of Summit abstracts and Title V Information
- 60 abstracts were presented at the Summit
  - 32% addressed preconception health research
  - 27% described preconception care programs and activities
  - 22% outlined tools for provider or patient education
  - 15% detailed clinical practice strategies
  - and 3% highlighted policy-based strategies for increasing access to preconception care services.
- Federally funded Healthy Start projects highly represented

Most states are already acting



Source: Boulet et al. MCHJ, September 2006. Data from Title V Information System

International policy directives and practice recommendations include provisions for the enhancement of women's wellness and social status as a means of reducing adverse pregnancy outcomes

- The notion of preconception care found in various global policy and practice recommendations concerning women's wellness and reproductive health
- International professional organizations and associations published directives and recommendations in support of preconception health
- Many countries have developed guidelines and implemented programs:
  - Wealthier countries use broader policies and guidelines
  - Less-developed countries use more targeted interventions

International Programs

- Hong Kong: The Family Planning Association of Hong Kong provides comprehensive preconception care including laboratory tests is provided to over 4000 women each year starting in 1998
- Korea: the Society of Maternal and Fetal Medicine promotes and enhance preconception care - About 60% of the women served have known medical risk history
- Belgium: The O.N.E "*Office de la Naissance et de l'Enfance"* has established an ad hoc-committee to develop a comprehensive social marketing and professional training strategy for pilot testing preconception care models
- In China, Guangxi province piloted preconception HIV testing and counseling among couples who sought the mandatory premarital medical examination as a component of the three-pronged approach to reduce mother to child transmission of HIV. HIV testing rates among couples increased from 38% to 62% over one year period.

Successful models of effective preconception services exist

- The Interpregnancy Care (IPC) Program Atlanta, GA:
  - Unrecognized or poorly managed chronic disease identified in 7 of 21 women
  - 21/21 women developed a reproductive plan for themselves
  - None of the 21 women became pregnant within nine months following the birth of their VLBW baby.
- The Magnolia Project, Jacksonville, FL:
  - Aims to reduce key risks in women of childbearing age through case management
  - Succeeded in resolving the key risks (lack of family planning, repeat STDs) in over 70% of case management participants
  - HRSA Office of Performance review reported that:
    - 86% of participants with family planning issues were now consistently using a method
    - 74% of participants with repeated STDs had no recurrent STDs

Promising Practices in Preconception Care for Women at Risk for Poor Health and Pregnancy Outcomes. Janis Biermann · Anne Lang Dunlop · Carol Brady · Cynthia Dubin · Alfred Brann Jr

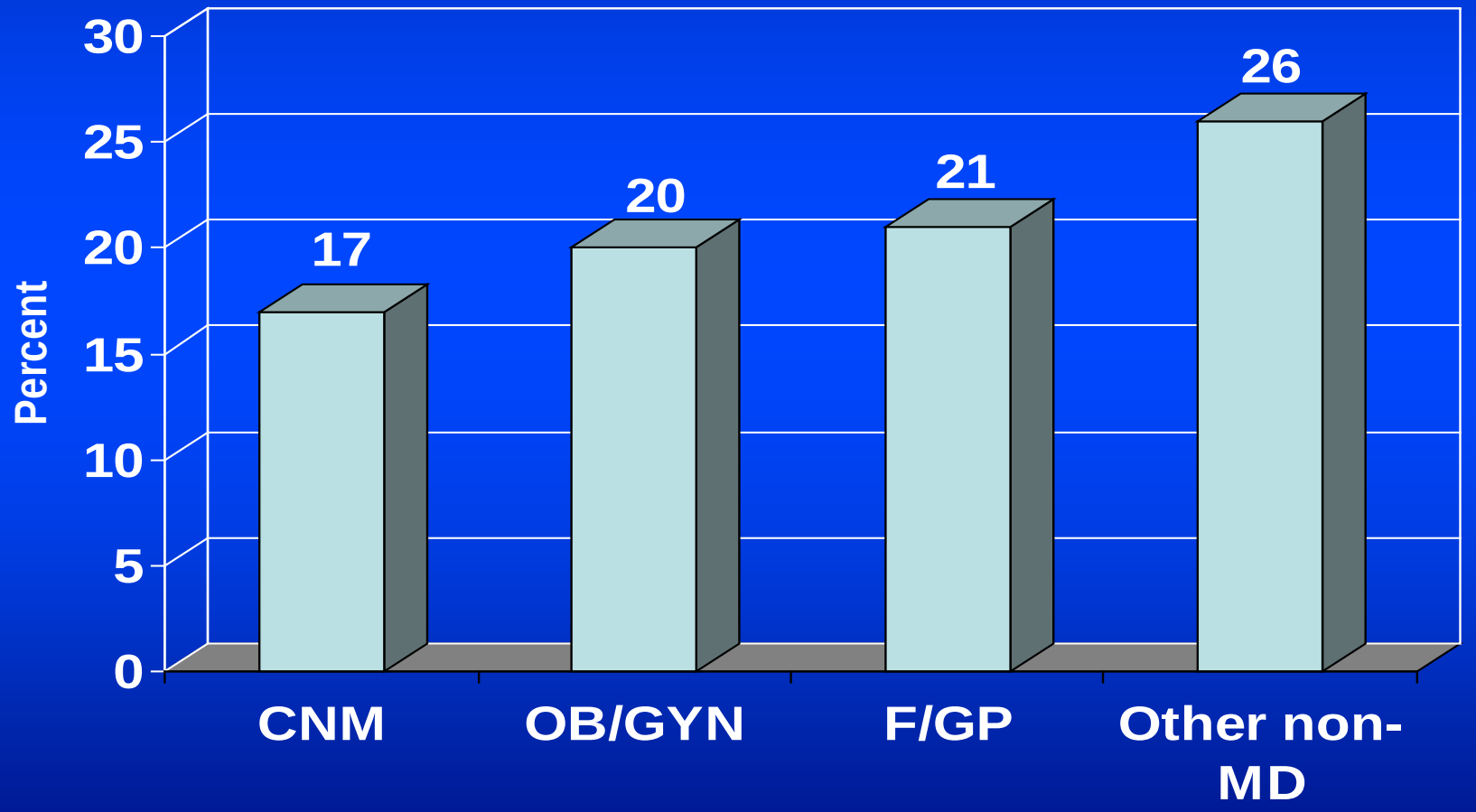
Providers: knowledge and practice still a challenge

- Surveyed 611 OB/GYNs and FAM/GENs and 500 PAs, NPs, CNMs, and RNs:
  - Almost all knew that FA prevents birth defects
  - Over 88% knew when a woman should start taking folic acid
  - Over 85% knew FA supplementation is necessary
  - However,
    - Half knew that 50% of all pregnancies are unplanned
    - 42% did not know the correct FA dosage (400 *µ*g daily)
    - Providers taking multivitamins were more than twice as likely to recommend multivitamins to their patients

Health Care Provider Knowledge and Practices Regarding Folic Acid, United States, 2002–2003. Jennifer L. Williams · Stephen M. Abelman · Elizabeth M. Fassett · Cheryl E. Stone · Joann R. Petrini. Karla Damus · Joseph Mulinare

Preconception care is NOT being delivered

Percent Eligible Patients Seen for Preconception Care by Type of Provider (2002-2003)



Consumers: Most women know that their health affects their pregnancy outcome

- A survey of 499 women:
  - 98.6% realized the importance of optimizing their health prior to a pregnancy, and realized the best time to receive information about preconception health is before conception.
  - 95.3% preferred to receive information about preconception health from their primary care physician.
- However, only 39% could recall their physician ever discussing this topic

Consumers: There is improvement but the need is still great!

- Of 2000 women surveyed every year from 1995–2005, the proportion of women who:
  - Heard or read about folic acid increased from 52% to 84%
  - Knew folic acid prevented birth defects increased from 4% to 19%
  - Reported learning about folic acid from health care providers increased from 13% to 26%
  - **Reported taking a vitamin containing folic acid daily increased from 25% to 31% (non-pregnant women)**

Trends in Folic Acid Awareness and Behavior in the United States: The Gallup Organization for the March of Dimes Foundation Surveys, 1995–2005 Kathleen Green-Raleigh · Heather Carter · Joseph Mulinare · Christine Prue · Joann Petrini

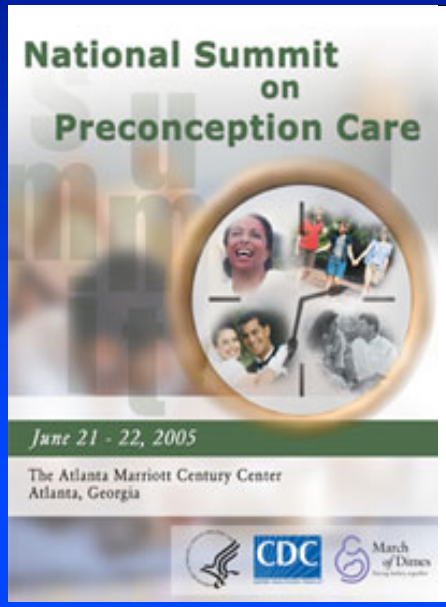
Why a CDC Preconception Health and Health Care Initiative?

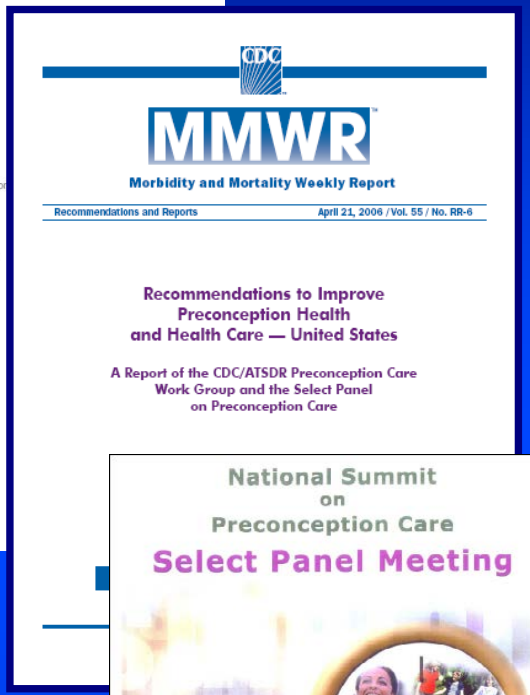
- Opportunities are missed
- New strategies are needed
  - Facilitate collaboration
  - Develop recommendations
  - Identify and address obstacles and opportunities:
    - » Clinical, Public health, Consumer, Policy & Finance, Research

Partners

With CDC's Environmental Health, Birth Defects and Developmental Disabilities, Chronic Disease, Infectious Diseases, National Immunization Program, Health Marketing, Health Statistics, HIV, STD, and TB Prevention, Women's Health, Genomics and Public Health

What Have We Done?





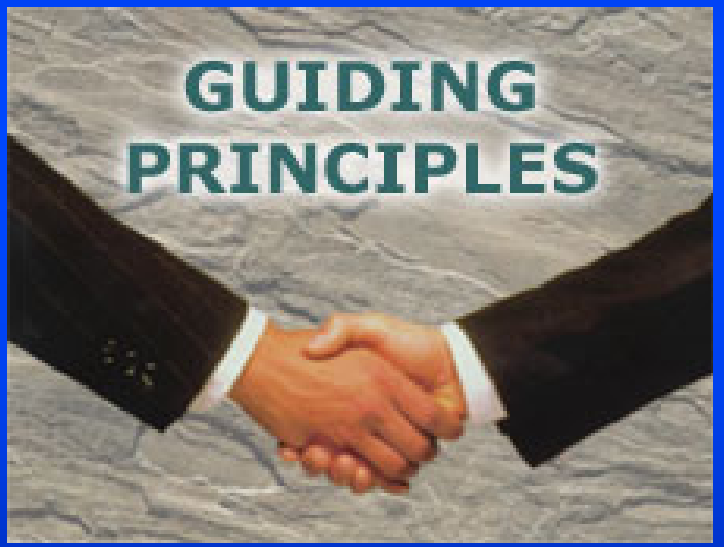
- Summit
- Select Panel Meeting
- Recommendations
- Supplement
- Lectures/Speakers' Bureau
- Evaluations/Best Practices
- Workgroups to develop implementation strategies
- TA to programs

Framework


Vision
Goals
Recommendations
Action Steps
Strategies for Implementation
Guiding Principals

Recommendations Guiding Principals

- Lifespan approach
- Individual behavior and responsibility
- PCC is a process of care
- Focus on changes in:
  - consumer knowledge
  - clinical practice
  - public health programs
  - health-care financing, and
  - data and research activities



CDC

Vision

- Reproductive awareness
- Reproductive life plan
- Planned pregnancies
- Health coverage
- Risk screening
- Intensive interconception care

Goals

- **Goal 1.** Improve knowledge, attitudes and behaviors
- **Goal 2.** Assure preconception care services
- **Goal 3.** Assure interconception interventions for high risk women
- **Goal 4.** Reduce disparities

Definition of PCC

A set of interventions that aim to **identify and modify biomedical, behavioral, and social risks** to a woman's health or pregnancy outcome through **prevention and management**, emphasizing those factors which must be acted on before conception or early in pregnancy to have maximal impact.

CDC's Select Panel on Preconception Care, June 2005

Recommendations 1-5

- **Recommendation 1.** Individual responsibility across the life span
- **Recommendation 2.** Consumer awareness
- **Recommendation 3.** Preventive visits
- **Recommendation 4.** Interventions for identified risks
- **Recommendation 5.** Interconception care

Recommendations 6-10

- **Recommendation 6.** Pre-pregnancy check ups
- **Recommendation 7.** Health coverage for low-income women
- **Recommendation 8.** Public health programs and strategies
- **Recommendation 9.** Research
- **Recommendation 10.** Monitoring improvements

Los Angeles Times latimes.com

Get healthy, then get pregnant

THE WALL STREET JOURNAL.

Forever Pregnant

WebMD

FOX NEWS .com

CDC: 10 Steps Health Providers Should Take to Improve Pre-Natal Health

AMA HELPING DOCTORS HELP PATIENTS

Resolution:414 (A-06)

JAMA

CDC Promotes Care Before Conception

USA TODAY

'Preconception': Plan for a good pregnancy

THE LANCET

CDC's roadmap for preconception health care

Star Bulletin .com

Care before conception Insurance coverage of pre-pregnancy care is urged

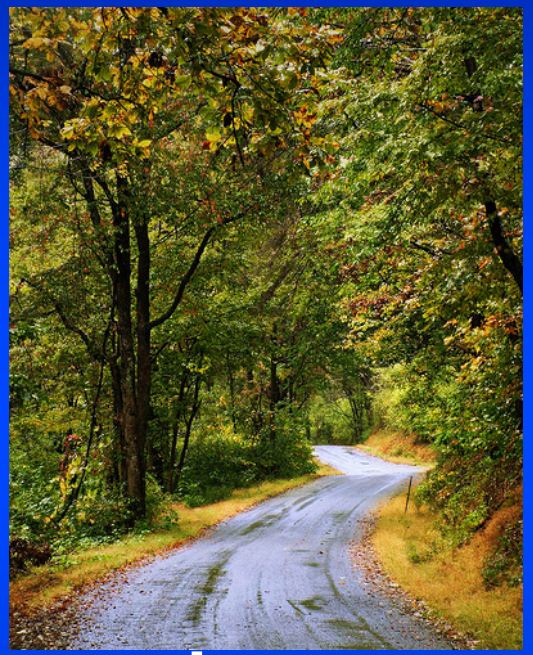
the village VOICE

CDC

STRAIGHT RIGHTS UPDATE

Steering Committee Meeting

The Road Ahead



1. Define contents
2. Integrate existing guidelines
3. Disseminate information
4. Demonstrate effectiveness
5. Explore means for financing
6. Monitor practice
7. Study association between women's health and pregnancy outcomes
7. Conduct a cost study

Strategies to Implement The Recommendations

- June 27/28, 2006 Workgroups:
  - Clinical
  - Public Health
  - Consumer
- Planned:
  - Policy
  - Finance

Strategies for Implementation

1. Clinical guidelines and tools
2. Consumer information
3. Public health programs and strateg
4. Monitoring and surveillance
5. Research agenda
6. Public policy and finance
7. Professional education/trainin
8. Best practices
9. Demonstration projects
10. State and local initiatives

Strategies for Implementation

1. CLINICAL GUIDELINES & TOOLS

a. Develop guidelines

b. Assess screening tools

c. Disseminate products

d. Redesign postpartum visit

e. Implement demonstration / quality improvement / research projects

Strategies for Implementation

2. CONSUMER INFORMATION

a. Develop consumer messages

b. Conduct community participatory action research

c. Compile consumer self-assessment tools

d. Study effectiveness of bundled messages

Strategies for Implementation

3. PUBLIC HEALTH PROGRAMS AND STRATEGIES

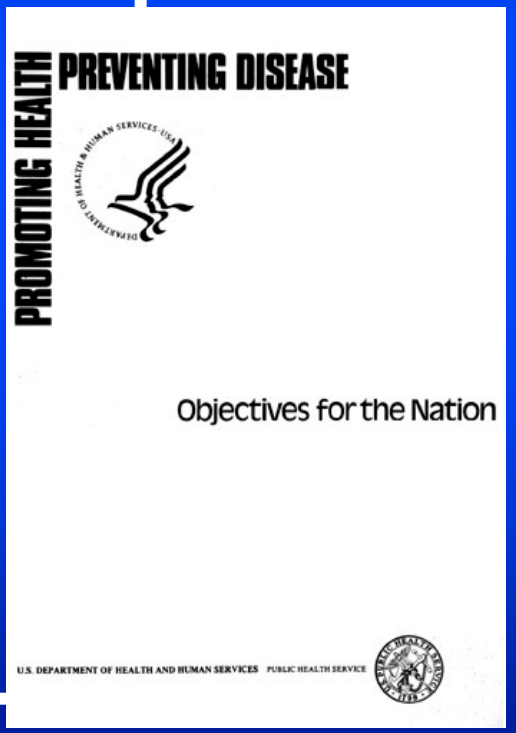
a. Encourage integration of PC practices

b. Develop, evaluate, and disseminate integrated approaches

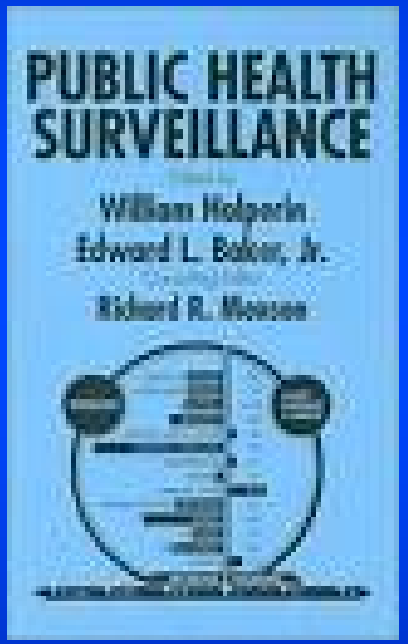
a. Analyze and evaluate Healthy Start PCC activities

a. Encourage action at the community

b. Support a Preconception Health Practice Collaborative



Strategies for Implementation



4. MONITORING & SURVEILLANCE

a. Improve surveillance and monitoring

b. Conduct needs / gaps assessment

c. Link to laboratory leadership

d. Link to prevention of birth defects

Strategies for Implementation

5. RESEARCH AGENDA

a. Develop a list of priority research projects

b. Generate research project proposals

Strategies for Implementation

6. PUBLIC POLICY AND FINANCE

a. Develop a menu of public policy options

a. Develop Medicaid demonstration

b. Develop a private health plan finance pilot/demonstration project

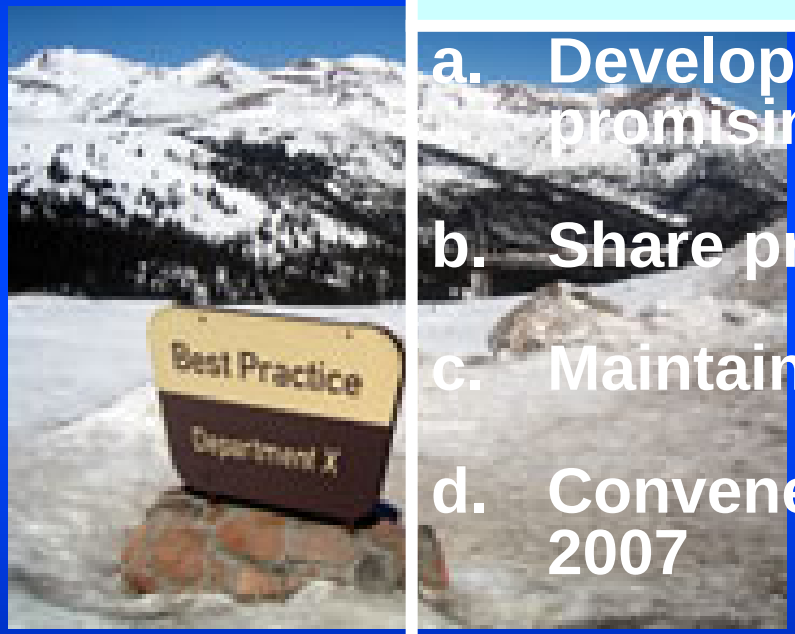
Strategies for Implementation

7. PROFESSIONAL EDUCATION AND TRAINING / WORKFORCE DEVELOPMENT

a. Promote Education And Training
   i. For public health professionals
   ii. For medical professionals / clinicians

b. Review and disseminate existing and new modules

Strategies for Implementation



8. BEST PRACTICES

a. Develop a catalogue of promising practices

b. Share promising practices

c. Maintain Internet web portals

d. Convene a national meeting in 2007

Strategies for Implementation

9. DEMONSTRATION PROJECTS

a. Evaluate current projects

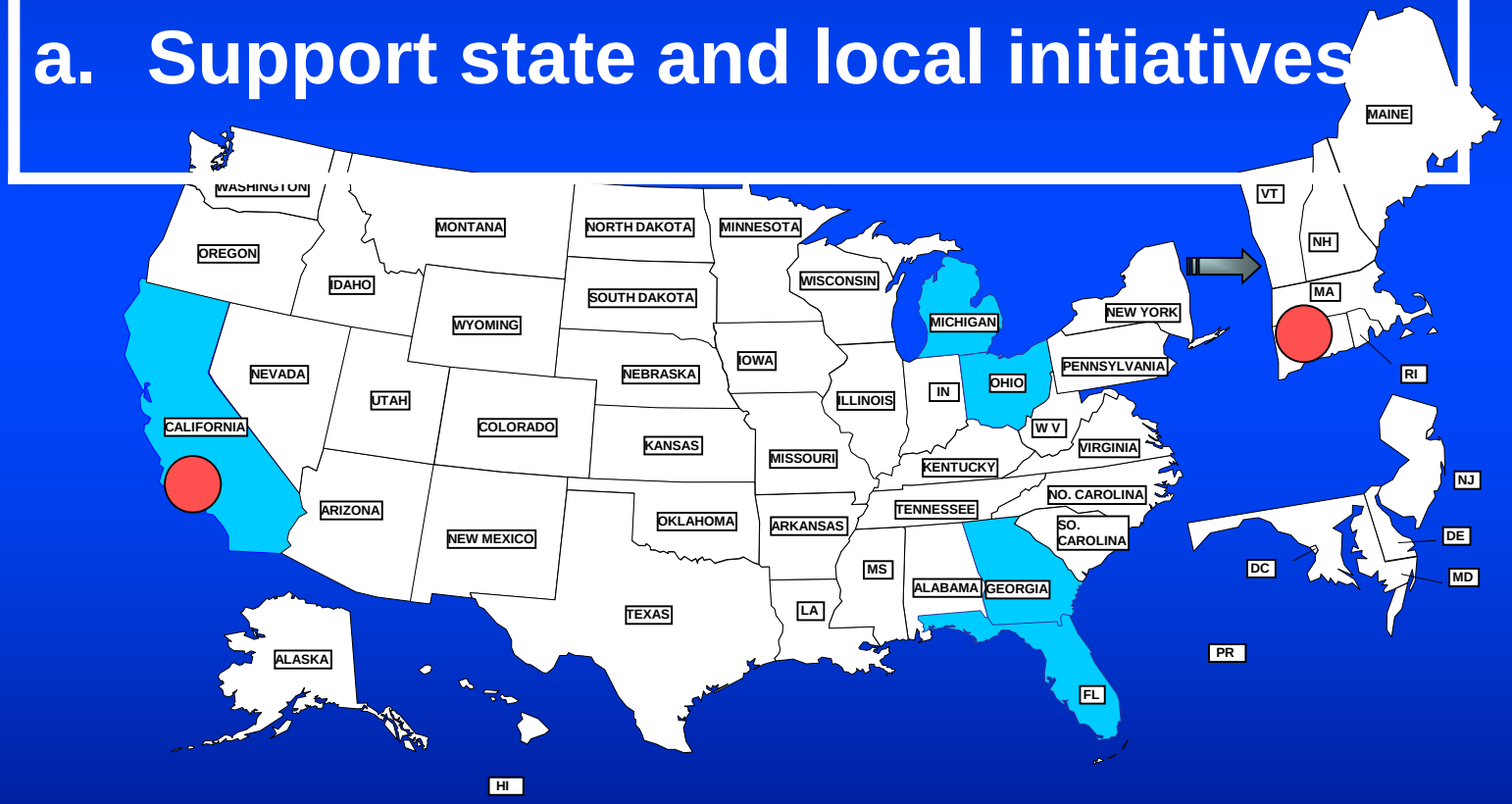
b. Initiate new projects

c. Identify opportunities in public health settings

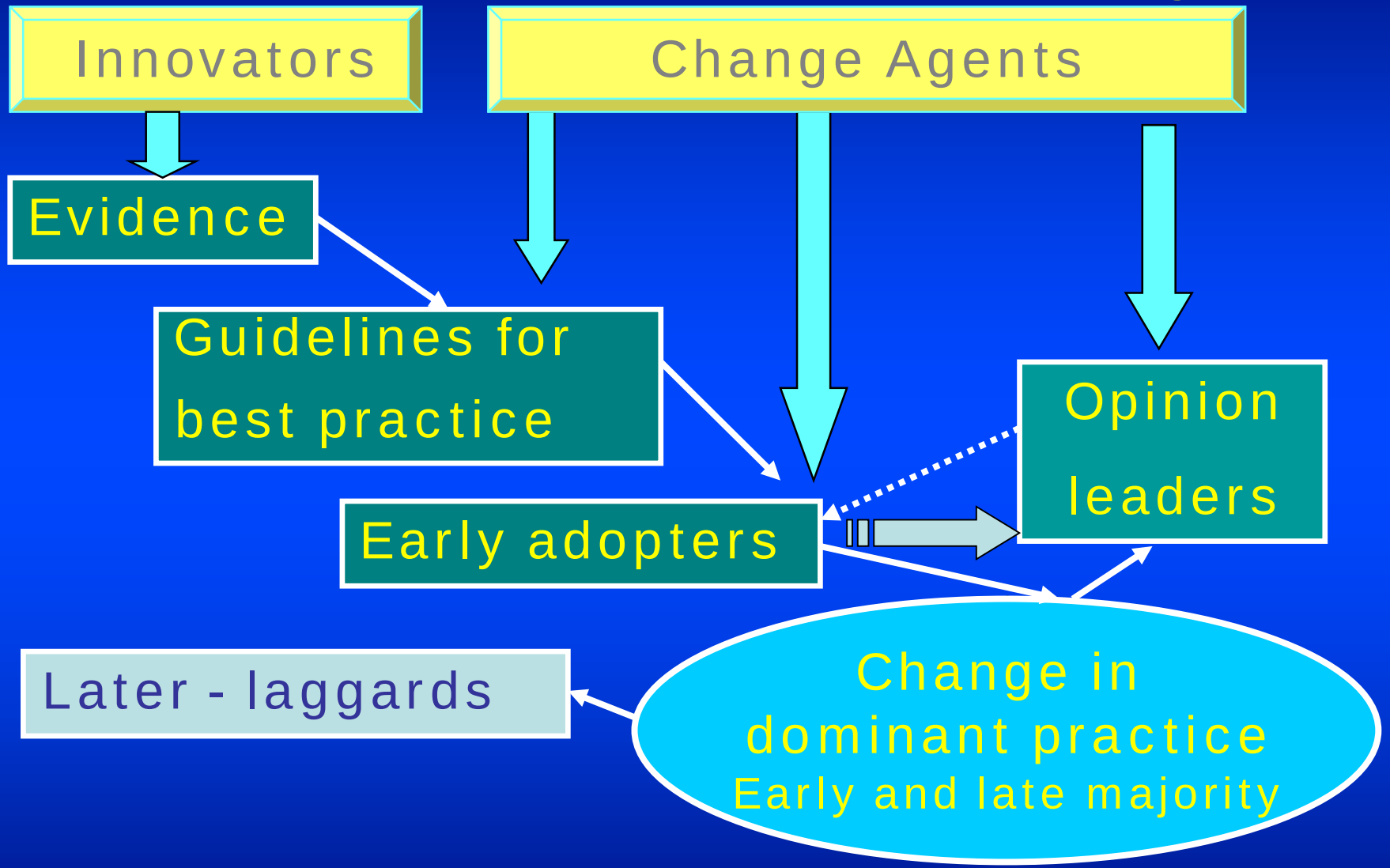
Strategies for Implementation

10. STATE & LOCAL INITIATIVES

a. Support state and local initiatives



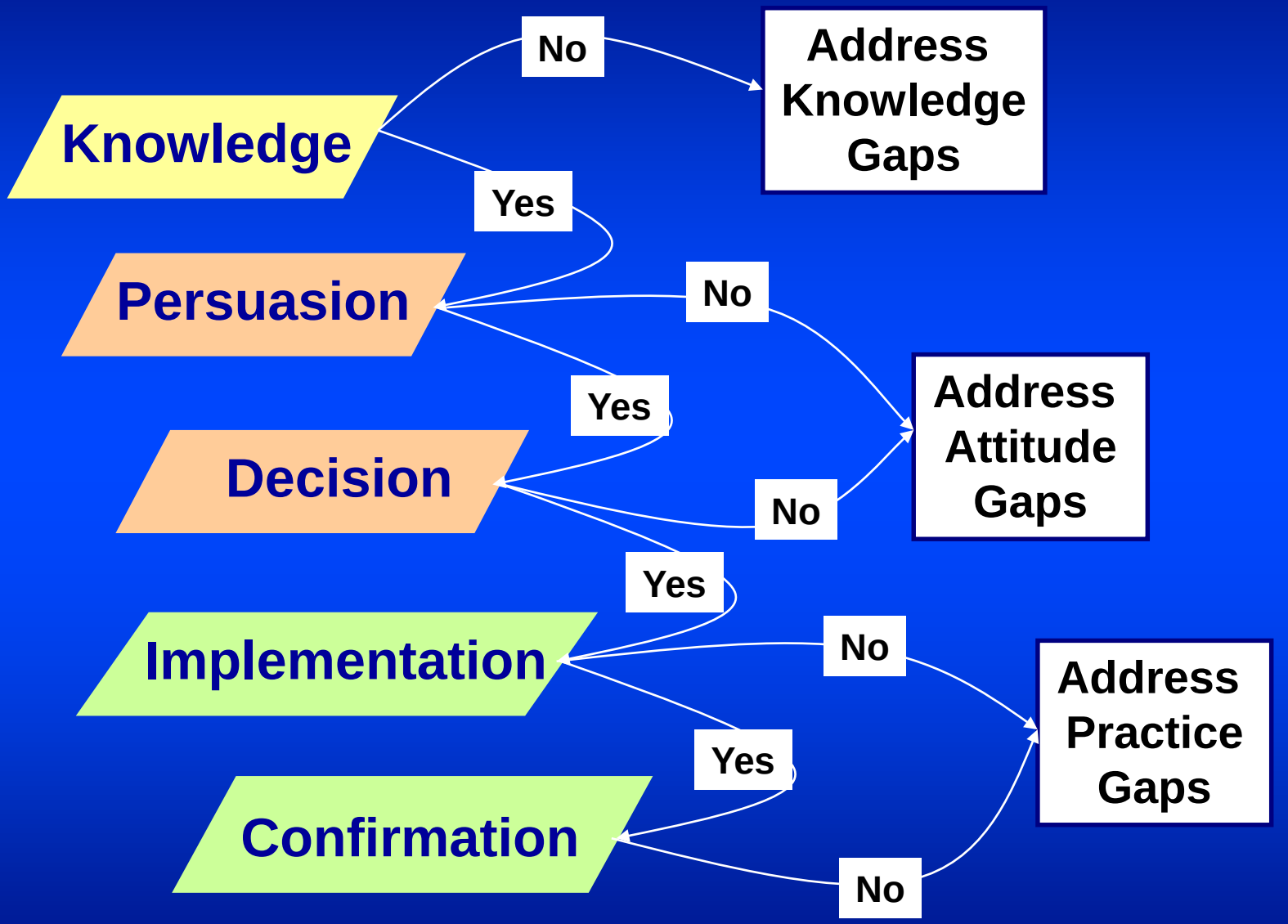
Diffusion of Innovation Theory



Implementation: The Goals

- Changing **consumer** knowledge, attitudes, and practices
- Changing **clinicians** knowledge, attitudes, and practices
- Change **public health** professionals knowledge, attitudes, and practices

Diagram by Kay Johnson
based on Rogers EM. Diffusion of Innovations, 3rd edition, 1983.



HOW: Address Knowledge Gaps

- Study the effectiveness of innovation
- Document what we know
- Identify gaps in knowledge
- Conduct social marketing

HOW: Address Attitude Gaps

- Demonstrate it's a good idea
  - **Relatively advantageous (better than what is done now)**
  - **Compatible with current practice**
  - **Not too difficult or complex to do**
  - **Easy to try out**
  - **Observable – seeing others do it**
- Involve opinion leaders
- Use change agents

HOW: Address Practice Gaps

- Support and reward those who adopt
- Set standards for practice
- Monitor practice and progress
- Accept reinvention

Areas of Activity for Implementation

- Information sharing
- Guidelines, standards, and tools
- Professional education
- Performance monitoring & surveillance
- Health services and marketing research
- Demonstration projects
- Learning collaboratives
- Coalitions and advocacy

Implementation: National Level

Strategic Approaches	CLINICAL	PUBLIC HEALTH	CONSUMER	PUBLIC POLICY & FINANCE
Info sharing	Monograph; MOD/CDC websites; Presentations	MCHJ Supplement; MOD/CDC websites; Speaker's bureau; presentations	Articles in mainstream women's magazines; MOD/CDC websites	Article in MCHJ Speaker's bureau; presentations
Guidelines, standards, tools	Develop consolidated clinical guidelines; Assess existing screening tools.	Assess existing screening tools.	Assess existing screening tools.	
Professional education	Develop model curriculum Update MOD curriculum	Promote use of MCHJ in schools of public health.		
Monitoring & surveillance	Use HEDIS postpartum visit data for QI.	Develop HP2020 Objective; Modify PRAMS / PPOR.		
Health services research	Design new clinical research projects.	Study Healthy Start interconception activities	Develop consumer messages with market research.	- Conduct economic research. - Make business case.
Demonstration projects	Demonstrate effectiveness of PCC approaches in clinical setting	Demonstrate impact of PCC approaches in PH population efforts	Conduct participatory action research with women at risk.	Develop Medicaid interconception care projects
Learning collaboratives	Implement clinical quality improvement practice collaboratives.	Implement public health practice collaboratives (state/local)		
Stakeholder groups or coalitions		Support State advisory groups, local coalitions		Convene Policy and Finance Workgroup

Implementation: State Level

Strategic Approaches	Examples
Info sharing	Convene statewide meetings; Disseminate information
Guidelines, standards, & tools	Disseminate guidelines; Review screening tools
Professional education	Support professional education; Create courses for students
Monitoring & surveillance	Add measures to Title V; Add questions to PRAMS
Health services research	Support health services research; Analyze existing state data
Demonstration projects	Pilot clinical screening tools; Pilot consumer information
Learning collaboratives	Create QI clinical / public health practice collaborative
Stakeholder groups or coalitions	Create advisory groups; Build working groups across agencies

Implementation: Local Level

Strategic Approaches	Examples
Info sharing	Host local meetings; Distribute publications; Disseminate through media
Guidelines, standards, & tools	Disseminate guidelines; Review tools in current use
Professional education	Host education sessions
Monitoring & surveillance	Look at HEDIS data; Focus services
Health services research	Assess consumer attitudes; Analyze existing local data
Demonstration projects	Pilot screening tools; Implement initiatives
Learning collaboratives	Create QI clinical / public health practice collaborative
Stakeholder groups or coalitions	Create advisory group; Engage consumers

Opportunities for federal and state governments

- Increase health coverage for low-income women of childbearing age through Medicaid policy changes and waivers
- Continue to increase support for community health centers and other federally qualified health centers in medically underserved communities
- Give greater attention to financing for health promotion and prevention programs, particularly programs such as Title X and Title V which focus on services to women of childbearing age

Opportunities for SACIM

- What might the SACIM recommend to the Secretary of HHS?
  - Permit states to use family planning waivers for more interconception care.
  - Permit coverage of more uninsured women using Medicaid and SCHIP.
  - Direct public health agencies to use resources to:
    - Develop programs, test models, fill gaps
    - Evaluate and monitor progress

Thank You!

Questions??? hka1@cdc.gov