

**MODULE 3: DIMENSIONS OF QUALITY****Time: 1.25 hours****Objectives:** Participants will be able to:

- ◆ Explain the concept of “dimensions of quality”
- ◆ Name and briefly describe several of the dimension categories
- ◆ Provide examples of quality from each dimension
- ◆ Explain the concept of doing “right things right”

**Materials:** Materials required for this module are:

- ◆ Participant Manual
- ◆ Flipchart, easel, and markers
- ◆ Overheads (OH) 3-1 thru 3-13
- ◆ Computer or overhead projector and projection screen

▶▶▶▶▶ **MODULE INTRODUCTION**

- OH 3-1
1. **DISPLAY** overhead 3-1.
  2. **REFER** learners to Module 3 in their manuals.
  3. **STATE** the following:  
In the last module we learned about some different ways that quality has been achieved in various healthcare settings. In this lesson, we’re going to explore some additional ways that quality can be defined, by discussing the different dimensions of quality.
- OH 3-2
4. **DISPLAY** overhead 3-2.
  5. **REVIEW** the objectives for the module.

▶▶▶▶▶ **THE DIMENSIONS OF QUALITY**

OH 3-3

6. **DISPLAY** overhead 3-3.
7. **STATE** the following:

There are nine “Dimensions of Quality” that have been defined. They are:

- Technical performance
- Effectiveness of care
- Efficiency of service delivery
- Safety
- Access to services
- Interpersonal relations
- Continuity of services
- Physical infrastructure and comfort
- Choice

8. **EXPLAIN** that each dimension will be discussed in further detail.

*Note: Explain that examples provided may fit more than one dimension of quality.*

OH 3-4

– **TECHNICAL PERFORMANCE**

The degree to which the tasks carried out by health workers and facilities meet the expectations of technical quality (comply with standards).

**Examples:**

*The accurate count of respirations of coughing child; thorough evaluation of the cause of a child’s fever; the use of the proper forms to keep track of expenditures; the proper disposal of syringes used for immunization.*

**Other Examples:**

*Note: Provide one or more examples of each dimension of quality during your review. Note that an example could fit more than one dimension.*

*Note: Write the additional examples that you want to share in class in the space provided.*

*Note: Encourage participants to record examples in the space provided in their manuals.*

OH 3-5

– **EFFECTIVENESS OF CARE**

The degree to which desired results (outcomes) of care are achieved

*Note: Some examples of non-client focused application of these dimensions are noted below.*

**Examples:**

*A woman with prolonged second stage labor receives a needed c-section; a pregnant woman who lives in an endemic malaria area receives presumptive treatment of malaria during pregnancy; an HIV patient receives antiretroviral medication; a child with persistent fever after initial anti-malaria treatment has a blood smear to confirm the continued presence of malaria parasites.*

*Note: An example of non-client focused effectiveness – storing blood at the correct temperature; doing the correct preventive maintenance on vehicles.*

**Other examples:**

OH 3-6

– **EFFICIENCY OF SERVICE DELIVERY**

The ratio of the outputs of services to the associated costs of producing those services.

**Examples:**

*The use of batch processing by the lab to test blood electrolytes; children receive immunizations during routine growth monitoring services eliminating the need for another trip to the center; the health center acquires more instruments so that they can run the sterilizer fewer times during the day; the supply officer uses FEFO methods (first expiry, first out) to avoid wasting drugs because they are past expiry date.*

**Other examples:**

OH 3-7

– **SAFETY**

The degree to which the risks of injury, infection or other harmful side effects are minimized.

**Examples:**

*The use of protective clothing by staff working with blood and body fluids; needles are disposed in a rigid container and either buried 4 feet deep or burned; patients with active TB are kept in a separate ward; cleaning staff have access to gum boots to help avoid slips and falls when washing the floors; fire and emergency exit routes are posted on the walls.*

**Other examples:**

OH 3-8

– **ACCESS TO SERVICES**

The degree to which healthcare services are unrestricted by geographic, economic, social, organizational or linguistic barriers

**Examples:**

*The hospital ward has ramps so people in wheelchairs can enter; a nurse or clinical officer is on duty at all times in a health center; the religious sponsored health center provides services to the entire population regardless of religious affiliation; outreach services are provided rather than requiring people to travel to the clinic.*

**Other examples:**

OH 3-8

– **INTERPERSONAL RELATIONS**

Trust, respect, confidentiality, courtesy, responsiveness, empathy, effective listening, and communication between providers and clients.

**Examples:**

*A health worker treats a patient with respect; a health worker discusses a patient with another health worker in a private (rather than in a public) area; a health worker is not judgmental when speaking with a patient about his or her situation.*

**Other examples:**

*Note: Non-client focused examples such as these characteristics of effective interpersonal relations being used between providers, or between providers and management – treating each other with respect, patiently waiting for explanations, giving constructive feedback in private rather than in hearing of patients.*

OH 3-9

– **CONTINUITY OF SERVICES**

Delivery of care by the same healthcare provider throughout the course of care (when appropriate) and appropriate and timely referral and communication between providers.

**Examples:**

*Good records are maintained for referral and counter-referral; good records are maintained for follow up care; medical records (e.g., growth, immunization) are given to the patient to present at future visits; a case synopsis is recorded on a request for an MRI.*

**Other examples:**

*Note: Non-clinical examples such as records of equipment and preventive maintenance available for review.*

OH 3-10 – **PHYSICAL INFRASTRUCTURE AND COMFORT**

The physical appearance of the facility, cleanliness, comfort, privacy and other aspects important to clients.

**Examples:** *A VIP (ventilated improved pit) latrine is available for patient use at rural health centers; boiled water is provide in covered flasks at the bedside for hospitalized patients; benches are provided for waiting in the outpatient area; the grass in the area surrounding the health centre is cut and paths are clean.*

**Other examples:**

OH 3-12 – **CHOICE**

When appropriate, client choice of provider, insurance plan or treatment.

**Examples:** *A woman in labor can choose to have her husband accompany her; a woman who does not want more children is given both short and long term options for contraceptives; a physician can choose from among effective antibiotics to treat a respiratory infection; a physician and his or her patient can choose from same day or an overnight hospital stay for an endoscopic procedure.*

**Other examples:**

**▶▶▶▶▶▶ LARGE GROUP DISCUSSION**9. **ASK** the following:

Think back to the quality success stories discussed in the previous section. Which quality dimensions were captured in the stories?

***Possible responses include:*****Success Story 1: Helping Patients Find Their Way:**

- Access to services
- Interpersonal relations

**Success Story 2: Decreasing the Duration of Phototherapy**

- Technical performance
- Effectiveness of care
- Efficiency of service delivery

**Success Story 3: Improving Malaria Treatment Outcomes**

- Technical performance
- Effectiveness of care
- Interpersonal relations

**Success Story 4: Increasing Patients' Attendance at Postpartum Appointments**

- Effectiveness of care
- Access to services

▶▶▶▶▶ **SMALL GROUP DISCUSSION**

10. **ARRANGE** class into small groups of 3 to 4 members each. Have each group develop an additional 2 to 3 examples of how each dimension of quality can be realized in their specific healthcare setting.

*Note: Allow the groups approximately 20 – 30 minutes to complete this exercise.*

11. **FACILITATE** a discussion about the ideas generated by each group in a large group setting, by asking each group to report out their ideas.

*Note: Write participants' responses on a flipchart to both record and affirm their ideas.*

*Note: Don't discourage discussion. Participants are developing both a personal and shared concept of quality.*

▶▶▶▶▶ **RIGHT THINGS RIGHT / PRESENTATION**

12. **TRANSITION** to "Right Things Right" by stating the following.

I'd like to add one more idea to our discussion of the dimensions of quality.

OH 3-13 13. **DISPLAY** overhead 3-13.

14. **EXPLAIN** the following:

- To truly achieve quality improvement, it means that people must not only be doing the right thing, but doing it in the right way.
- The Right Things Right grid in the participant's manual graphically represents how it's possible to do the right thing the wrong way, or the wrong thing the right way.
- To do the right things means to use effective interventions that meet clients' needs. This is **what** you do.
- To do things right means that work



processes allow us to work correctly, efficiently, and on time. This is **how** you do it.

15. **REVIEW** the different examples provided on the overhead and in their handbooks within each quadrant of the grid.

▶▶▶▶▶ **SMALL OR LARGE GROUP DISCUSSION**

16. **ARRANGE** class into previous groups of 3-4 people. Ask them to use two examples generated in the previous exercise to develop illustrations for each quadrant of the quality grid. Then, have participants report out in a large group setting.

*Note: This could also be a large group discussion where one example from each group is used to create an example of Right Things Right.*

▶▶▶▶▶ **REVIEW**

17. **ASK** the following:

This module focused on the dimensions of quality and the quality grid for the purpose of expanding our existing understanding of the concept of quality. With this in mind, what is one new notion that you have about quality that you didn't have before class began today?

*Note: Allow as much time as needed to allow participants to express their thoughts and begin to create a shared understanding of what is meant by quality and quality improvement.*

**MODULE 4: FOUR STEPS OF QUALITY IMPROVEMENT**

*Time: 1.5 hours*

**Objectives:** Participants will be able to:

- ◆ Identify the four steps of quality improvement
- ◆ Explain (at a high level) what is involved in each step
- ◆ State questions that can be asked to help develop a problem statement
- ◆ Discuss the benefits of creating a problem statement
- ◆ Discuss Shewhart’s PDSA Cycle
- ◆ Explain the relationship between Shewhart’s PDSA Cycle and Step 4 of quality improvement
- ◆ Identify what activities occurred during the different QI steps of the QI Success Stories (Module 2)

**Materials:** Materials required for this module are:

- ◆ Participant Manual
- ◆ Flipchart, easel, and markers
- ◆ Overheads (OH) 4-1 thru 4-11
- ◆ Computer or overhead projector and projection screen

▶▶▶▶▶▶ **MODULE INTRODUCTION**

OH 4-1

1. **DISPLAY** overhead 4-1.
2. **REFER** participants to Module 4 in their manuals.
3. **STATE** the following:

The focus of the workshop thus far has been to provide you with examples of what quality has meant to other healthcare organizations and encourage you to think about what it means (specifically) to yours.

The focus of this module (and the next few modules) is to provide you with an orientation to the processes and tools that

are used in quality improvement efforts.

In this module we're going to focus on the four steps of quality improvement.

- OH 4-2  
OH 4-3
4. **DISPLAY** overhead 4-2 and 4-3.
  5. **REVIEW** the objectives for the module.

▶▶▶▶▶▶ **4 STEPS OF QI / PRESENTATION**

- OH 4-4
6. **DISPLAY** overhead 4-4.
  7. **INTRODUCE** the 4 Steps of Quality Improvement:
    1. **Identify:** Determine what needs to be improved.
    2. **Analyze:** Understand the problem.
    3. **Develop:** Hypothesize about what changes will improve the problem.
    4. **Test / Implement:** Test the hypothesized solution to see if it yields improvement. Based on these results, decide whether to abandon, modify or implement the solution.

*Note: Elaborate on your discussion of each step using examples from your experience.*

*Note: Ensure participants understand the meaning of the word "hypothesize."*

▶▶▶▶▶▶ **ANALOGIES TO PATIENT TREATMENT**

- OH 4-5
8. **DISPLAY** overhead 4-5.
  9. **EXPLAIN** that an analogy can be made between the 4 steps of process improvement and the steps of patient treatment known by physicians, nurses, and other service providers.

- **Patient Treatment Steps**
  - Assess
  - Diagnose
  - Intervene
  - Evaluate

*Note: The purpose of this discussion is to make the 4 steps of PI more concrete by drawing similarities to a process model with which participants are familiar.*

10. **FACILITATE** a discussion among participants regarding what each step entails.

▶▶▶▶▶ **STEP 1 - IDENTIFY**

11. **EXPLAIN** the following: The first step in quality improvement begins when an opportunity for improvement is recognized.

12. **ASK** the following: Thinking back to the four steps in patient treatment, what are some of the ways that a patient treatment need becomes known?

*Possible responses include: Patient doesn't feel well, routine check-up.*

13. **EXPLAIN** the following: Similar to the way that the need for patient treatment can be recognized in various ways, the need for process improvement can be recognized in a variety of ways.

- A patient might express dissatisfaction
- An adverse event might draw attention
- A trend might be noticed through statistical monitoring (similar to the way elevated blood pressure might signal a problem)

OH 4-6

14. **DISPLAY** overhead 4-6

15. **REVIEW** the questions that can be helpful in the identification of a problem.

- What is the problem?

- How do you know if it's a problem?
- How frequently does it occur, or how long has it existed?
- What are the effects of this problem?
- How will you know when it is resolved?

*Note: Ensure participants see the similarity between the types of questions that are asked in patient care and the types of questions that are asked in quality improvement.*

▶▶▶▶▶▶ **PROBLEM STATEMENTS**

16. **STATE** the following:

It is often helpful to create a problem statement to help gain an understanding of the problem. A problem statement is a concise statement of the problem that answers the five questions we just reviewed

17. **ASK** the rhetorical question: In your experience as health workers, have you ever seen physicians, nurses, or other health workers have differing opinions regarding how a problem should be solved?

18. **EXPLAIN** that this is due to the fact that everyone approaches a problem with their own set of past experiences, values, and perspectives. As a result, when more than one person is involved in solving the problem, it's important to begin with a shared understanding of just what the problem is.

OH 4-7 19. **DISPLAY** overhead 4-7

20. **STATE** the following: A problem statement is a concise statement about a problem that accomplishes four things:

- Provides insight into the process that needs to be improved
- Identifies the process boundaries

- Identifies the general concern that the quality improvement effort should address
- Includes a general statement as to why it is a priority

21. **ASK** the following:

Why might it be important not to fix blame or identify a solution in a problem statement?

*Possible answers: Fixing blame might alienate those people who will be needed to help solve the problem. Early identification of a solution without proper analysis might result in poorly expended resources.*

22. **REFER** participants to the examples of Problem Statements in Module 4 of their manuals.
23. **REVIEW** the *before* and *after* statements and facilitate a discussion of what changes were made.
24. **FACILITATE** a discussion for the purpose of identifying the step 1 questions that were answered in each of the revised problem statements.

▶▶▶▶▶ **PROBLEM IDENTIFICATION EXERCISE**

25. **REFER** participants to the problem identification exercise in their manuals.
26. **ARRANGE** participants into groups of 3-4 people or allow them to work individually.
27. **ASK** participants to evaluate each of the statements provided to determine whether or not more information is needed to begin solving the problem.

*Note: Allow groups about 10 minutes for group or individual seatwork.*

If more information is required, participants should determine which questions they would ask to learn more.

*Note: It might be helpful to redisplay overhead 4-6 at this time. This overhead lists the different questions that should be answered during step one of process improvement.*

▶▶▶▶▶▶ **STEP 2 - ANALYZE**

OH 4-8  
OH 4-9

28. **DISPLAY** overheads 4-8 and 4-9.

29. **EXPLAIN** the following: The goal of the second step of the QI process is to better understand the process that needs to be improved or the system in which the improvement will be installed. Review the objectives of step 2 listed in the participant manual on page 4.

30. **ASK** the following: Referring back to the steps in patient treatment, what are some of the strategies physicians use to diagnose a patient?

*Possible answers include: they run tests, observe, ask questions, assess medical history, etc.*

31. **EXPLAIN** that in similar fashion, this step of the quality improvement processes uses both existing data and new data that is collected. Similar to the way the medical profession uses its own set of tools to collect data, process improvement has its own tools to collect data. The various tools used in quality improvement efforts will be introduced in the next module.

▶▶▶▶▶ **STEP 3 - DEVELOP**

OH 4-10

32. **DISPLAY** overhead 4-10.
33. **REVIEW** the paragraph that describes step 3 (develop) of quality improvement.
34. **ASK** a volunteer to provide an example of a hypothesis. The example can be related to medical diagnoses. Emphasize that a hypothesis is an educated guess that has not yet been tested.

▶▶▶▶▶ **STEP 4 – TEST / IMPLEMENT**

35. **STATE** the following: The final stage of quality improvement involves testing and implementation of hypothesized solutions. The manner in which you go about this will be strongly influenced by the size and complexity of the problem. You will want to go about this in a systematic fashion to verify that the hypothesized solution in fact solves the problem
36. **EXPLAIN** the following: While the main focus of this step is to ensure that the hypothesized solution solves the problem, you'll also want to look for unexpected outcomes.
  - Example, most medications have side effects, e.g., aspirin causes stomach upset. Therefore it's important to be aware that something unexpected might happen.



▶▶▶▶▶ **SHEWHART’S CYCLE / PDSA**

OH 4-11 37. **DISPLAY** overhead 4-11.

38. **EXPLAIN** the following: Step 4 of the quality improvement process involves the use of 4 iterative sub-steps. These sub-steps are known as Shewhart’s Cycle for Learning and Improvement. The Cycle is also known as the PDSA Cycle, which stands for Plan, Do, Study, Act.

The main idea of the PDSA cycle is that you don’t implement a hypothesized solution to the fullest extent until you test it and make sure you attain the desired results.

39. **REVIEW** the various “*Activities Associated with the PDSA Cycle*” found toward the end of Module 4.

40. **EMPHASIZE** that Shewharts Cycle is analogous to the scientific method.

▶▶▶▶▶ **QI SUCCESS STORIES / DISCUSSION**

41. **REFOCUS** the participants back the Quality Improvement Success Stories reviewed in Module 2.

*Note: Allow groups about 10 – 15 minutes to review cases for steps.*

42. **FACILITATE** a discussion among participants that is intended to explore the events and activities that occurred during the various QI efforts and place them within the framework of the four steps.

*Note: Use the reference “A Modern Paradigm for Improving Healthcare Quality” to identify the various steps of quality improvement for each case. Each step and the activities associated with each are clearly identified in the monograph.*

43. **EMPHASIZE** that in some cases the four steps happened quickly and involved only a few people, while in larger improvement efforts each step took longer and involved more people.

**▶▶▶▶▶▶ MODULE REVIEW**

44. **ASK** the following:

The focus of this module has been to review with you the four steps of quality improvement, the PDSA Cycle, and the development of problem statements. Who will volunteer to answer the following review questions?

- What are the four steps of quality improvement and what (at a high level) occurs during each step?
- What does PDSA stand for?
- What does the PDSA Cycle have to do with quality improvement?
- What is a problem statement?
- What is the value of a problem statement to a quality improvement initiative?

*Note: Encourage as many participants to participate in the review as possible.*

**MODULE 5: INTRODUCTION TO QUALITY IMPROVEMENT CONCEPTS**

*Time: 1.25 hours*

**Objectives:** Participants will be able to:

- ◆ Name the four basic approaches to quality improvement
- ◆ Explain that different situations require the use of different approaches
- ◆ Name several of the quality improvement tools that are used in quality improvement initiatives
- ◆ Determine the appropriateness of different tools for different steps of a quality improvement initiative
- ◆ Name the four principles of quality assurance
- ◆ Identify examples of the four principles of quality assurance from the QI Success Stories (Module 2)

**Materials:** Materials required for this module are:

- ◆ Participant Manual
- ◆ Quality Improvement Tools appendix (pp 51-76 of the Monograph)
- ◆ Flipchart, easel, and markers
- ◆ Overheads (OH) 5-1 thru 5-13
- ◆ Computer or overhead projector and projection screen

▶▶▶▶▶ **MODULE INTRODUCTION**

OH 5-1

1. **DISPLAY** overhead 5-1.
2. **REFER** participants to Module 5 in their manuals.
3. **STATE** the following:

The last module introduced the idea that like patient treatment, quality improvement involves the use of a problem solving methodology of four basic steps.

The purpose of this module is to introduce you to some other important quality

improvement concepts that we'll be discussing and building upon during the workshop. The three main ideas that we'll be introducing in this module include:

- The use of quality improvement tools
- The four approaches to quality improvement, and
- The four principles of quality improvement

OH 5-2  
OH 5-3

4. **DISPLAY** overheads 5-2, 5-3.
5. **REVIEW** the objectives for the module.

▶▶▶▶▶▶ **FOUR APPROACHES TO QI**

OH 5-4

1. **DISPLAY** overhead 5-4.

**STATE** the following:

One of the lessons learned from the quality improvement success stories is that one or two people can address some problems, while others require the cooperation and collaboration of a larger team.

Through our research we've identified four basic approaches to quality improvement. They are:

- Individual problem solving
- Rapid team problem solving
- Systematic team problem solving
- Process improvement

▶▶▶▶▶▶ **INDIVIDUAL PROBLEM SOLVING**

OH 5-5

2. **DISPLAY** overhead 5-5.
3. **EXPLAIN** that individual problem solving is

the approach used when the problem is dependent on only one person.

4. **REVIEW** the details of individual problem solving provided on the overhead.

▶▶▶▶▶▶ **RAPID TEAM PROBLEM SOLVING**

OH 5-6

5. **DISPLAY** overhead 5-6.
6. **EXPLAIN** that rapid team problem solving is used when the problem or process is dependent on more than one person, when the team needs quick results, and has a lot of intuitive ideas regarding how to solve the problem.
7. **REVIEW** the details of rapid team problem solving provided on the overhead.

▶▶▶▶▶▶ **SYSTEMATIC TEAM PROBLEM SOLVING**

OH 5-7

8. **DISPLAY** overhead 5-7.
9. **EXPLAIN** that systematic team problem solving is used when the problem is complex or recurring, and requires analysis.
10. **REVIEW** the details of systematic team problem solving provided on the overhead.

▶▶▶▶▶▶ **PROCESS IMPROVEMENT**

OH 5-8

11. **DISPLAY** overhead 5-8.
12. **EXPLAIN** that process improvement is used when a key process or system requires ongoing monitoring or continual improvement. It occurs in organizations that allocate permanent resources to quality improvement.

13. **REVIEW** the details of process improvement provided on the overhead.

▶▶▶▶▶ **MATRIX OF QI APPROACHES BY QI STEP**

- Manual
6. **REFER** participants to the Matrix of Quality Improvement approaches by QI Step located in their manuals in Module 5.
  7. **REVIEW** the matrix in detail. Examine how the steps differ based upon the quality improvement approach that is taken.

▶▶▶▶▶ **FOUR APPROACHES OF QI / EXERCISE**

- Manual
8. **REFER** participants to the four approaches of quality improvement exercise in their manuals.
  9. **ARRANGE** participants into teams of 3-4. Based upon what is known about the problem, have teams make a preliminary determination as to which QI approach might be most appropriate.
  10. **FACILITATE** a discussion by having each team report on one problem at a time (cycle through the teams for each problem).
  11. **INITIATE** further discussion by playing devil's advocate. For example, it might be appropriate to suggest that if the oxygen tank is empty, individual problem solving might be appropriate. However, if the problem continues to occur and the reason is unknown, a team-based approach might be required.

▶▶▶▶▶ **QUALITY IMPROVEMENT TOOLS**

12. **REFER** participants to the Matrix of Quality Improvement Tools by QI Step available in Module 5 of their manuals.
13. **EXPLAIN** that similar to the way that some tools are more appropriate to use at various stages of patient treatment, some tools are more akin to different steps of quality improvement than another.
14. **ENCOURAGE** learners to spend a few minutes becoming familiar with the tools segment of their manuals.
15. **EMPHASIZE** that the tools will be reviewed in greater detail throughout the course and participants will have the opportunity to use many of them.

▶▶▶▶▶ **FOUR PRINCIPLES OF QI**

OH 5-9      16. **DISPLAY** overhead 5-9.

17. **STATE** the following:

The final concept I'd like to introduce is the Four Principles of Quality Assurance. I'd like to emphasize that these four principles are not limited to quality improvement, rather they are also relevant to all aspects of quality assurance, not just quality improvement.

18. **REVIEW** the details of the four principles of quality assurance on the overhead

- Client focus
- Understanding work as processes and systems
- Testing changes and emphasizing the use of data
- Teamwork

- OH 5-10 19. **DISPLAY** overheads 5-10 through 5-13.  
 OH 5-11  
 OH 5-12 20. **EXPLAIN** each of the four principles as you  
 OH 5-13 display the related overhead.
21. **ASK** participants to reflect back to the Quality Improvement Success Stories to identify examples of the four principles of quality assurance in the improvement initiatives. Do this as you review each principle.

▶▶▶▶▶ **REVIEW MODULES 1 THRU 5**

22. **STATE** the following:

The five modules that we've completed thus far provide a foundation in quality improvement. This is a good time to reflect back upon what's been learned thus far.

- Flipchart 23. In a large group setting, **ASK** each participant to share one concept they've learned thus far in the class. Do not allow participants to use a concept already shared by another classmate.
- OR**, you can ask participants to volunteer answers to the following questions.
- Name the nine dimensions of quality improvement
  - Name the four principles of quality assurance
  - Name the four approaches to quality improvement
  - Name several tools used in quality improvement initiatives
  - Name the four steps of quality improvement

*Note: Write concepts shared by learners during the review on a flipchart.*