SYSTEM DESIGN- QUALITY IMPROVEMENT TOOLS

The Institute of Medicine defines quality as, "The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."

This section provides tools and examples to aid clinical service providers in assessing their current systems and practices, in applying quality improvement methods to identify areas for improvement, and in bringing about incremental systems change.

In this section you will find tools to assist you in applying:

- Office Systems Inventory
- Cause and Effect Diagram
- Model for Improvement
- Plan-Do-Study-Act Cycles
- Care Model for Perinatal Health
- Measures
- Methods for Tracking Performance

OFFICE SYSTEM INVENTORY

Instructions: This office systems inventory can assist you in assessing the protocols and materials currently in place within your office practices that support:

- Appropriate screening, timely treatment, and follow-up for common urine and reproductive tract infections throughout pregnancy;
- Providing patient education; and
- Monitoring your clinical practices.

OFFICE SYSTEMS INVENTORY

Planned Care & Proactive Follow-up

We have **protocols** adopted and located in the clinic that:

❏ Adhere to evidence-based guidelines for **screening, treatment, and follow-up** for reproductive tract infections using recommended sensitive and specific tests;

❏ Screen for asymptomatic bacteriuria by culture;

❏ Provide timely treatment, or referrals for treatment, for partners of women with STIs which should include protocols to provide "Patient Delivered Partner Treatment"; and

❏ Show **clinical decision pathways** posted in the office/clinic for providers and staff.

We have **forms** that include places to document:

❏ That specimens are "Prenatal."

❏ Date of test **and** results for screening done at the **onset of prenatal care** for:

☐ Syphilis   ☐ Bacterial Vaginosis
☐ HIV   ☐ Rubella
☐ Hepatitis B   ☐ Hepatitis C (for women at risk)
☐ Gonorrhea   ☐ Chlamydia

❏ Date of test **and** results for screening done in the **early third trimester** for at-risk women:

☐ Syphilis   ☐ Gonorrhea
☐ HIV   ☐ Chlamydia

❏ Date of test **and** results for group B streptococcus at 35-37 weeks gestation.

❏ Date of partner referral for STI treatment or Date of "Patient Delivered Partner Treatment"

❏ Health education that is provided.

We have **processes** in place for:

❏ **Patient Education -** Staff are knowledgeable and trained; materials are culturally and linguistically appropriate.

❏ **Staff Reminders -** A system of reminders for staff and providers to complete specific tests or assessments at time points throughout pregnancy as recommended by evidence-based guidelines.

❏ **Mandatory Reporting -** Process in place to report sexually transmitted infections to the Department of Public Health.

Team Practices

This practice:

❏ Periodically evaluates providers' and staff knowledge, attitudes, and beliefs about screening, treatment, and follow-up for urine and reproductive tract infections;

❏ Provides continuing education, as new guidelines are released, and to address gaps in knowledge, attitudes, or beliefs about screening, treatment, and follow-up for urine and reproductive tract infections for providers and staff;

❏ Has clearly defined roles and responsibilities that distribute tasks supporting clinical care and patient education among staff and providers (e.g., review of lab results, patient notification, scheduling follow-up, mandated reporting, restocking patient education materials, etc.); and

❏ Uses counseling techniques or tools to assess the patient's knowledge about her specific infection and her skills to follow a plan of care to complete treatment and prevent reinfection (i.e. ability to assess symptoms, follow plans of care, and reduce risks for reinfection, if appropriate).

Care Management/Coordination

❏ We use easily understandable health education materials about infections and treatments, which include the importance of partner treatment and reinfection prevention for STIs, written in the most commonly encountered languages within the service area;

❏ We know where the health education handouts are; and

❏ We have systems in place for referral to programs, including case management programs for women with systemic or chronic infections such as HIV and Hepatitis C, or psychosocial needs.

Quality Improvement

❏ We monitor our current practices to ensure that patients receive the recommended infection screening, treatment, follow-up and partner management;

❏ We have a system in place to prepare and review monthly progress reports to monitor progress toward goals; and

We routinely review monthly progress reports with staff.

CAUSE AND EFFECT DIAGRAM

A cause and effect diagram is a useful tool that illustrates the areas within your system that may affect what you want to achieve. Considered one of the "7 Basic Tools of Quality," this type of diagram helps you see, in increasing layers of detail, the steps you may need to take in order to achieve a specific result. **This tool can help identify an area of your office system that may need improvement.**

The Institute for Healthcare Improvement describes two types of cause and effect diagrams:

1. **Process type** shows the possible causes of a problem at each step in the process; and
2. **Fishbone type** shows the different possible causes of a particular outcome or event.

An example of a Fishbone Cause-Effect Diagram is shown in Figure 17.

- The desired "effect" in the example is "Healthy Mother and Infant at Birth, without Complications from Infection." This is shown in the right side of the diagram, represented by the "head" of the fish.
- The processes that can potentially affect pregnancy-related complications from infection are grouped into categories, such as materials, methods, people, and work processes. Alternative categories can be selected depending on the problem being analyzed. These make up the large "bones" of the fish. The large bones represent the main areas where problems can occur, or in this case, that can contribute to the desired outcome. Items on the large bones are believed to be the causes of the outcome in the head of the fish.
- Detailed steps are added in each category to further identify potential problems or areas for improvement. These smaller bones, attached to the larger bones, represent the many deeper causes of potential problems or progress.

> **General categories for a Cause and effect Diagram**
> - **People** (all involved in the process),
> - **Methods** (policies and procedures),
> - **Equipment** (computers, tools),
> - **Materials** (raw materials used for final product),
> - **Measurements** (data from the process used to evaluate its quality), and
> - **Environment** (time, culture, etc., in which process operates).
>
> *Institute for Healthcare Improvement*

For more information please see:
www.IHI.org - Cause and Effect Diagrams

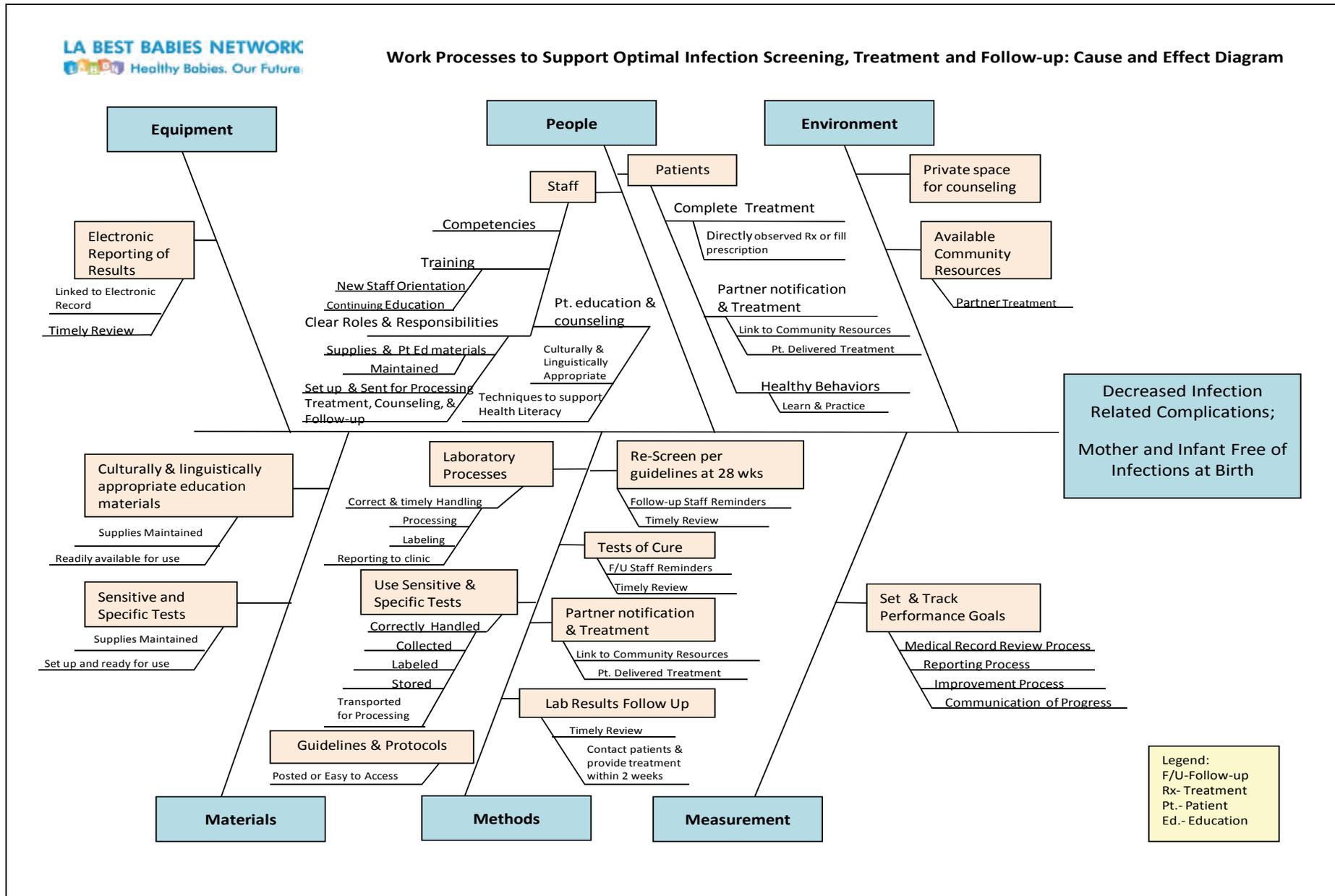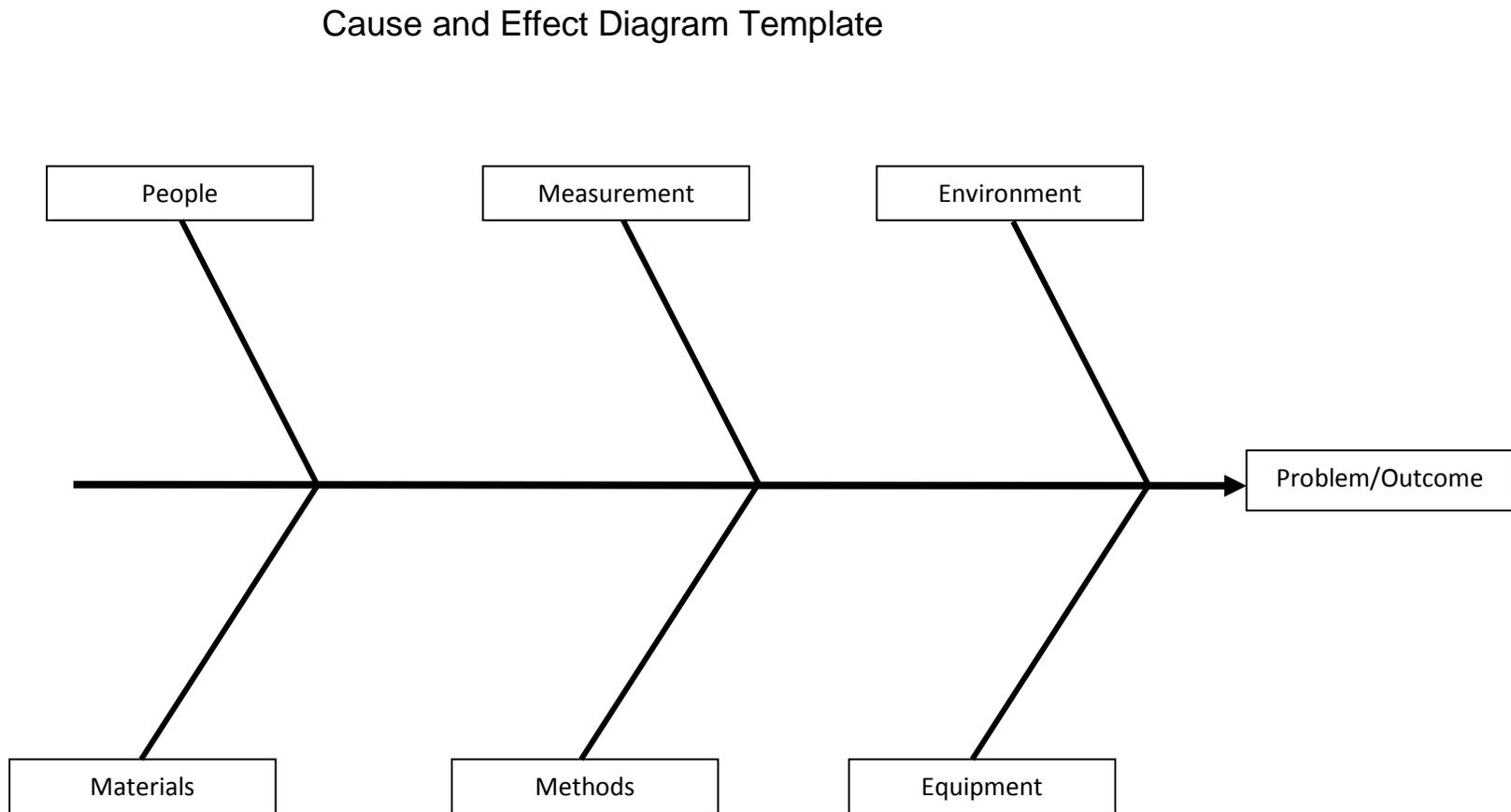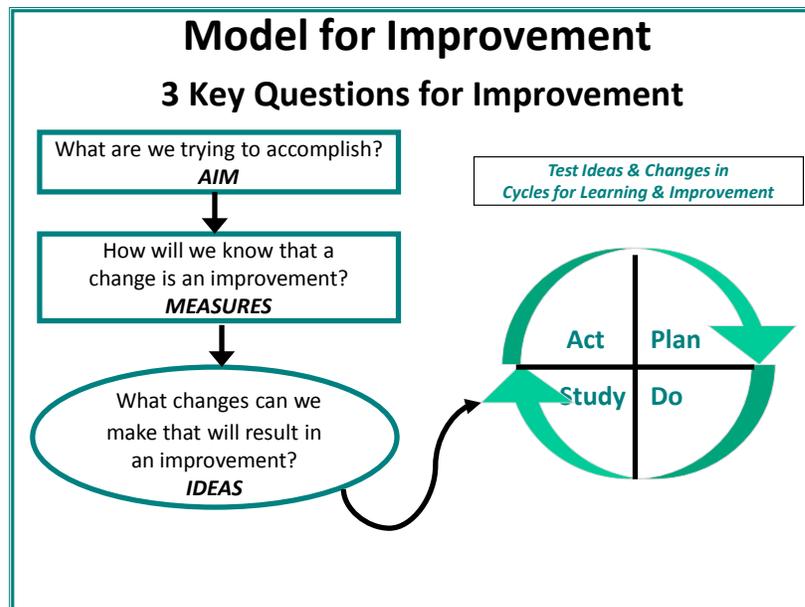**Figure 17.** An example of a Fishbone Cause and Effect Diagram

LA BEST BABIES NETWORK
Healthy Babies. Our Future

Work Processes to Support Optimal Infection Screening, Treatment and Follow-up: Cause and Effect Diagram

Equipment

People

Environment

Staff

Patients

Private space for counseling

Electronic Reporting of Results

Competencies

Complete Treatment

Available Community Resources

Linked to Electronic Record

Training

Directly observed Rx or fill prescription

Timely Review

New Staff Orientation

Continuing Education

Partner notification & Treatment

Partner Treatment

Clear Roles & Responsibilities

Pt. education & counseling

Link to Community Resources

Supplies & Pt Ed materials

Pt. Delivered Treatment

Maintained

Culturally & Linguistically Appropriate

Set up & Sent for Processing
Treatment, Counseling, & Follow-up

Techniques to support Health Literacy

Healthy Behaviors

Learn & Practice

Decreased Infection Related Complications;

Mother and Infant Free of Infections at Birth

Culturally & linguistically appropriate education materials

Laboratory Processes

Re-Screen per guidelines at 28 wks

Supplies Maintained

Correct & timely Handling

Follow-up Staff Reminders

Readily available for use

Processing

Timely Review

Labeling

Tests of Cure

Reporting to clinic

F/U Staff Reminders

Sensitive and Specific Tests

Use Sensitive & Specific Tests

Timely Review

Supplies Maintained

Correctly Handled

Partner notification & Treatment

Set & Track Performance Goals

Set up and ready for use

Collected

Labeled

Link to Community Resources

Medical Record Review Process

Stored

Pt. Delivered Treatment

Reporting Process

Transported for Processing

Lab Results Follow Up

Improvement Process

Communication of Progress

Guidelines & Protocols

Timely Review

Posted or Easy to Access

Contact patients & provide treatment within 2 weeks

Legend:
F/U-Follow-up
Rx- Treatment
Pt.- Patient
Ed.- Education

Materials

Methods

Measurement

Figure 18 Template for a Fishbone Cause and Effect Diagram.

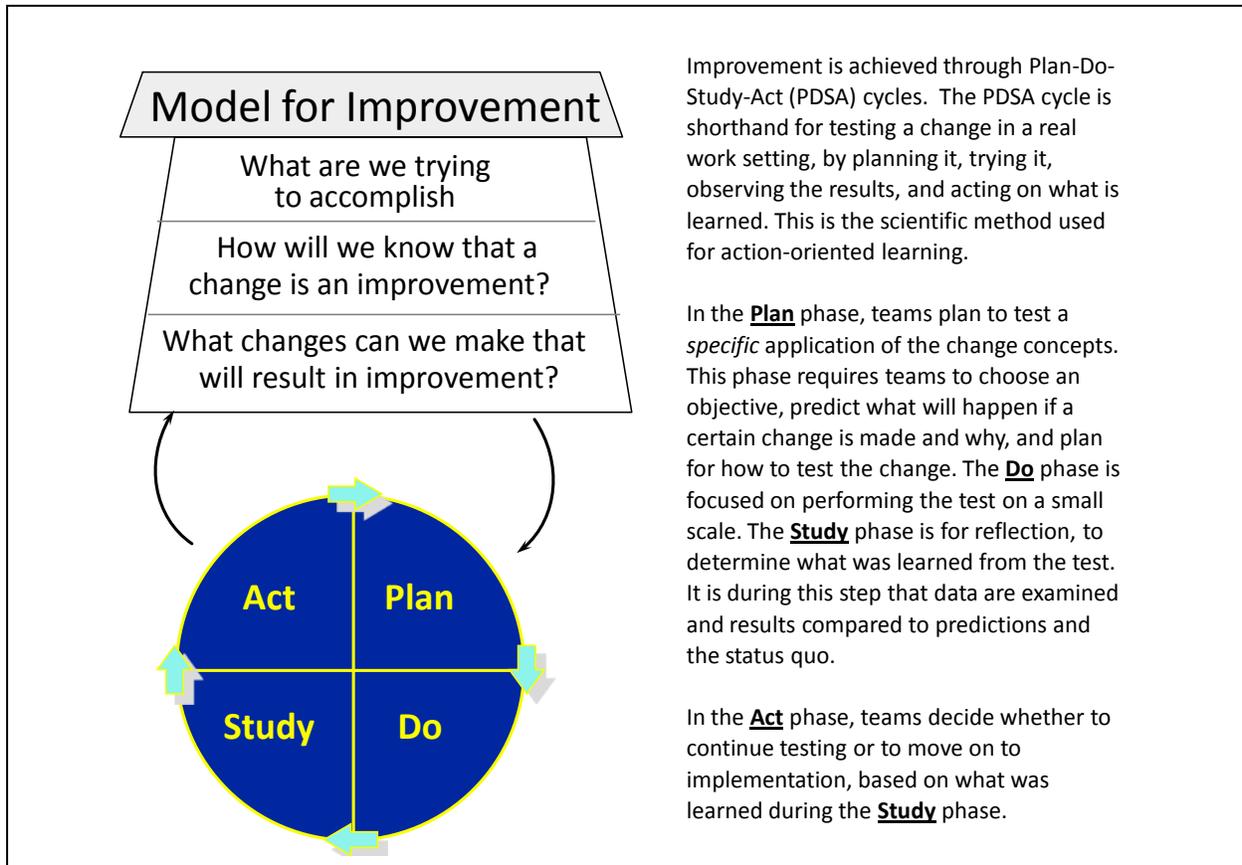## Cause and Effect Diagram Template

People

Measurement

Environment

Problem/Outcome

Materials

Methods

Equipment

Model for Improvement Key Points[*]

Model for Improvement

3 Key Questions for Improvement

What are we trying to accomplish?
AIM

How will we know that a change is an improvement?
MEASURES

What changes can we make that will result in an improvement?
IDEAS

Test Ideas & Changes in Cycles for Learning & Improvement

Act | Plan
Study | Do

The Model for Improvement is the foundation of the improvement approach used in a Collaborative. It is built on three fundamental questions:

1. **AIM: What are we trying to accomplish?** Improvement requires having an aim. Teams focus on answering this question during the pre-work phase to establish their aim.

2. **MEASURES: How will we know that a change is an improvement?** This question is addressed through a set of quantitative measures. Teams use ongoing, systematic data collection and analysis to track these measures over time.

3. **IDEAS: What changes can we make that will result in an improvement?** All improvement entails change, but not all changes result in improvement. Although many ideas for changes are listed in the Change Package, it is best that teams generate their own ideas specific to their environments.

---

[*] This document adapted from material provided to the Healthy Births Care Quality Collaborative June 2008.

Model for Improvement

What are we trying to accomplish

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

Act | Plan

Study | Do

Improvement is achieved through Plan-Do-Study-Act (PDSA) cycles. The PDSA cycle is shorthand for testing a change in a real work setting, by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method used for action-oriented learning.

In the **Plan** phase, teams plan to test a *specific* application of the change concepts. This phase requires teams to choose an objective, predict what will happen if a certain change is made and why, and plan for how to test the change. The **Do** phase is focused on performing the test on a small scale. The **Study** phase is for reflection, to determine what was learned from the test. It is during this step that data are examined and results compared to predictions and the status quo.

In the **Act** phase, teams decide whether to continue testing or to move on to implementation, based on what was learned during the **Study** phase.

The PDSA cycle is used by the teams over the course of the Collaborative. At regular intervals, teams will report on their tests of change and what they have learned as a result of these cycles. The PDSA cycle can be used for a variety of purposes: testing new ideas, implementing changes that show promise for improvement, and to spread changes throughout a system.

Question 1: What are we trying to accomplish?

AIM: A specific, measurable, time-sensitive, written statement of the accomplishments expected from the team's improvement effort. A strong, clear aim gives direction to improvement efforts, and is:
- Intentional, deliberate, planned
- Unambiguous, specific, concrete
- Measurable with a numeric goal, preferably one that motivates significant improvement
- Aligned with other organizational goals or strategic initiatives
- Agreed upon and supported by those involved in the improvement and leaders

Different forms are useful, but should include:
- What is expected to happen
- The system to be improved
- The setting or specific (sub-) population of patients
- Specific numeric goals
- Timeframe
- Some guidance for carrying out the work

Example

Aims Statement Focused on Urine and Infection Screening

Our organization will improve the prenatal care provided to our patients and decrease perinatal complications from common urine and reproductive tract infections. We will accomplish this by making changes in the following areas:

- Implementing recommended guidelines for screening, treatment and follow-up for urine and reproductive tract infections including:
    - Ensuring that over 95% of pregnant women have documentation in their medical records that they received education on, and were screened for, recommended infections, within four weeks of onset of care.
    - Establishing procedures to ensure that treatment for positive finding occurs within two weeks of test results and recommended test of cure procedures are followed.
    - Establishing mechanisms for appropriate partner notification and treatment.
    - Ensuring that repeat infection screening occurs at 28 weeks gestation and is documented in the medical record for over 90% of women recommended to receive repeat screening.

- Providing staff orientation and ongoing continuing education about the impact of common infections on pregnancy and infant health, proper screening, patient education, treatments and follow-up, and our office system procedures.
- Establishing procedures for provider and patient reminders when screening tests or follow-up is due.
- Establishing procedures for tracking progress towards our goals.

Explanation/Guidance: Our approach to improving prenatal care will be guided by the six components of the Care Model for Perinatal Care, with our first activities directed toward decision support and delivery system design.

We will start with small tests of change at our practice, in the area of screening and follow-up for genitourinary infections.

We will use CDC-P, ACOG, and Healthy Births Care Quality Collaborative recommendations as guidelines for screening, counseling, and treatment for urine and reproductive tract infections.

We will provide tools to assist providers and staff to implement these practices. In-services will be held to educate providers and staff about new practices and procedures.

By documenting information, we will be able to collect the necessary data that will allow us to monitor improvements in screening, counseling, treatment, and partner referral and treatment for these important components of prenatal care.

Our team will meet weekly to track what is being learned from each change tested and monitor progress.

Question 2: How will we know that a change is an improvement?

MEASURES: Measures are indicators of change. Measures are not used for judgment, but to monitor change leading to improvement.

To answer the key question, "How will we know that a change is an improvement?" several measures are usually required. Measures are used to monitor a system's performance over time, and during PDSA cycles. Using measurement immediately after an idea or change has been tested helps determine its effect.

There are three types of measures commonly used in improvement work to track a system's performance over time:

- **Process measures**—monitor changes to the system
- **Outcome measures**—monitor the results of system level performance
- **Balancing measures**—monitor whether changes to one part of the system cause problems in other parts of the system.

> **Measure examples**
>
> **Process Measure**—Percent of women with urine culture performed within four weeks of onset of prenatal care.
>
> **Outcome Measure**—Percent of women who develop pyelonephritis during pregnancy.
>
> **Balancing Measure**—Patient wait time from appointment check in to being seen by provider.

In improvement, key measures and measurement should:

- clarify and be directly linked to aims or goals;
- seek usefulness over perfection;
- be integrated into daily work whenever possible;
- be graphically and visibly displayed; and
- for PDSA cycle measurement, the measures should be simple and feasible enough to accomplish in close-time proximity to tests of change.

The development of national performance measures for prenatal care has lagged behind other areas of health care. The American College of Obstetricians and Gynecologists has proposed maternity care measures, but further research is needed on the use of performance measurements to improve the quality of prenatal care and reduce perinatal disparities.[70]

Examples of Performance Measures for Urine and Infection Screening

Measure	Description	Goal
Perinatal infection care	Percent of pregnant women with recommended infectious disease screenings completed at the first prenatal physical examination and treatment implemented within 2 weeks of test results. This must include all of the following documentation:	>99%

	(1) Screening tests:
	  a. Culture for asymptomatic bacteriuria,
	  b. Cervical NAAT[*] test for Chlamydia and Gonorrhea,
	  c. Bacterial vaginosis test
	  d. HIV test,
	  e. Syphilis serology,
	  f. Hepatitis B surface antigen
	  g. Hepatitis C antibody for high-risk women
	(2) Treatment within two weeks of test results according to recommended guidelines.	

Perinatal infection care follow-up	Percent of pregnant women with recommended infectious disease follow-up screenings completed at the recommended times in pregnancy. This must include all of the following documentation:	>99%

	1. Test of cure testing for positive findings as recommended (i.e., gonorrhea, chlamydia, urine, and/or bacterial vaginosis) within 3 to 4 weeks post treatment; and
	2. Re-screening high-risk women at approximately 28 weeks gestation for:
	  a. Cervical NAAT[*] test for Chlamydia and Gonorrhea,
	  b. Syphilis serology,
	  c. HIV
	• Group B Streptococcus introital/rectal sample collected at 35-36 weeks gestation and documented on the record by at least 38 weeks gestation.	

This type of measure is an **"all or none" measure**. All parts must be completed in order to count as complete. Each component of this example follows national recommended guidelines. Most experts recommend being able to track the individual components of "all or none" measures as well. This allows staff to see progress from the changes they are making and to celebrate "early wins" resulting from their hard work. For example several teams in the Healthy Births Care Quality Collaborative were conducting the appropriate screening tests, but not able to show improvement on this "all or none" measures. The area needing improvement for these teams was the provision of treatment within two weeks of the positive test results. These teams needed to focus their work and track "Treatment within two weeks" as their measure.

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[*] NAAT =Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)- Amplicor (Roche); APTIMA (GenProbe); BD ProbeTec (Becton Dickinson)

Examples of Measurement During PDSA

Decreasing Time from Positive Results to Treatment

PLAN: (State question you want answered)

Does placing a printout of the lab results in the providers' inbox shorten the time between when the clinic receives the lab results and the patient receives treatment?

What do you predict the results will be?

Physicians will review the labs the day they are received, and give orders to the nurse, who will contact the patient the same day.
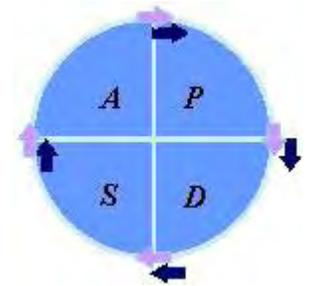
Plan for change or test: Who, What, When, Where?

On Wednesday morning, Sue, the MA will print the lab results from the new OB patients seen by Dr. Hogan on Monday, and put the list in Dr. Hogan's inbox.

How will you measure the outcome of the test?

1. Count the number of patients contacted for abnormal labs on the day of the test.
2. Count the number of days between receiving the lab results at the clinic and the patient receiving treatment.

Plan for collection of data to measure the test: Who, What, When, Where?

At the end of the clinic on Wednesday, the team will meet. Maria, the RN, will report to the team the number of patients that she contacted about their abnormal lab results, and compare this with the number of patients with abnormal results on the lab printout.

DO: Conduct the test.

STUDY: Collect the data and review the measurement of the test.

ACT: The next test will then be planned.

Question 3: What changes can we make that will result in an improvement?

IDEAS: Ideas for change, or **change concepts** to be tested in a PDSA cycle, can come from the **change package** provided from expert recommendations, or can be derived from:

- Evidence - results of research/science
- Critical thinking or observation of the current system
- Creative thinking
- Theories, questions, hunches
- Extrapolations from other situations

When selecting ideas to test, consider the following:

- Direct link to the aim
- Likely impact of the change (avoid low-impact changes)
- Potential for learning
- Feasibility
- Logical sequencing
- Series of tests that will build on one another
- Scale of the test (3 patients NOT 30)
- Shortness of the cycle (1 week NOT 1 month)

Benefits of testing your ideas

Testing increases your belief that the change will result in improvement.

- Provides an opportunity for learning from "failures" without impacting performance of the whole system.
- Allows you to document how much improvement can be expected from the change.
- Allows you to learn how to adapt the change to conditions in the local environment.
- Provides an opportunity to evaluate costs and side effects of the change.
- Minimizes resistance from other staff when you move to implementation.

What is a change concept?

A change concept is a general notion or approach to change that has been found to be useful in developing specific ideas for changes that lead to improvement.

—The Improvement Guide
Langley et al.

Example:
Embed evidence-based guidelines into daily clinical practice.
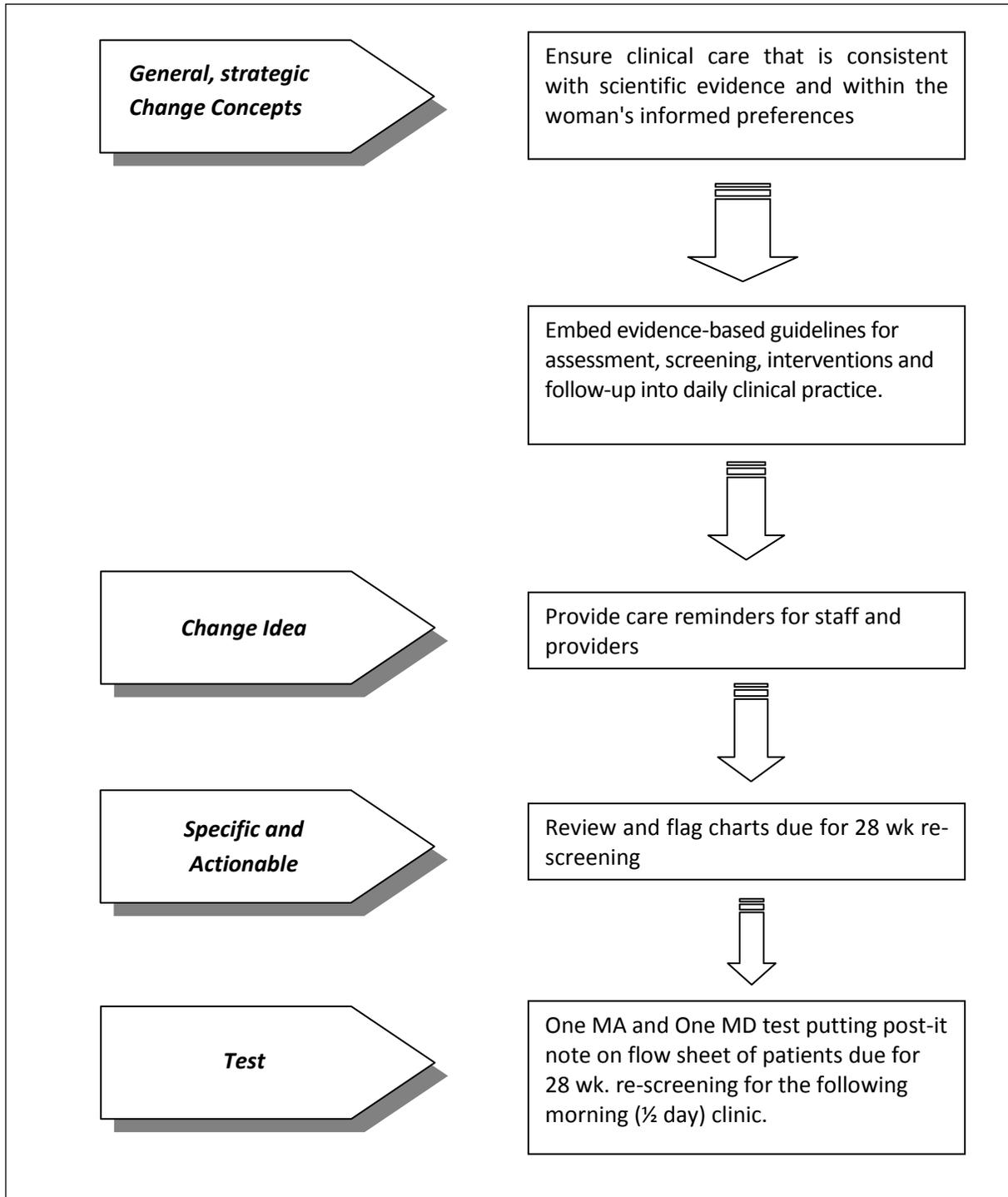
—The Care Model

What is a change package?

Change package—contains the key interventions proven to yield the desired results.

—*Institute for Healthcare Improvement*

Example

Moving from change concept to specific testable change ideas

Change concepts are not specific enough to use directly. A change concept is a guide that can be applied to your specific situation and used to brainstorm your specific ideas for changes to test.

General, strategic Change Concepts

> Ensure clinical care that is consistent with scientific evidence and within the woman's informed preferences

⬇

> Embed evidence-based guidelines for assessment, screening, interventions and follow-up into daily clinical practice.

⬇

Change Idea

> Provide care reminders for staff and providers

⬇

Specific and Actionable

> Review and flag charts due for 28 wk re-screening

⬇

Test

> One MA and One MD test putting post-it note on flow sheet of patients due for 28 wk. re-screening for the following morning (½ day) clinic.

MODEL FOR IMPROVEMENT	**Team Name:** _____ BV Tester _____
PDSA Planning Worksheet	**Cycle start date:** ___7/2___ **Cycle end date:** _____

Care Model Component

☐ Self Management Support ☐ Decision Support ☒ Delivery System Design
☐ Clinical Information Systems ☐ Health Systems ☐ Community

PLAN: (Describe the change you are testing and <u>state the question</u> you want to answer with this test.)

Does placing the BV test kit on the procedure tray with the Pap test increase the number of women being tested for BV at the first prenatal visit?
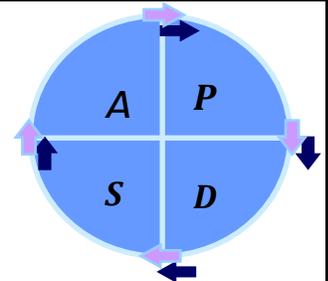
What do you <u>predict</u> the result will be?

Having the test ready for use will remind the provider to collect the sample.

Plan for change or test: Who, what, when, where?

During the Tuesday morning clinic, Sue, Dr White's MA, will place the BV test kit next to the Pap smear, for all new prenatal patients. Dr. White will take the BV sample, read the test results, and record them in the chart.

How will you measure the outcome of the test?

By logging the number of BV test kits used; the number new OB patients who were screened for BV; and the number of new OB patients seen in the morning.

Plan for collection of data: Who, what, when, where?

The MA will place a check mark next to the patient's name on the patient list each time the BV test kit is used. At the end of the clinic the MA will count the number of check marks.

Dr. White will review charts at the end of the clinic to see how many have BV test results recorded.

The MA and Dr. White will compare the records in the charts against the check marks indicating a test was done, and against the number of new prenatal patients.
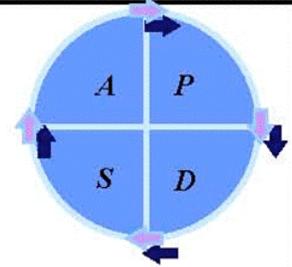
DO: (Carry out the change or test; collect data and feedback. Describe what happened include reporting of any unexpected events. Begin analysis.)

STUDY: (Complete analysis of data; summarize what was learned; compare your results to your predictions. What did you learn? Any surprises?)

Discrepancies in the number of tests used vs. results recorded in the charts might suggest one PDSA cycle; whereas a discrepancy in the number of new patients seen vs. the number of those tested would point to a different PDSA cycle.

ACT: (Are you ready to implement the change you tested? Modifications or refinements for the next cycle; what will you do next? Plan for next cycle)

MODEL FOR IMPROVEMENT **PDSA Planning Worksheet**	*Team Name:* _____
	Cycle start date:_____ **Cycle end date:**_____

Care Model Component	☐ Self Management Support ☐ Clinical Information Systems	☐ Decision Support ☐ Health Systems	☐ Delivery System Design ☐ Community

PLAN: (Describe the change you are testing and **state the question** you want to answer with this test.)

What do you **predict** the result will be?

Plan for change or test: who, what, when, where

How will you measure the outcome of the test?

Plan for collection of data: Who, What, When, Where?

DO: (Carry out the change or test; collect data and feedback. Describe what happened include reporting of any unexpected events. Begin analysis.)

STUDY: (Complete analysis of data; summarize what was learned; compare your results to your predictions. What did you learn? Any surprises?)

ACT: (Are you ready to implement the change you tested? Modifications or refinements for the next cycle; what will you do next? Plan for next cycle)

Tips to make the most of PDSA cycles and tests of change:

- ✓ Think a couple of cycles ahead

- ✓ Plan multiple cycles to test and adapt change

- ✓ Scale down size of test (# of patients, location)….A "cycle of 1"

- ✓ Do more cycles, at a smaller scale and faster pace instead of fewer, bigger, slower

- ✓ Test with volunteers first

- ✓ Don't seek buy-in or consensus for the test – particularly early on

- ✓ Be innovative and flexible to make test feasible

- ✓ Collect useful (and only just enough) data during each test

- ✓ Test over a wide range of conditions

- ✓ Learn from failures as well as successes

- ✓ Communicate what you've learned

- ✓ Engage leadership support

Urine and Reproductive Tract Infections Data Collection Tool

Elements:

- Recommended Screening tests completed for all prenatal patients: asymptomatic bacteriuria[*]; syphilis; HIV; hepatitis B; chlamydia[†]; Plus recommended screening tests completed for high-risk patients: gonorrhea[*], bacterial vaginosis, hepatitis C. Per CDC Guidelines MMWR 2006.
- Screening tests collected within 4 weeks of onset of prenatal care. Per California Comprehensive Perinatal Services Guidelines
- Treatment provided within 2 weeks of positive results.

Instructions: During the first week of the month review 5 charts for new prenatal patients who began their care during the first week of the prior month.

Numerator: Number of individual components documented on the medical record laboratory flow sheet (10 components x 5 charts=50)

Denominator: Number of possible individual components in the five charts (5 charts x 10 components= 50)

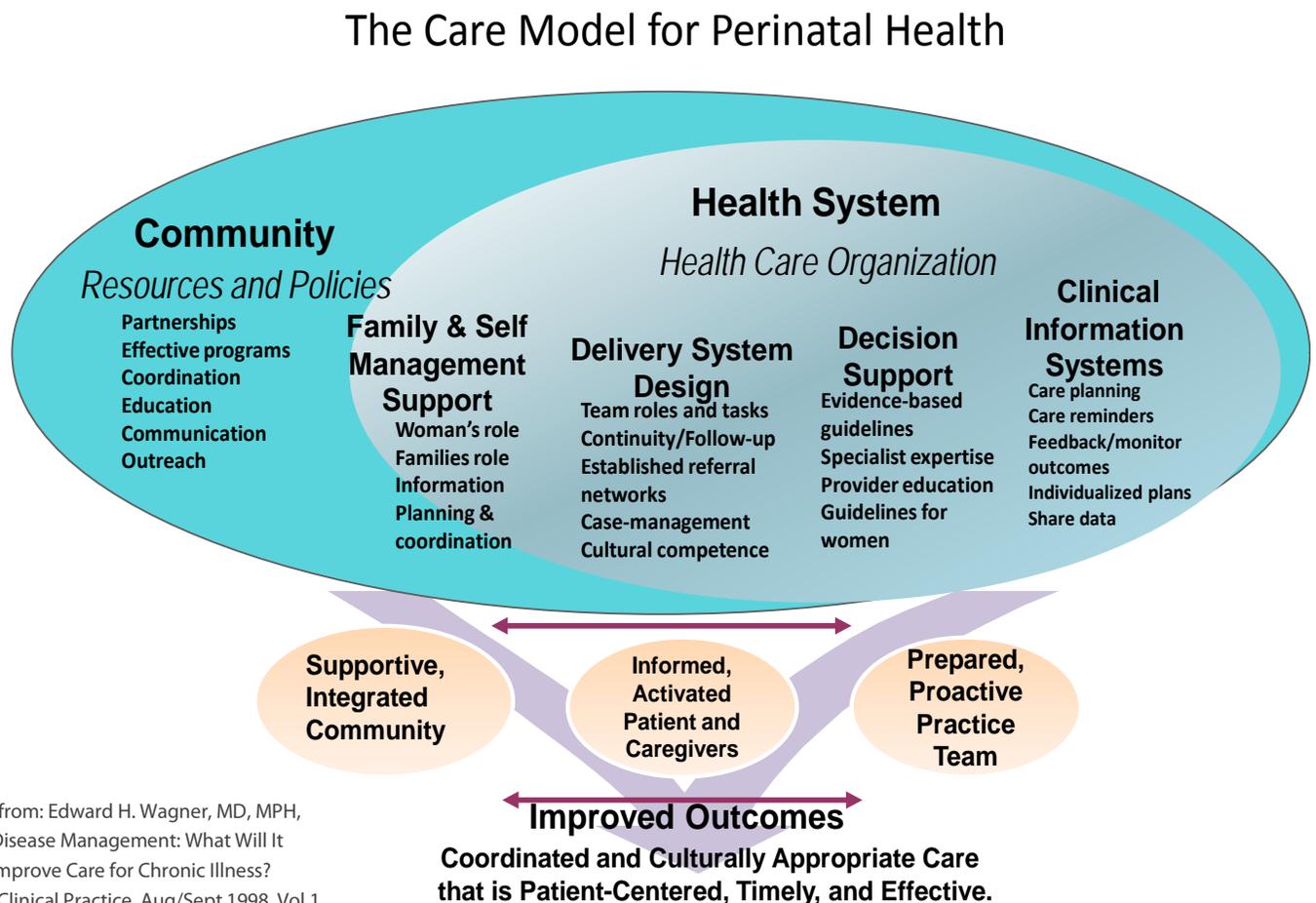| Chart	Screening test								Collected within 4 weeks of onset of care	Treated within 2 weeks of positive result	TOTAL # components
	Urine culture	Syphilis	HIV	Hepatitis B	Chlamydia	Gonorrhea	Hepatitis C	Bacterial vaginosis			
1											
2											
3											
4											
5											
Subtotal											
										GRAND TOTAL	

[*] Recommended Test- Urine culture for asymptomatic bacteriuria
[†] Recommended Test- NAAT =Nucleic Acid amplification tests; examples include: Ligase Chain Reaction (LCR)-LCx (Abbott); Polymerase Chain Reaction (PCR)- Amplicor (Roche); APTIMA (GenProbe); BD ProbeTec (Becton Dickinson)

Care Model for Perinatal Health[71]

The Care Model identifies the essential elements of a health care system that encourages high-quality care. The model includes evidence-based change concepts under each element seeking to foster productive interactions between informed clients, who take an active part in their care, and providers, who are prepared with resources and expertise. This model provides the framework for the system level improvements that will yield optimal pregnancy results.

Figure 19 Components of the Care Model for Perinatal Health

The Care Model for Perinatal Health

Community
Resources and Policies
Partnerships
Effective programs
Coordination
Education
Communication
Outreach

Health System
Health Care Organization

Family & Self Management Support
Woman's role
Families role
Information
Planning & coordination

Delivery System Design
Team roles and tasks
Continuity/Follow-up
Established referral networks
Case-management
Cultural competence

Decision Support
Evidence-based guidelines
Specialist expertise
Provider education
Guidelines for women

Clinical Information Systems
Care planning
Care reminders
Feedback/monitor outcomes
Individualized plans
Share data

Supportive, Integrated Community

Informed, Activated Patient and Caregivers

Prepared, Proactive Practice Team

Adapted from: Edward H. Wagner, MD, MPH, Chronic Disease Management: What Will It Take To Improve Care for Chronic Illness? Effective Clinical Practice, Aug/Sept 1998, Vol 1

Improved Outcomes
Coordinated and Culturally Appropriate Care that is Patient-Centered, Timely, and Effective.

The following section describes in more detail the general change concepts for each area of the Care Model, and provides more specific change ideas, that are possible areas of action for your clinic.

Urine and Reproductive Tract Infection Screening, Treatment, and Follow-up Change Concepts and Ideas

Care Focus	Change Concepts	Evidence Based Interventions & Testable Change Ideas
Decision Support	*Ensure clinical care that is consistent with scientific evidence and within the woman's informed preferences.*	**Protocols:** Review and update or establish protocols in clinical settings to adhere to evidence-based guidelines for the management of urine and reproductive tract infection during pregnancy • Protocols for patient screening, treatment, and follow-up • Protocols for partner contact, referral, treatment **Forms**: Develop/revise forms, clinical decision pathways, and care reminders to ensure adherence to recommended screening, timely treatment, follow-up and partner management
Delivery System Design	*Assure the delivery of effective, efficient, client-centered, and safe clinical care.*	**Provide Planned, Proactive Care:** • **Initial Screening:** Establish processes to screen for urine and reproductive tract infections at the onset of prenatal care according to recommended protocols and using tests with optimal sensitivity and specificity • **3rd Trimester Re-Screening:** Establish processes to identify women at risk for re-infection or infection and re-screen at the beginning of the third trimester according to recommended protocols • **Treatment & Follow-up** Timely Treatment: Establish processes to ensure that women with urine or reproductive tract infections receive treatment within 2 weeks of diagnosis Test of Cure: Establish processes to provide appropriate "test of cure" follow-up to ensure effective treatment Partner Treatment: Establish processes and protocols to provide treatment or referral of partners of women with STIs. This may include protocols to provide "Partner Directed Treatment" given to women diagnosed with lower reproductive tract STIs. **Use a Team Care Approach:** Roles and responsibilities: Define staff roles and responsibilities to ensure efficient screening, treatment, education, and follow-up, according to recommended guidelines. Communication: Establish procedures for reviewing and documenting screening test results and treatments that are timely and accurate.

Self Management Support	*Support women and their families in the management of their health and health care, before, during and after pregnancy*	• Use Self Management Support Strategies
		• Provide easily understandable health education about infections, treatments, follow-up, need for partner treatment, and re-infection prevention for STIs
		• Use verbal and written material in the woman's preferred language and literacy level
		• Document health information provided
		  o Use "teach back" method to assess understanding of teaching.
		  o Assess potential barriers to completing treatment and recommended follow-up

Care Focus	Change Concepts	Evidence Based Interventions & Testable Change Ideas

Clinical Information Systems	*Organize data to facilitate population-based care*	• **Create reminder systems** (electronic or paper based) for:
		   ◦ **Providers & staff** about "Test of Cure" visits, 3 month follow-up testing for GC, CT, 3rd trimester re-screening in pregnancy
		   ◦ **Patients** about scheduled visits
		
		• **Performance measures**: Select quality of care performance measures to monitor prenatal infection screening, treatment and follow-up.
		Report performance measures monthly review (electronic or chart audit).

Health System	*Create a culture, organization and mechanisms that promote safe, high quality care.*	• **Policies** are current and promote recommended screening, treatment and follow-up for urine and reproductive tract infections, and data tracking to document compliance with policies. • **Culturally sensitive**: Assure that health services and patient education materials are culturally, linguistically, and literacy-level appropriate. • **Customer service**: Assure that services are provided in a manner that is respectful of and responsive to cultural, language, and literacy needs of the patients and families served. • **Staff training**: Provide access to educational programs and updates for staff to sustain knowledge and skills about infections in pregnancy, cultural sensitivity, and health promotion.
Community	*Partner with community to meet the needs of pregnant women, their families and children.*	**Link to Community Resources** • Provide referrals to case management/home visitation programs for women with systemic or chronic infections such as syphilis, HIV, or hepatitis C • Refer a patient with syphilis who is allergic to penicillin to an Infectious Disease specialist for desensitization: http://www.cdc.gov/std/treatment/2006/penicillin-allergy.htm • Refer a patient with HIV to nearest perinatal treatment center: http://hivcommission-la.info/perinatal.pdf