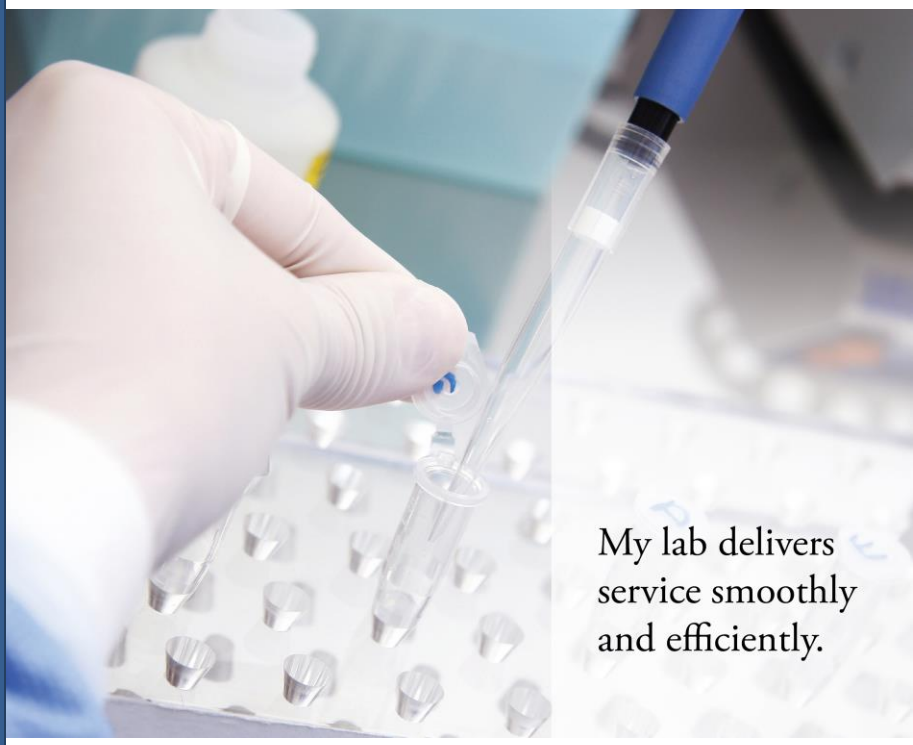
2015 Version

MODULE 1

Productivity Management



SLMTA Trainer's Guide

Overview

MODULE 1. PRODUCTIVITY MANAGEMENT

Performance Outcome

With satisfactory participation in the training and successful implementation of laboratory improvement projects, a participant's laboratory should achieve the following outcome:

- Efficient workflow
- Evenly distributed workload
- Uninterrupted service delivery

Checklist Items Supported by this Module

This module supports the requirements for the following items from the SLIPTA Checklist:

1.2, 1.3, 1.5, 1.6, 1.7, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 4.3, 4.4, 5.1, 5.8, 5.15, 7.9, 8.1, 8.2, 8.7, 8.13, 9.3, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.6, 12.8, 12.17, 12.21

Learning Objectives (Management Tasks)

By the end of this module, participants should be able to perform the following management tasks:

1. Organize the laboratory and coordinate work space to allow for smooth, efficient service operations
2. Design workflow for optimal productivity
3. Prioritize and assign work according to personnel skill level, workloads, and completion timeframe
4. Assess personnel competency against standards and determine corrective action and training needs
5. Conduct weekly staff meetings to coordinate activities, review lab operations, reward success, celebrate accomplishments, and resolve issues
6. Meet with staff individually to communicate expectations, provide feedback, coaching, or on-the-job training to ensure competency and productivity
7. Provide/coordinate new-hire orientation and training to staff
8. Maintain and update personnel records (training, certification, competency assessment)
9. Create a work plan and budget based on personnel, test, facility, and equipment needs
10. Create/review/forward reports on lab operations to upper management
11. Implement measures to motivate staff to improve quality of work and productivity (e.g., training, job rotation, employee of the month, thank-you letter, etc.)
12. Develop and implement lab improvement plans based on best practices and feedback from staff, patients, customers, quality indicators, and external assessment
13. Communicate to upper management regarding personnel, facility, and operational needs

Overview

What's in this Module?

ACTIVITY TITLE	PURPOSE	DURATION
Process + Structure = Outcome	Optimal laboratory design involves two factors: physical layout of the allotted space and workflow path designed around the steps of the process to be performed in that space. In this activity, participants design a laboratory layout with regard to the workflow using the provided floor plan.	2 hrs
Improving a Problem Floor Plan	Optimal laboratory design requires that the physical work environment is safe and appropriate for testing. In this activity, participants will identify hazardous elements in the work environment of the provided laboratory floor plan. Using the floor plan, participants will redesign the layout so that the problems are addressed.	45 min
Mapping Out the Floor Plan of Your Laboratory	A good laboratory floor plan eliminates or significantly reduces waste by removing excess movement, time and effort. To effectively redesign a laboratory, the current floor plan and workflow path must be evaluated. In this activity, participants learn how to create a floor plan of their own laboratories. A follow-up activity will allow them to improve the workflow by redesigning the floor plan of their laboratories.	1 hr 25 min
Redesigning the Floor Plan of Your Laboratory	A productive laboratory can be redesigned if opportunities, possibilities, and potential problems are recognized. To effectively redesign a laboratory, a manager must carefully consider the interrelationships between space, workflow, and equipment. In this activity participants redesign their laboratory layout to improve the workflow by repositioning movable items in their floor plan.	45 min
Making a Cup of Tea	Simple, daily tasks can easily become laborious when the needed supplies and materials are not readily available. This activity demonstrates that organization is the key to performing any daily activity, including making a cup of tea.	20 min
Whisper Down the Alley	This activity demonstrates the need for written step-by-step procedures so that staff members perform tasks in a standardized manner. It highlights the difference between how verbal directions can easily be mis-communicated and how written instructions consistently convey the information accurately.	20 min

Overview

ACTIVITY TITLE	PURPOSE	DURATION
What Are the Benefits of a Standardized Process?	Well-defined processes assure the work is performed the same way each time. The benefits of standardizing the process are: 1) it makes errors more difficult to commit; 2) it makes errors more visible if committed; and 3) it absorbs errors that are committed. In this activity, a demonstration is used to illustrate these benefits and how they relate to the quality of patient care.	35 min
How Do You Assign Personnel to Tasks?	A duty roster helps a manager coordinate tasks among laboratory staff to better serve customers. It assigns personnel to workstations with well-defined tasks and responsibilities. In this activity, participants learn to create a duty roster based on a testing menu, workload, personnel available, and operational hours.	1 hr 25 min
Creating a Management Calendar	A calendar is an essential management tool for planning and organizing lab tasks. In this activity, participants learn to create and use a calendar to schedule, coordinate, balance, and prioritize lab activities. This activity can be facilitated in its entirety during module 1 (1 hr 25 min). A second option explores the organizational skill more thoroughly by incorporating only those tasks applicable to the module with a facilitation time of 15 minutes per module. The total activity duration for the second option is 3 hours and 15 minutes.	1 hr 25 min
Competency Assessment	Competency assessment is important in assuring the quality of the laboratory output. This activity provides suggested policy and guidelines for implementing competency assessment for personnel performing diagnostic clinical testing in the laboratory.	40 min
Planning and Conducting a Staff Meeting	Effective staff meetings yield a cohesive and informed staff working together toward shared institutional goals. As the curriculum unfolds, this activity encourages participants to complete their own list of appropriate items for a staff meeting agenda.	40 min
Creating a Personnel File	Managing human resources requires documentation and organization of employee information, education, work history, training, and performance data. This fast-paced activity allows participants to give a rationale for including items in a personnel file and to indicate which items are inappropriate for personnel files.	55 min
	TOTAL ACTIVITY TIME:	**11 hrs 15 min**

Overview

TABLE OF CONTENTS

ACTIVITY Process + Structure = Outcome Module 1

PURPOSE:

Optimal laboratory design involves two factors:

- physical layout of the allotted space
- workflow path designed around the steps of the process to be performed in that space.

In this activity, participants design a laboratory layout with regard to the workflow using the provided floor plan.

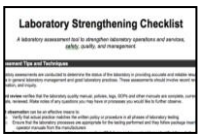
STOP DO NOT conduct this activity until you have done Process Mapping activity!

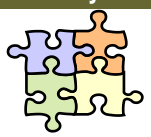
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.8 to 1.13
- ❑ Flipchart and markers
- ❑ Tape, scissors, glue sticks
- ❑ Pencils with erasers

RESOURCES FOR PARTICIPANT:

- ❑ Handout 1:Specimen Flow (101)
- ❑ Handout 2: Sample Floor Plan (102)
- ❑ Handout 3: Diagram with Equipment and Inserted Steps (103)
- ❑ Handout 4: Observed Steps (104)
- ❑ Handout 5: Spaghetti Diagram (105)
- ❑ Worksheet 1: Floor Plan (106)
- ❑ Worksheet 2: Equipment Cut-Outs (107)
- ❑ Worksheet 3: Diagram with Equipment (108)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.1 Organize the laboratory and coordinate work space to allow for smooth, efficient service operations 1.2 Design workflow for optimal productivity 1.12 Develop and implement lab improvement plans based on best practices and feedback from staff, patients, customers, quality indicators, and external assessment 1.13 Communicate to upper management regarding personnel, facility, and operational needs 2.4 Ensure appropriate physical work environment for testing
Checklist Items 	1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel?(Laboratory equipment; Accommodation and Environmental Conditions) 5.8 Obsolete Equipment Procedures Is non-functioning equipment appropriately labelled and removed from the laboratory or path of workflow following the equipment management policies and procedures? 11.3 Communication System on Laboratory Operations Does the laboratory communicate with upper management regularly regarding needs for continual improvement? 12.1 Is there documented evidence that the laboratory has evaluated the adequacy of the size and overall layout of the laboratory and organized the space so that workstations are positioned for optimal workflow? 12.2 Are the patient care and testing areas of the laboratory distinctly separate from one another? 12.3 Is each individual workstation maintained free of clutter and set up for efficient operation? 12.4 Is the physical work environment appropriate for testing?

This activity is related to the following activities:	
	Cross-Cutting: Process Mapping

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Introduce 'Process + Structure = Outcome'	5 min	Slide 1.8 Handout 1	
2	Introduce laboratory floor plan diagram	5 min		
3	Discuss layout	20 min	Slides 1.9 to 1.11 Handout 1 Handout 2 Handout 3	
4	Introduce the activity	10 min	Slide 1.12 Worksheet 1 Worksheet 2	
5	Conduct the activity (layout design)	30 min	Worksheet 1 Worksheet 2 Scissors Glue Stick Pencils	
6	Debrief the layout portion of the activity	10 min		
7	Introduce and demonstrate the spaghetti diagram	15 min	Slide 1.13 Handout 4 Worksheet 3 Handout 5 Pencils	
8	Conduct the activity (spaghetti diagram)	5 min	Handout 4 Worksheet 1 Pencils	
9	Debrief the activity	15 min	Worksheet 1	
10	Conclude the activity	5 min		
	TOTAL TIME:	**120 min**		

PROCESS

Preparation

- Facilitate the *Process Mapping* activity prior to this activity. Refer to the process map taped to the wall throughout this activity.
- Ensure the worksheets are printed using a single-sided format. Any information printed on the flip side of a double-sided print format will be unusable.
- Create the following test menu table on a flipchart page:

Test Menu	Equipment Needed
Automated FBC	
Differential	
Malarial Smear	
Automated CD4	
Automated Chemistry Profiles (hepatic, metabolic, and renal)	
Urinalysis with Microscopic	
Urine Pregnancy	
RPR	
Rapid HIV	
AFB Direct Smear	
Additional Tests referred to Regional Hospital	

- Recreate an abbreviated version of Worksheet 3: Diagram with Equipment onto a flipchart page. Draw only enough detail to allow you to sufficiently trace the technologist's movement (Handout 4: Observed Steps) in a step-wise fashion with the participants (Step 7: Introduce and demonstrate the spaghetti diagram). If available, a photocopy enlargement of the floor plan may be used as an alternative.
- Provide each group with a pair of scissors and 1 glue stick. Each participant should have access to a pencil with an eraser while tracing the technologist's movement.

Step 1. Introduce 'Process + Structure = Outcome.' 5 min

- Project Slide 1.8 to introduce the concept, 'Process + Structure = Outcome'.
- Explain this equation.
  - physical space and layout (structure)
  - workflow path (process)
  - a layout that better supports work flow increases productivity and efficiency (desirable outcome)
  - a layout that inhibits or disrupts work flow decreases productivity (undesirable outcome)
- Provide additional examples of a positive outcome such as increased staff morale and customer satisfaction, reduced turn-around times, and reduced number of errors. Indicate there are two tools managers use to assist them with achieving the more desirable outcome: mapping the process and

diagramming the floor plan.

- Explain that the first tool has been introduced during the *Process Mapping* activity when the specimen flow through the laboratory was mapped out into a process table. Refer participants to Handout 1: Specimen Flow. Indicate the steps 2-14 of the table refer to the process portion of the equation. They are the steps to be considered when designing the laboratory space and layout.
- Explain that a floor plan diagram (schematic) relates to the structure portion of the equation.

Step 2. Introduce the laboratory floor plan diagram 5 min

- Explain that a floor plan is a drawing to show the layout of space from the perspective of looking down upon it, a bird's eye view of the physical space.
- Demonstrate this concept by drawing the floor plan of the training room onto a flipchart page; include any doors, windows and desks in the diagram.

Step 3. Discuss layout 20 min

- Project Slide 1.9 while referencing Handout 2: Sample Floor Plan. Point out the countertops, doors, sinks, and bathrooms indicated in the floor plan diagram.
- Display the test menu table previously prepared on the flipchart. Refer to the process table (Handout 1: Specimen Flow) and explain that this laboratory layout must accommodate steps 2-14 for each test in its testing menu.
- Ask participants what equipment is required to support this menu. Write their responses under the 'Equipment Needed' column. The completed table should appear as follows:

Test Menu	Equipment Needed
Automated FBC	FBC analyzer, blood mixer, refrigerator
Differential	Microscope, differential counter
Malarial Smear	microscope
Automated CD4	CD4 analyzer
Automated Chemistry Profiles (hepatic, metabolic, and renal)	Chemistry analyzer, centrifuge, refrigerator
Urinalysis with Microscopic	Centrifuge, microscope
Urine Pregnancy	
RPR	Centrifuge, rotator
Rapid HIV	
AFB Direct Smear	Stain rack, microscope
Additional Tests Referred to Regional Hospital	centrifuge

- Indicate the space illustrated in the floor plan must accommodate the needed equipment. The layout of both the equipment and process steps must be designed with regard to the workflow path. Discuss the work areas that need to be designated in the floor plan required for each phase of the total testing

process.

- Project Slides 1.10 to 1.11 while referencing Handout 3: Diagram with Equipment and Inserted Steps. Refer to the process table (Handout 1: Specimen Flow). Link the inserted step numbers to the specific process steps of the table. Emphasize the following points:
  - The phlebotomy area (pre-analytical process table steps 2-8) is placed near the entrance door.
  - The phlebotomy area is separated from the testing area for safety and confidentiality.
  - The staining and urinalysis areas are located near a sink.
  - Each test is assigned to a specific work area (analytical process steps 9-11).
  - Process step 12, test results recorded, is performed at each assigned area. Therefore, the appropriate log book is available at each area.
  - Ancillary equipment is placed to support testing.
  - A send-out and cross-check area is designated in the laboratory. Discuss how visual cues can assist with efficiency. For example, if reports are in the in-box at the cross-checking station, then visually staff members are aware that reports need to be cross-checked.
  - The AFB smear prep and staining area is not located in front of an open window. Facilitate a discussion about poor, better, best practices regarding biosafety. Refer to the *Connections and Applications* portion of this activity.
  - The released test report area is located near the laboratory entrance.

Step 4. Introduce the activity 10 min

- Project Slide 1.12 to provide an overview of the activity.
- Divide the class into groups of 3-5 participants. Each group will collaborate and design one laboratory layout.
- Refer participants to Worksheet 1: Floor Plan and Worksheet 2: Equipment Cut-Outs.
- Explain that for this laboratory floor plan, they must design the laboratory layout. Review the directions indicated on Worksheet 2 with the class. Indicate they can move the objects around to design the layout that best supports the workflow. Emphasize that they should not glue the objects onto the floor plan until the group has agreed upon the proposed layout.
- Indicate they have 30 minutes to design their laboratory.

Step 5. Conduct the activity (layout design) 30 min

- Provide assistance and coaching with the activity.

Step 6. Debrief the layout portion of the activity 10 min

- Ask participants what challenge the broken freezer presented with their design. Emphasize that broken or not-in use equipment and supplies should be removed prior to redesigning. Discuss ways to facilitate this removal.
- Discuss any other challenges and issues the participants encountered as they designed the layout. Ask how they considered the design of the layout

(structure) with regard to the workflow path (process).

Step 7. Introduce and demonstrate the spaghetti diagram — 15 min

- Explain that we will explore how well the designed layout supports the workflow path using a spaghetti diagram.
- Refer participants to Handout 4: Observed Steps and Worksheet 3: Diagram with Equipment. Explain that we can trace the technologist's movement in the floor plan. Tracing movement (employee or specimen) is known as a spaghetti diagram. Explain that a spaghetti diagram can highlight where waste and inefficiency occurs from poor process design, layout design, or both.
- Indicate that an order was placed (process step 1) for a chemistry profile, FBC, malarial smear, and urinalysis with microscopic. The technologist was observed and the movement was recorded from collection through releasing the results.
- Begin tracing the first 9 movements (Handout 4) onto your recreated floor plan or photocopy enlargement in a step-wise fashion with the class. Instruct the participants to trace the movement using Worksheet 3. Periodically, ask participants which process step (Handout 1: Specimen Flow) is referenced based upon the observed movement.
- Instruct the class to individually trace the remaining movement into Worksheet 3.
- Project Slide 1.13 and provide time for participants to compare their tracing with Handout 5: Spaghetti Diagram. Points to highlight or illustrate:
  - The technologist efficiently utilized drying and centrifugation time during the analytical phase of testing.
  - Emphasize how tracing can highlight wasted movement and time. Illustrate this fact by removing the 3 centrifuges from the work area and redrawing them in the phlebotomy area on the flipchart page containing the recreated floor plan. Using a different colored marker, trace the altered pathway onto your recreated floor plan.
  - Consider clarifying terminology – "Reports to floor" is the same as "reports to ward" and "Send-out Area" means "Referral Area."
- Ask participants to resume their original groupings for the next portion of this activity.

Step 8. Conduct the activity (spaghetti diagram) — 5 min

- Indicate that each group will trace the technologist's movement using Handout 4: Observed Steps in their floor plan (Worksheet 1: Floor Plan with the glued cut-outs created during step 5 of this activity).
- Indicate they have 5 minutes to trace the steps.

Step 9. Debrief the activity — 15 min

- Review the floor plans with the class. There are several options to facilitate this review, such as collect all laboratory floor plans and place them together on one table or perform a generalized critique at the front of the class.
- Discuss the various layouts with the class. Explore how the floor plan layout might have been designed differently if the observed steps listed in Handout 4

were known prior to designing the layout. Discuss how the workflow path must not be based upon assumptions, but directly observed.

- Emphasize that even little changes can add up over time. Indicate this spaghetti diagram only traces the movement for one patient request. Relate this to turn-around time (TAT) and the use of quality indicators (QI) to measure the effect of these changes.
- Explore how the spaghetti diagram would change if the process involved more staff members assigned to work areas. Emphasize the importance of mapping their site's observed workflow processes. Mapping can highlight waste in the process and assist with layout design that supports the process.

Step 10. Conclude the Activity 5 min

- Emphasize to participants that they may not be able to change the laboratory's allotted space. However, they do have control over the process and layout design so that they can achieve an outcome that is more productive and efficient.
- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- Optimal laboratory design involves two factors:
  - physical layout of the allotted space
  - workflow path designed around the steps of the process to be performed in that space.
- Mapping the process and diagramming the floor plan are needed tools for laboratory redesign.
- Regardless of the physical space allotted to the laboratory, laboratorians can still make improvements through process and layout design.

ACTIVITY OBJECTIVES MET?

Can they:

- Design a layout with regard to the workflow path?
- Create a spaghetti diagram that traces the movement of staff members or specimens?

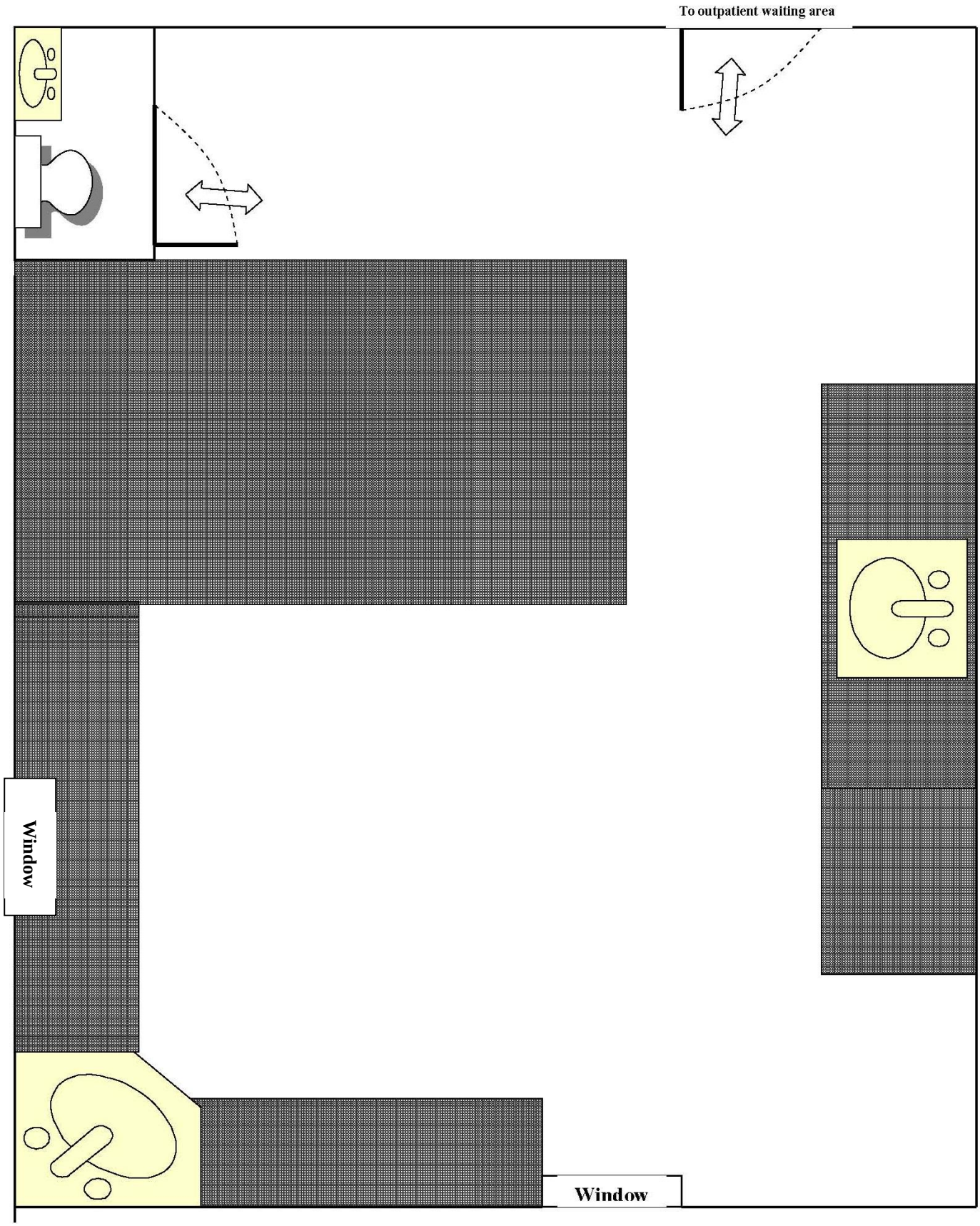
➢➢ Connections and Applications

- A laboratory layout (structure) and workflow path designed around the steps of a process will result in reducing wasted time, effort, and movement, thus increasing productivity and efficiency (outcome).
- In addition to the allotted laboratory space, consideration must be given to the design of the layout with regard to the workflow path and processes
- Waste (time, effort and movement) is most often caused by the layout of the department and poor process design
- To design a more efficient laboratory, all broken or not-in-use equipment and supplies should first be removed. Commonly, wasted space from broken or not-in use items is ignored and worked-around. Identifying these items can free up much needed space and assist with organizing the working environment.
- Analysis of the workflow must consider personnel assignments, equipment, physical layout, and safety.
- The placement of ancillary equipment is an important aspect when designing the laboratory. However, the vibrations caused while operating the centrifuge may interfere with the performance of sensitive analyzers or microscopes when placed too closely.
- Many laboratories do not have a distinct and separate area designated for AFB direct smear preparation and staining. Ideally, the laboratory arrangement should include a well-ventilated area with restricted access dedicated to microbiology. Current and future laboratory plans must always carefully consider the biosafety needs of the laboratory. These needs must be communicated to upper management.
- In instances where a dedicated room is not currently available for direct AFB smear testing, the laboratory can take measures to make a poor arrangement better. Choose an area of the laboratory near an open window and as far as possible from other testing and patient areas. Consider installing an exhaust fan or a common box fan that directs the movement of air outward to remove aerosols and chemical fumes from staining. Verify that the movement of air is directed towards the outside by tying a string or using tissue paper to observe the air flow current. Require the documentation of this air movement observation on a record prior to smear preparation. Develop and monitor applicable safety precautions before and during smear preparation and staining procedures. For example, allow the sputum specimen to stand undisturbed for 20 minutes, keep the container firmly closed at all times except during smear preparation, only open the lid away from the face, and fix smears by flaming only after drying is complete.
- The outcome can be measured and analyzed using quality indicators. For example, obtaining a baseline TAT, making changes, and recollecting TAT after the changes are instituted can measure the effectiveness of the changes.

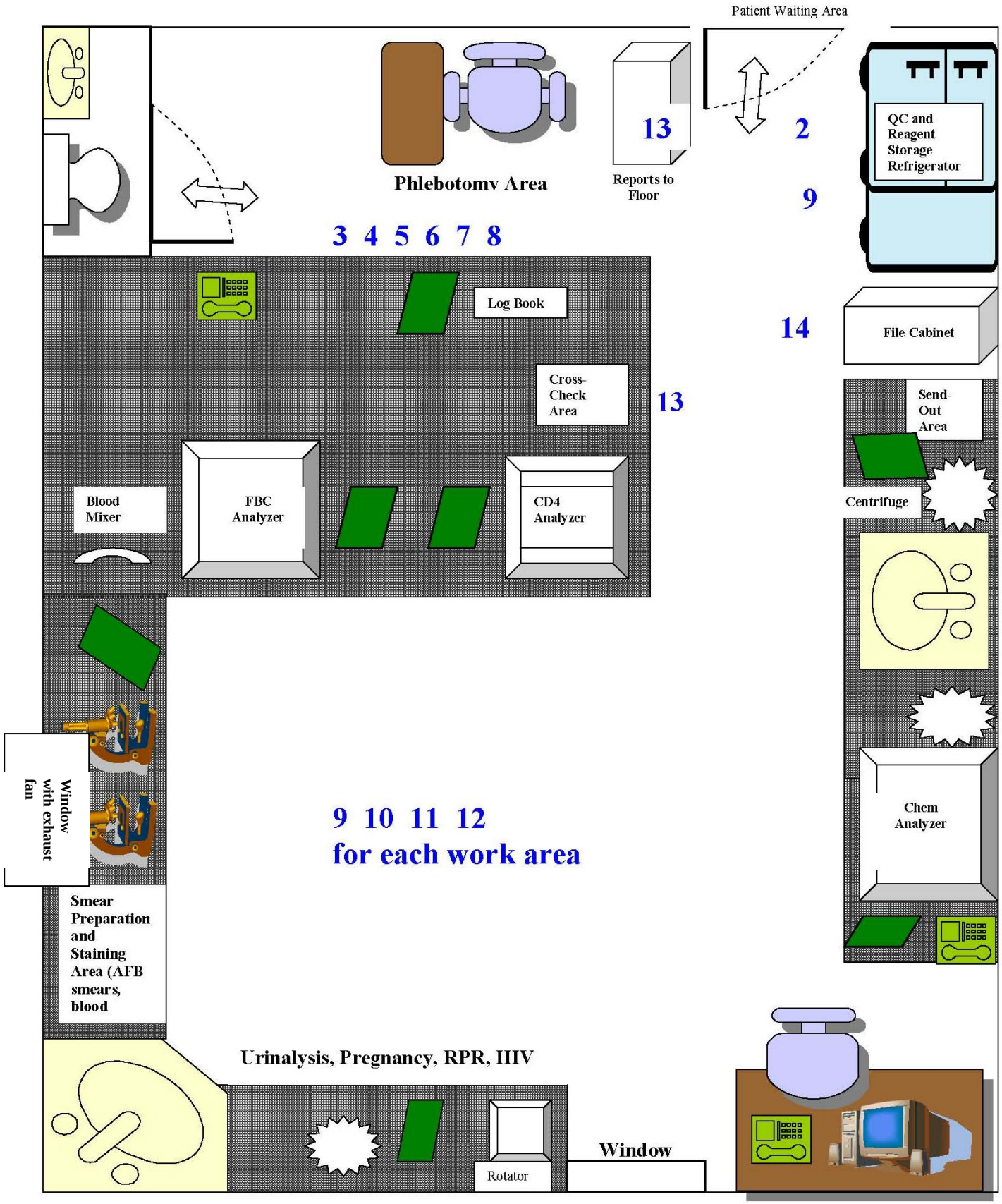
Handout 1: Specimen Flow

	Step	What happens?		Step	What happens?
PRE-ANALYTICAL PHASE	**1. Order placed**	Clinician determines need	ANALYTICAL PHASE	**9. Routine quality checks completed**	Prior to testing, determine if proper routine QC, reagent validation, equipment maintenance and calibration completed
	2. Patient presents to laboratory	Laboratorian interacts with patient		**10. Specimen analyzed**	Run analysis on specimen
	3. Requisition completed & reviewed by laboratory staff	Requisition reviewed for proper information		**11. Test results analyzed**	Review test results for accuracy, legibility, & validity; Cross-checking Assure proper quality monitoring
	4. Specimen type determined for collection	Note specific test requested and determine what type of sample is needed			
	5. Specimen collected	Blood drawn from patient; Sputum, urine, stool, or other specimen is collected			
	6. Specimen logged	Appropriate information recorded in specimen log	POST-ANALYTICAL PHASE	**12. Test results recorded**	Transfer test results into logbook, Record results accurately
	7. Specimen accepted or rejected	Specimen accepted or rejected based on meeting acceptance criteria		**13. Test results communicated / reported**	Notify Clinician of results via written report Verbal reporting if necessary Critical Values reporting Assure that referral specimens are properly tracked
	8. Specimen assigned according to test request/s	Requests reviewed for ▪ Testing priority – STAT versus routine ▪ If multiple tests to be done, sequential workstations versus aliquoting ▪ Centrifugation required ▪ Send out versus in-house testing		**14. Documents and records maintained, filed & stored**	File & store results in a retrievable fashion Transfer files to long term storage Dispose of files at an appropriate time

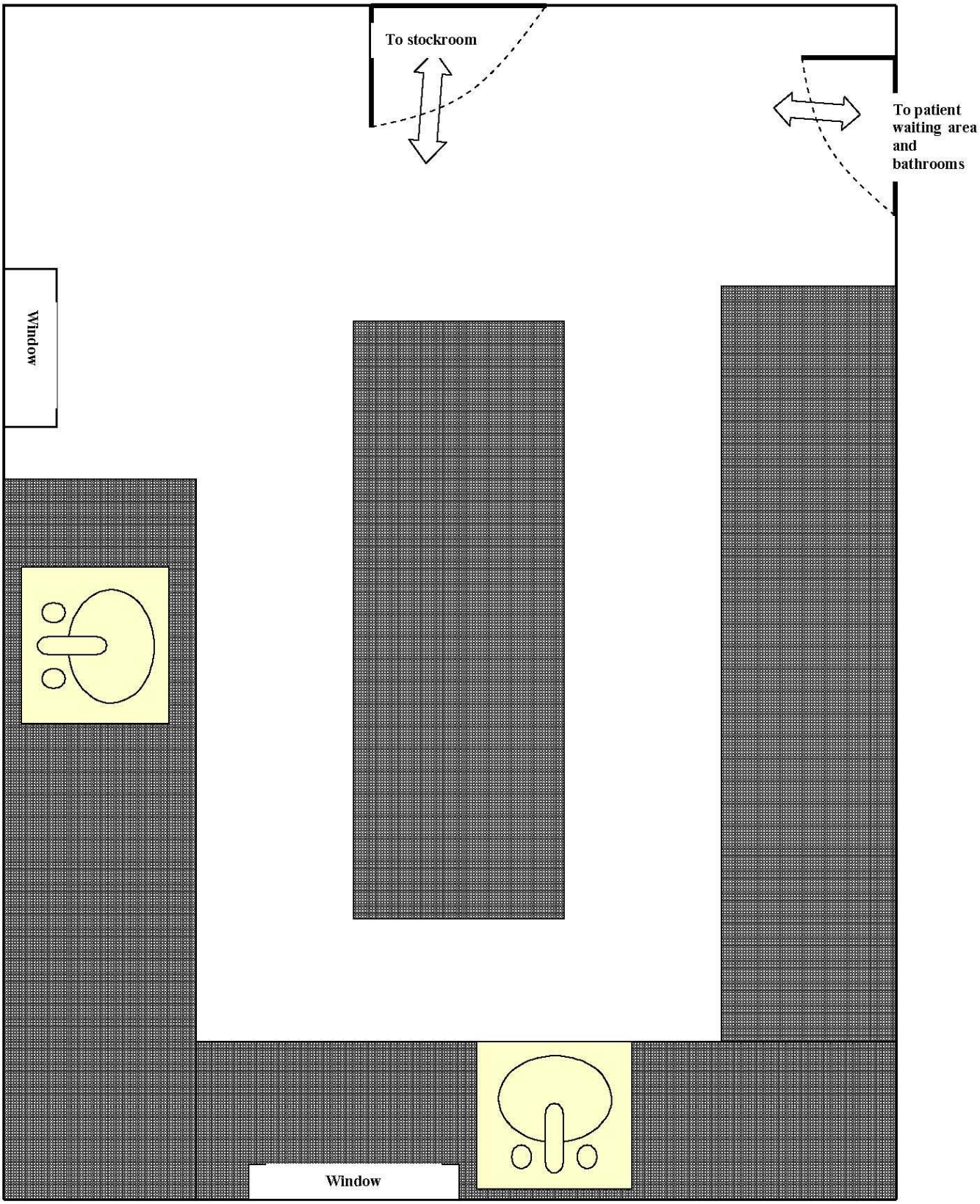
Handout 2: Sample Floor Plan



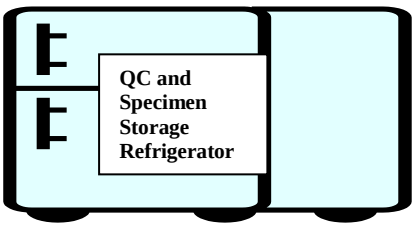
Handout 3: Diagram with Equipment and Inserted Steps

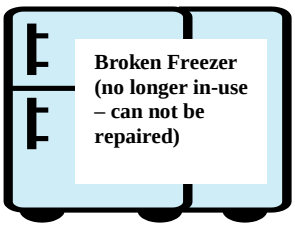


Worksheet 1: Floor Plan

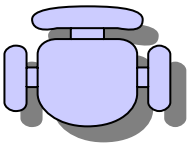


Worksheet 2: Equipment Cut-outs





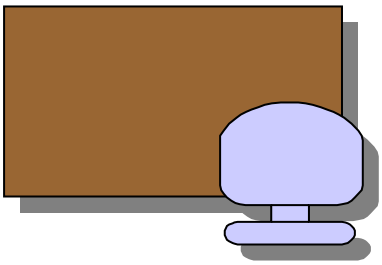
Phlebotomy Chair

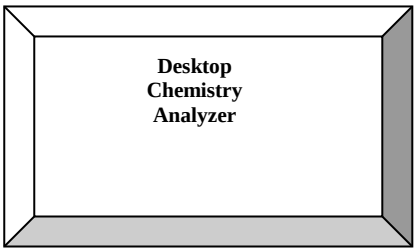


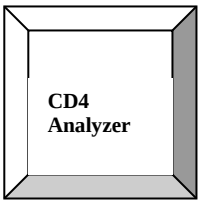
Log Books

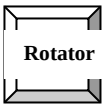
Phone

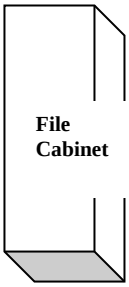
Blood
Mixer

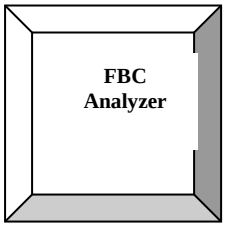


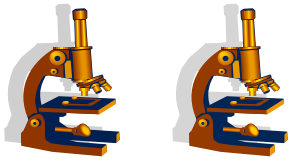




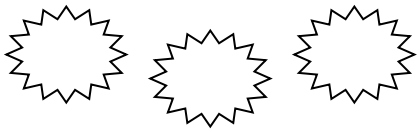








Centrifuges



INSTRUCTIONS

Cut-out each object and place them into the floor plan. Do not modify shape or size. You may use no more than 7 logbooks and no more than 3 centrifuges for your workflow.

Designate the placement for the following in your floor plan:

- Phlebotomy area
- Send-out area
- Cross-Check area
- Documents and Records area
- Testing area for FBC, Differential, Malarial Smear, CD4, Chemistry Profile, Urinalysis with microscopic, Urine Pregnancy, RPR, Rapid HIV, AFB Smear.

Glue all objects to the floor plan.

Write the designated areas in the floor plan.

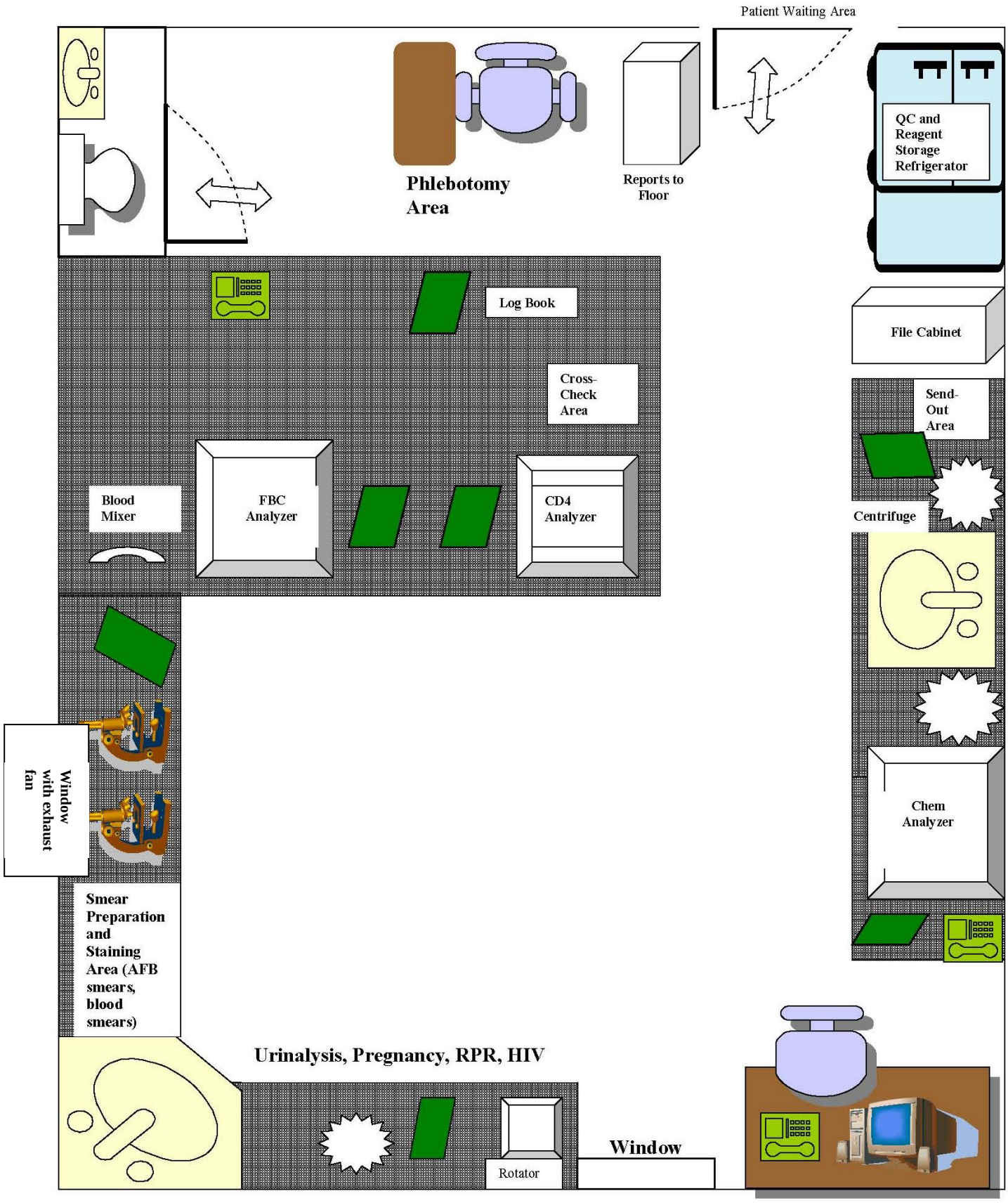
Handout 4: Observed Steps

Trace the technologist's observed movement in your floor plan in the sequence listed.

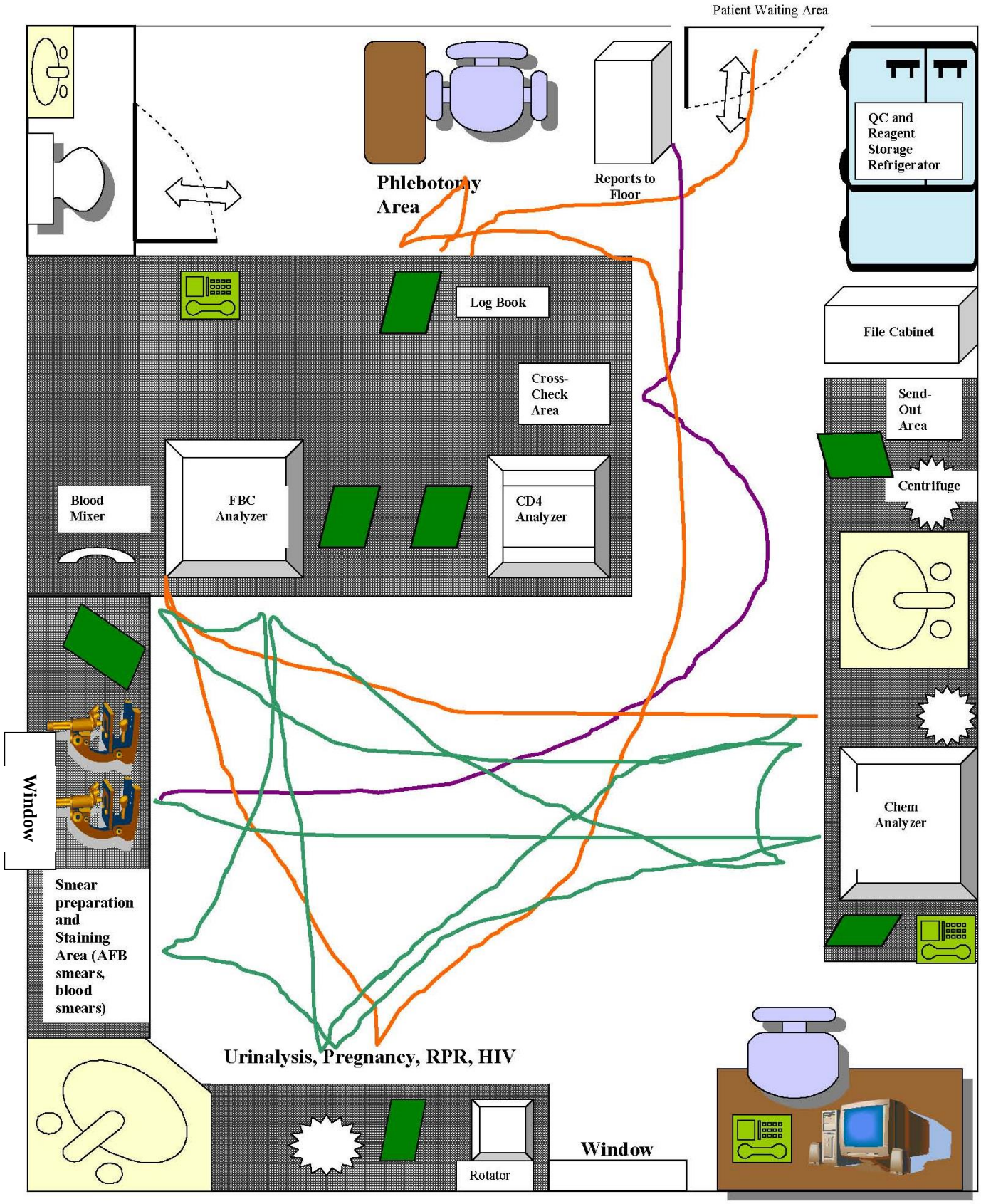
Quality control was performed earlier in the day.

1. Technologist greets patient
2. Requisition completed and reviewed, patient identification is verified
3. Specimen type is determined for chemistry profile, FBC, malaria smear, and urinalysis with microscopic
4. Urine and blood specimens are collected and labeled
5. Specimens are logged
6. Specimens are acceptable (urine quantity sufficient for testing, 1 full EDTA, 1 full red top)
7. Urine container placed at urinalysis testing area
8. EDTA tube is inserted into the mechanical blood mixer
9. Red top tube is placed into centrifuge
10. EDTA tube is removed from mechanical blood mixer
11. Malarial smear is prepared and allowed to air dry
12. FBC is analyzed
13. FBC results are recorded
14. Urinalysis macroscopic is dipped with test strip and analyzed
15. Urinalysis macroscopic results are recorded
16. Urine aliquot is poured over and placed into a centrifuge
17. Red top tube is removed from centrifuge
18. Red top tube is placed on chemistry analyzer to begin profile testing
19. Malarial smear is stained
20. Urine aliquot is decanted and sediment resuspended
21. Urinalysis microscopic is performed
22. Urinalysis microscopic results are recorded
23. Chemistry results are completed and validated
24. Chemistry results are recorded
25. Malarial smear microscopy is performed
26. Malarial smear results are recorded
27. Consolidated patient report is cross-checked
28. Patient report is released

Worksheet 3: Diagram with Equipment



Handout 5: Spaghetti Diagram



ACTIVITY Improving a Problem Floor Plan Module 1

PURPOSE:

Optimal laboratory design requires that the physical work environment is safe and appropriate for testing.

In this activity, participants will identify hazardous elements in the work environment of the provided laboratory floor plan. Using the floor plan, participants will redesign the layout so that the problems are addressed.

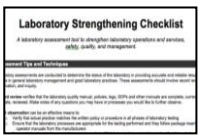
STOP DO NOT conduct this activity until you have done Process + Structure = Outcome activity!

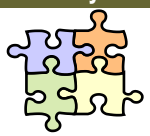
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.14 to 1.19
- ❑ Flipchart and markers
- ❑ Scissors, glue sticks

RESOURCES FOR PARTICIPANT:

- ❑ Handout 1:Problem Floor Plan (109)
- ❑ Handout 2: Suggested Layout (110)
- ❑ Worksheet 1: Floor Plan (111)
- ❑ Worksheet 2: Equipment Cut-Outs (112)

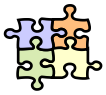
This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.1 Organize the laboratory and coordinate work space to allow for smooth, efficient service operations 1.2 Design workflow for optimal productivity 1.13 Communicate to upper management regarding personnel, facility, and operational needs 2.4 Ensure appropriate physical work environment for testing
Checklist Items 	1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? (Preventive Action; Accommodation and Environmental Conditions) 11.3 Communication System on Laboratory Operations Does the laboratory communicate with upper management regularly regarding needs for continual improvement? 12.1 Is there documented evidence that the laboratory has evaluated the adequacy of the size and overall layout of the laboratory and organized the space so that workstations are positioned for optimal workflow? 12.2 Are the patient care and testing areas of the laboratory distinctly separate from one another? 12.4 Is the physical work environment appropriate for testing?

This activity is related to the following activities:	
	Module 1: Process + Structure = Outcome

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Discuss the problematic floor plan	5 min	Slides 1.14 to 1.17 Handout 1	
2	Introduce the activity	10 min	Slide 1.18 Worksheet 1 Worksheet 2	
3	Conduct the activity	15 min	Worksheet 1 Worksheet 2 Scissors Glue Stick	
4	Debrief the activity	10 min	Slide 1.19 Handout 2	
5	Conclude the activity	5 min		
	TOTAL TIME:	**45 min**		

PROCESS

Preparation



- Facilitate the *Process* + *Structure*= *Outcome* activity prior to this activity.
- Ensure the worksheets are printed using a single-sided format. Any information printed on the flip side of a double-sided print format will be unusable.
- Provide each group with a pair of scissors and one glue stick.

Step 1. Discuss the problematic floor plan 5 min

- Project Slide 1.14 to introduce the activity.
- Project Slides 1.15 to 1.16 while referencing Handout 1: Problem Floor Plan. Ask participants to indicate what problems they notice on the floor plan and why a manager must address them (answer – electrical cords on the ground creating a hazardous work environment, and equipment positioned in front of an opened and broken window).
- Project Slide 1.17 and refer to item 12.4 on the *SLIPTA Checklist*. Emphasize to the participants that the checklist can be used as an inspection tool to identify problems in their work environment.

Step 2. Introduce the activity 10 min

- Project Slide 1.18 to provide an overview of the activity.
- Divide the class into groups of 3-5 participants. Each group will collaborate and redesign one laboratory layout.
- Refer participants to Worksheet 1: Floor Plan and Worksheet 2: Equipment Cut-Outs.
- Explain that for this laboratory floor plan, they must redesign the laboratory layout. Review the directions indicated on Worksheet 2 with the class. Indicate they can move the objects around to design the layout that addresses the issues listed on the flipchart page and supports the workflow. Emphasize that they should not glue the objects onto the floor plan until the group has agreed upon the proposed layout.
- Indicate they have 15 minutes to design their laboratory.

Step 3. Conduct the activity 15 min

- Provide assistance and coaching with the activity.

Step 4. Debrief the activity 10 min

- Ask participants what challenges or issues they may have encountered during the redesign process.
- Project Slide 1.19 while referencing Handout 2: Suggested Layout. Discuss this handout with the participants.
- Explain that when participants consider redesigning their own laboratory, they should note the location of the electrical outlets and any other utilities on their floor plan.

- Ask participants what actions they can take to address the broken window. Facilitate a discussion about how to communicate facility needs to upper management.

Step 5. Conclude the Activity 5 min

- Emphasize to participants that they may not be able to change the laboratory's allotted space. However, they do have control over the layout design so that the work environment is safe and efficient.
- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- Safety is an integral component in laboratory design.
- Hazardous work environments must never be ignored by creating inappropriate work-arounds. Small changes in layout design can address immediate concerns. For larger issues, the laboratory must communicate facility and safety needs with upper management.
- An inspection of the work environment should be performed periodically to identify problems and unsafe work conditions.

ACTIVITY OBJECTIVES MET?

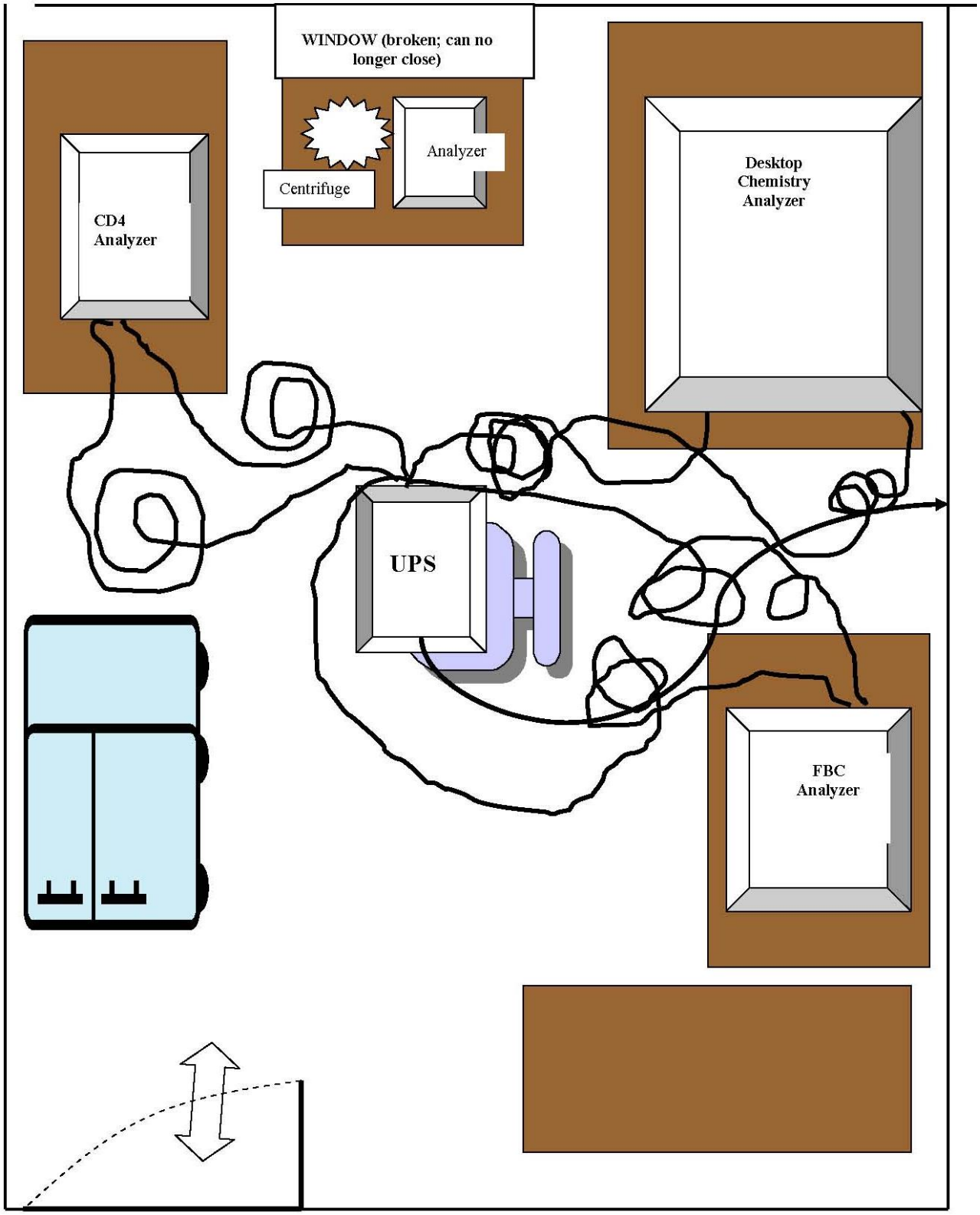
Can they:

- Identify issues with poor design and unsafe work conditions?
- Redesign a laboratory layout to address unsafe work conditions?

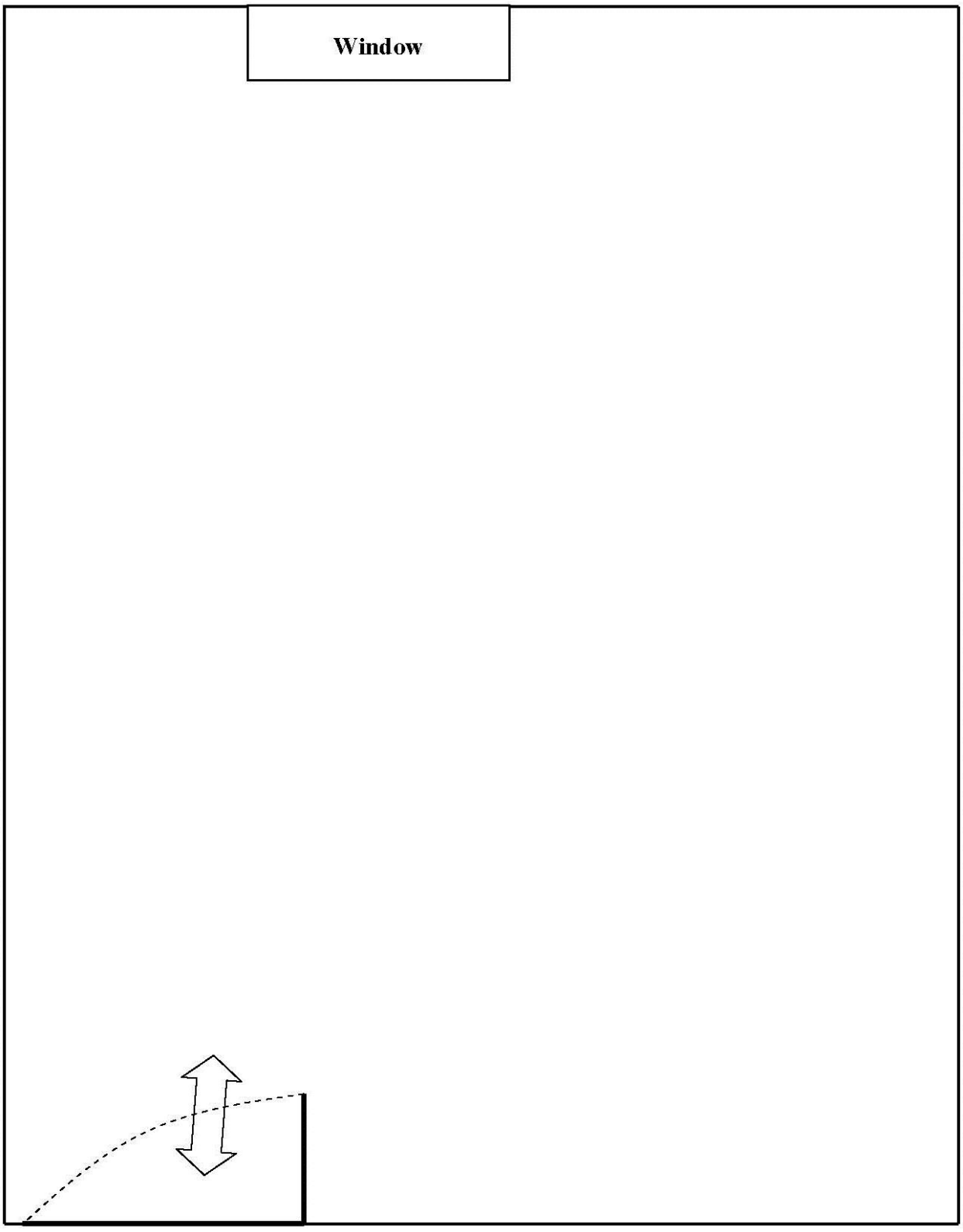
Connections and Applications

- Safety must always be foremost with regard to laboratory redesign. The most valuable resource a laboratory possesses is its employees.
- To design a more efficient laboratory, all broken or not-in-use equipment and supplies should first be removed. Commonly, wasted space from broken or not-in use items is ignored and worked-around. Identifying these items can free up much needed space and assist with organizing the working environment.
- It is important to create an equipment list that includes specifications such as size, wall clearance, and utility requirements (power, data connections, drains, vacuum, and water).

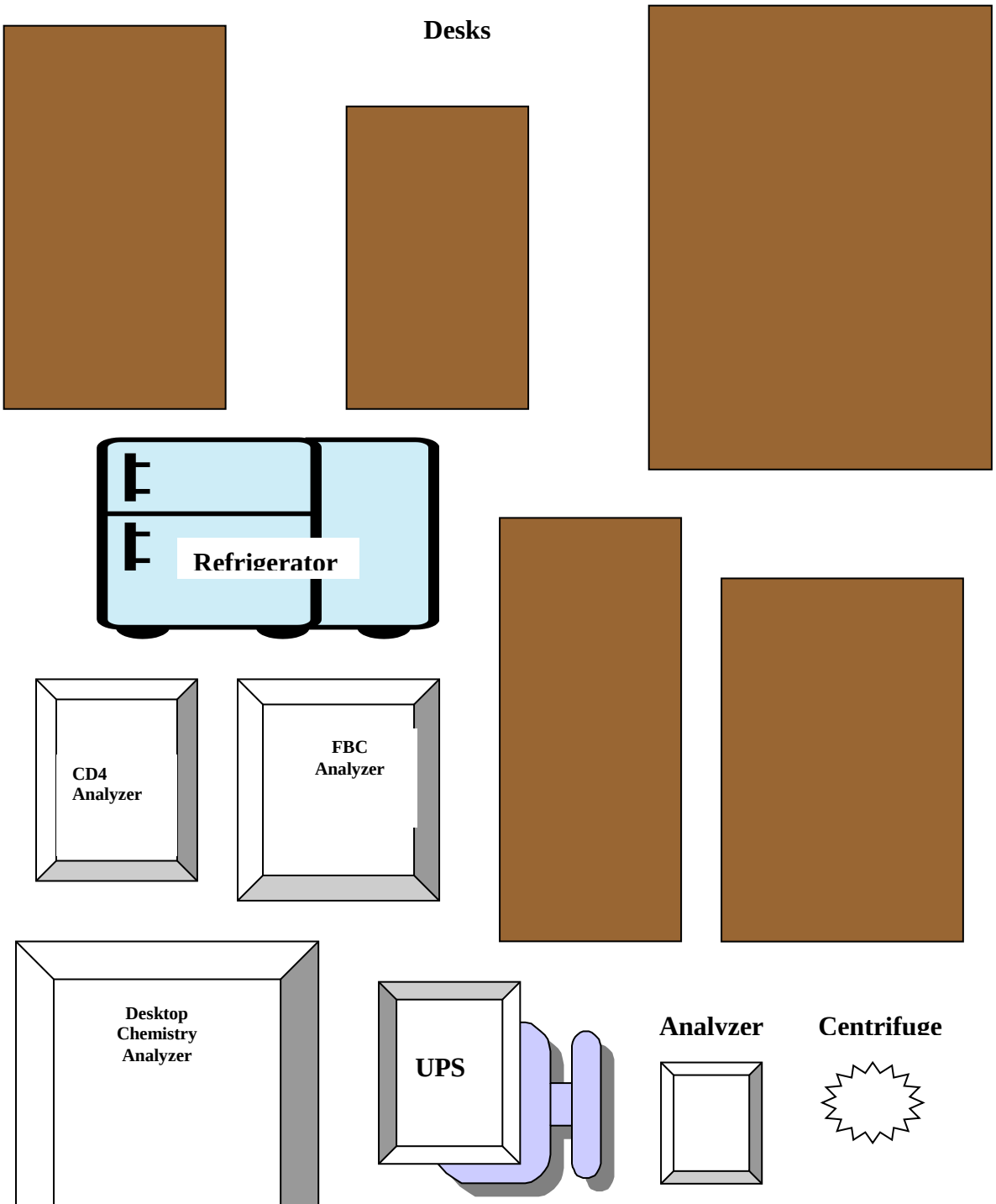
Handout 1: Problem Floor Plan



Worksheet 1: Floor Plan

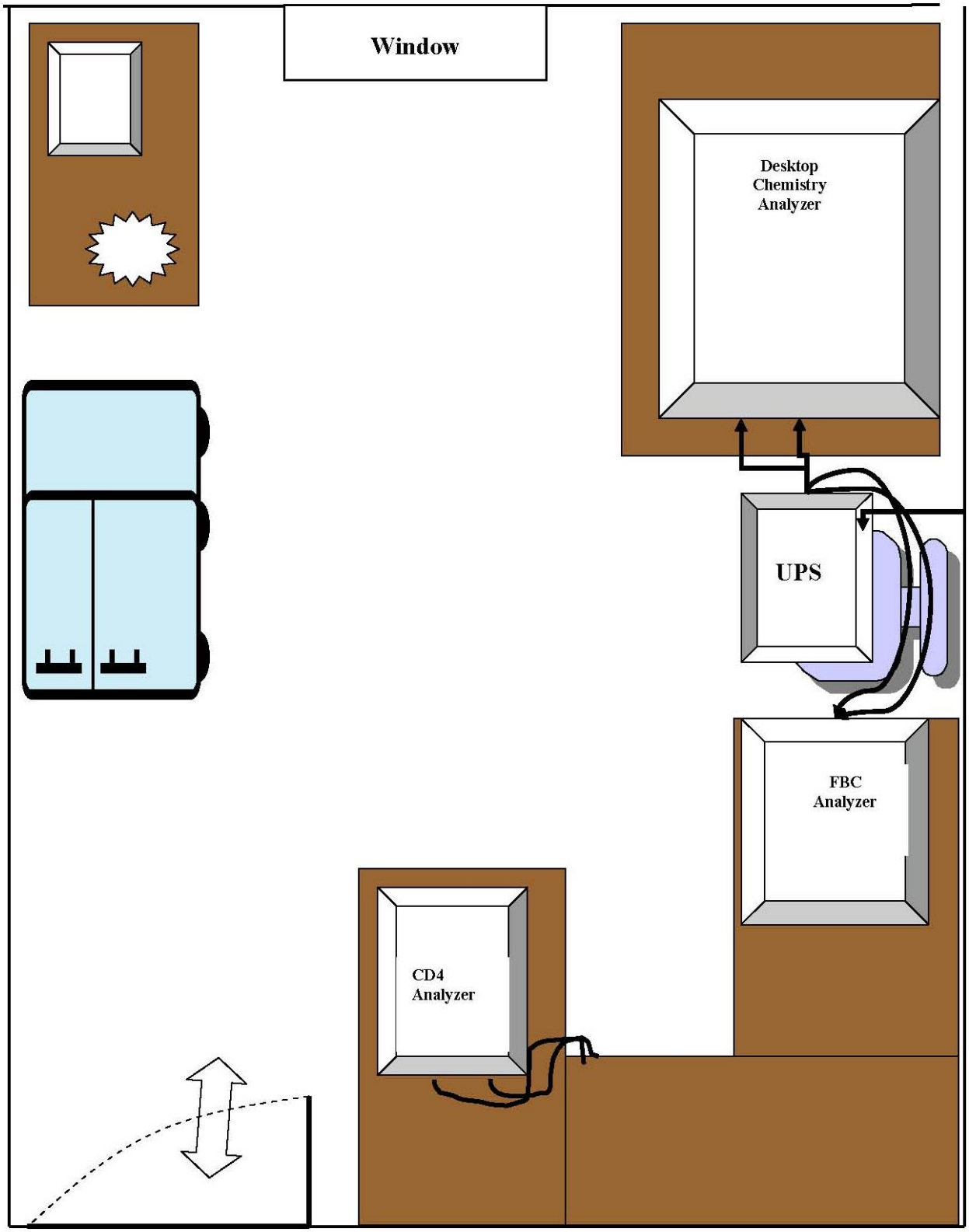


Worksheet 2: Equipment Cut-outs



Cut out each object and place them into the floor plan. Do not modify shape or size. Every object must be placed into your floor plan.
Arrange the pieces so that the electrical wires no longer pose a safety hazard. Arrange the equipment so that the broken window does not present a water hazard.
Glue all pieces to the floor plan.

Handout 2: Suggested Layout



ACTIVITY Mapping Out The Floor Plan of Your Laboratory Module 1

PURPOSE:

A good laboratory floor plan eliminates or significantly reduces waste by removing excess movement, time and effort. To effectively redesign a laboratory, the current floor plan and workflow path must be evaluated. In this activity, participants learn how to create a floor plan of their own laboratories. A follow-up activity will allow them to improve the workflow by redesigning the floor plan of their laboratories.

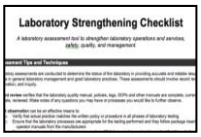
STOP DO NOT conduct this activity until you have done Improving a Problem Floor Plan activity!

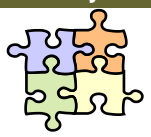
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.20 to 1.21
- ❑ Flipchart and markers
- ❑ Grid paper or construction paper
- ❑ Plastic bags or envelopes
- ❑ Tape, scissors, glue sticks
- ❑ Pencils with erasers

RESOURCES FOR PARTICIPANT:

- ❑ Worksheet 1: Cut-outs for Unmovable Items (113)
- ❑ Worksheet 2: Cut-outs for Workbench (114)
- ❑ Worksheet 3: Cut-outs for Movable Items (115)

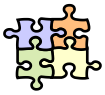
This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.1 Organize the laboratory and coordinate work space to allow for smooth, efficient service operations 1.2 Design workflow for optimal productivity
Checklist Items 	12.1 Is there documented evidence that the laboratory has evaluated the adequacy of the size and overall layout of the laboratory and organized the space so that workstations are positioned for optimal workflow? 12.2 Are the patient care and testing areas of the laboratory distinctly separate from one another? 12.4 Is the physical work environment appropriate for testing?

This activity is related to the following activities:	
	Module 1: Process + Structure = Outcome Module 1: Improving a Problem Floor Plan Module 1: Redesigning the Floor Plan of Your Laboratory

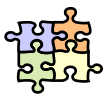
ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Demonstrate how to create a simple floor plan to the class	15 min	Slide 1.20 Tape Construction paper Worksheet 1 Worksheet 2 Worksheet 3	
2	Introduce the activity	5 min	Slide 1.21	
3	Conduct the Activity (A and B)	20 min	Worksheet 1 Worksheet 2 Grid paper Scissors Glue sticks Pencils	
4	Conduct the Activity (C and D)	15 min	Worksheet 3 Grid paper Scissors Pencils Plastic bags	
5	Discuss floor plan and workflow of selected lab(s)	15 min		
6	Debrief the activity	10 min		
7	Conclude the activity	5 min		
	TOTAL TIME:	**80 min**		

PROCESS

Preparation



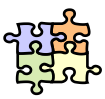
- Facilitate both the *Process +Structure = Outcome* and *Improving a Problem Floor Plan* activities prior to this activity.
- Ensure the worksheets are printed using a single-sided format. Any information printed on the flip side of a double-sided print format will be unusable.
- Provide each participant with a scissor, plastic bag (or envelope), pencil with eraser, and glue stick.
- Procure graph paper (or construction paper) so that each participant has one sheet. It is recommended to have extra paper to accommodate several rough drawings or to create additional cut-outs.
- Prepare one set of classroom cut-outs using construction paper to represent the desks, projector screen, laptops, projector and any other movable item located in the training room. These training room cut-outs will be used to demonstrate to the class how to place the movable items into the classroom's floor plan (step 1). For this demonstration, have tape readily available to attach the classroom's movable items.



- Facilitate the follow-up activity, *Redesigning the Floor Plan of Your Laboratory*, at the conclusion of this activity.

Step 1. Demonstrate how to create a simple floor plan to the class 15 min

- Project Slide 1.20 to transition participants to this activity.
- Remind participants that a floor plan is a drawing to show the layout of space from the perspective of looking down upon it, a bird's eye view of the physical space.
- Draw the floor plan of the classroom on a flipchart.
  - Insert any doors, windows, electrical outlets, or any other immovable object into the floor plan. Emphasize these are permanent structures and can either be drawn into the plan or the representation of the item glued to the floor plan.
  - Display Worksheet 1: Cut-outs for Unmovable Items to the class. Explain how these items can be glued onto their laboratory floor plan since they can not be moved.
  - Tape the back of your previously prepared classroom cut-outs (projector screen, projector, laptop, etc) for this demonstration and attach them to the floor plan. Indicate these are movable and should not be glued to the floor plan. Emphasize this point by removing one desk cut-out from the flipchart while repositioning an actual desk in the classroom.
  - Display Worksheet 3: Cut-outs for Movable Items to the class. Review the items and emphasize that these laboratory items should not be glued down on their floor plan. They should remain movable. Remind participants that they worked with only the movable items in the *Process + Structure = Outcome* and *Improving a Problem Floor Plan* activities.



  - Display Worksheet 2: Cut-outs for Workbench to the class. Explain how some workbenches in the laboratory are un-movable and should be glued down. Explain that other workbenches or items that serve as a workbench (common desk) are items that can be moved and therefore should not be

glued down.

- (**Optional**) Demonstrate the concept of using movable items to assist with redesign. If you redesigned the classroom to better facilitate the training by rearranging the desks, demonstrate the initial classroom's layout by moving the cut-outs as it first appeared. Explain why you decided to rearrange the classroom and begin moving the cut-outs to reflect the current arrangement. Emphasize the outcome you wanted was a more advantageous learning environment.

Step 2. Introduce the activity 5 min

- Project Slide 1.21 to provide an overview of the activity.
- Explain that each participant will create the current floor plan of their lab on paper using cut-out pieces. Suggest to participants with larger laboratories that contain several rooms, they may choose to focus on the core laboratory or their section. Indicate that they'll want to explore the total testing process so their floor plan should be detailed enough to include the pre-analytical and post analytical areas as well.
- Inform participants of the amount of time for the activity (35 minutes)
- Provide an overview of the step-by-step approach participants should take as they create their floor plan.
  A. Draw the walls of the lab and other permanent structure on paper such as doors, windows, electrical outlets (about 10 minutes)
  B. Put the unmovable cut-out pieces on the floor plan to indicate basins, doorways, benches, etc. and glue the unmovable pieces onto the paper (about 10 minutes)
  C. Put the movable cut-out pieces on the floor plan – do not glue! (about 10 minutes)
  D. Use a pencil to mark the workflow path by following a sample (about 5 minutes). Suggest participants trace the workflow path of their highest volume test or test combination that is applicable to their floor plan.

Step 3 Conduct the Activity (A and B) 20 min

- Distribute the following materials to each participant:
  - Grid paper or construction paper, pencils, scissors, glue sticks, Worksheet 1:Cut-outs for Unmovable Items, and Worksheet 2: Cut-outs for Workbench.
- Walk around to help participants who have difficulty.
- Make sure everyone completes one step before moving onto the next.

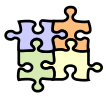
Step 4. Conduct the Activity (C and D) 15 min

- Collect glue sticks and distribute Worksheet 3: Cut-outs for Movable Items and bags (or envelopes -to store their movable pieces) after individuals have completed A and B.
  - You may decide to review the participant's floor plan at this stage to provide suggestions before he/she proceeds to C.
  - As you review the different floor plans, select one or two to discuss with the class.
  - Draw the selected labs' floor plans on the flipchart.

- Walk around to help participants who have difficulty.

Step 5. Discuss floor plan and workflow of selected lab(s) 15 min

- End the individual activity and make sure you have everyone's attention for the plenary discussion
- Show the sample floor plans on flipchart.
- Using a marker, trace the workflow of the lab(s) on the flipchart. Emphasize that tracing the workflow path can easily highlight and make the inefficiencies (waste) more obvious.



- Discuss how the laboratory's setup affects the efficiency of its workflow. Relate this to the *Process* + *Structure* = *Outcome* activity.
  - To better illustrate this concept, change the location of a movable object (place an 'X' over its current location and redraw its new location onto the flipchart's floor plan) that creates either a more efficient or inefficient workflow path.
  - Highlight the effect of the new location by using a different colored marker to trace the new workflow path.
  - Emphasize the placement of movable objects within the un-movable or fixed structure affects workflow.

Step 6. Debrief the activity 10 min

- Facilitate a discussion about the participants' challenges as they created their floor plan from memory. Discuss ways they can create an accurate and scaled floor plan when they return to their laboratory.
- Facilitate a discussion about the participants' challenges as they traced the workflow path. Emphasize the need to not base their workflow path on assumptions but on direct observations.

Step 7. Conclude the activity 5 min

- Highlight or reiterate the key messages below.
- Make certain participants achieved the objectives of the activity.
- Facilitate the follow-up activity, *Redesigning the Floor Plan of Your Laboratory*, to provide participants an opportunity to explore redesigning their laboratory layout. Instruct participants to keep their floor plans and movable objects readily available for the follow-up activity.

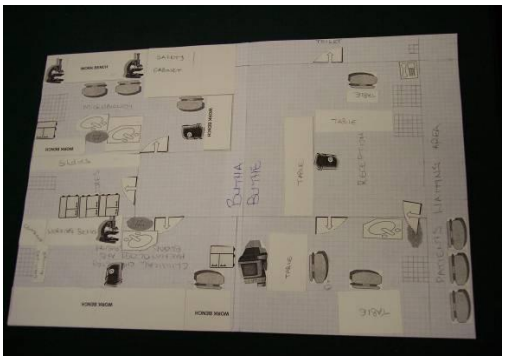
KEY MESSAGES

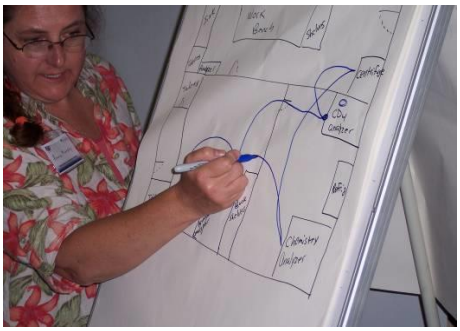
- To effectively redesign a laboratory, the current floor plan and workflow path must be evaluated.
- Repositioning movable items alters the workflow path.
- Tracing the workflow path in the floor plan can easily highlight inefficiencies and waste.

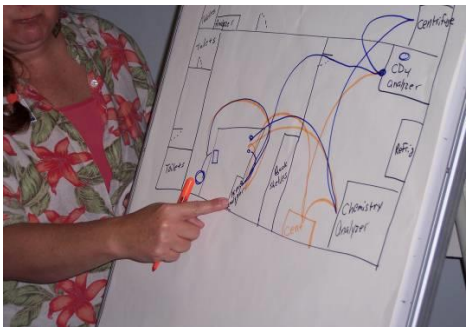
Can they:

- Create a floor plan?
- Trace the workflow path in a floor plan?
- Recognize that movable items can be repositioned within the limitations of the permanent structures?
- Recognize that changing the placement of movable items alters the workflow path?

ACTIVITY OBJECTIVES MET?



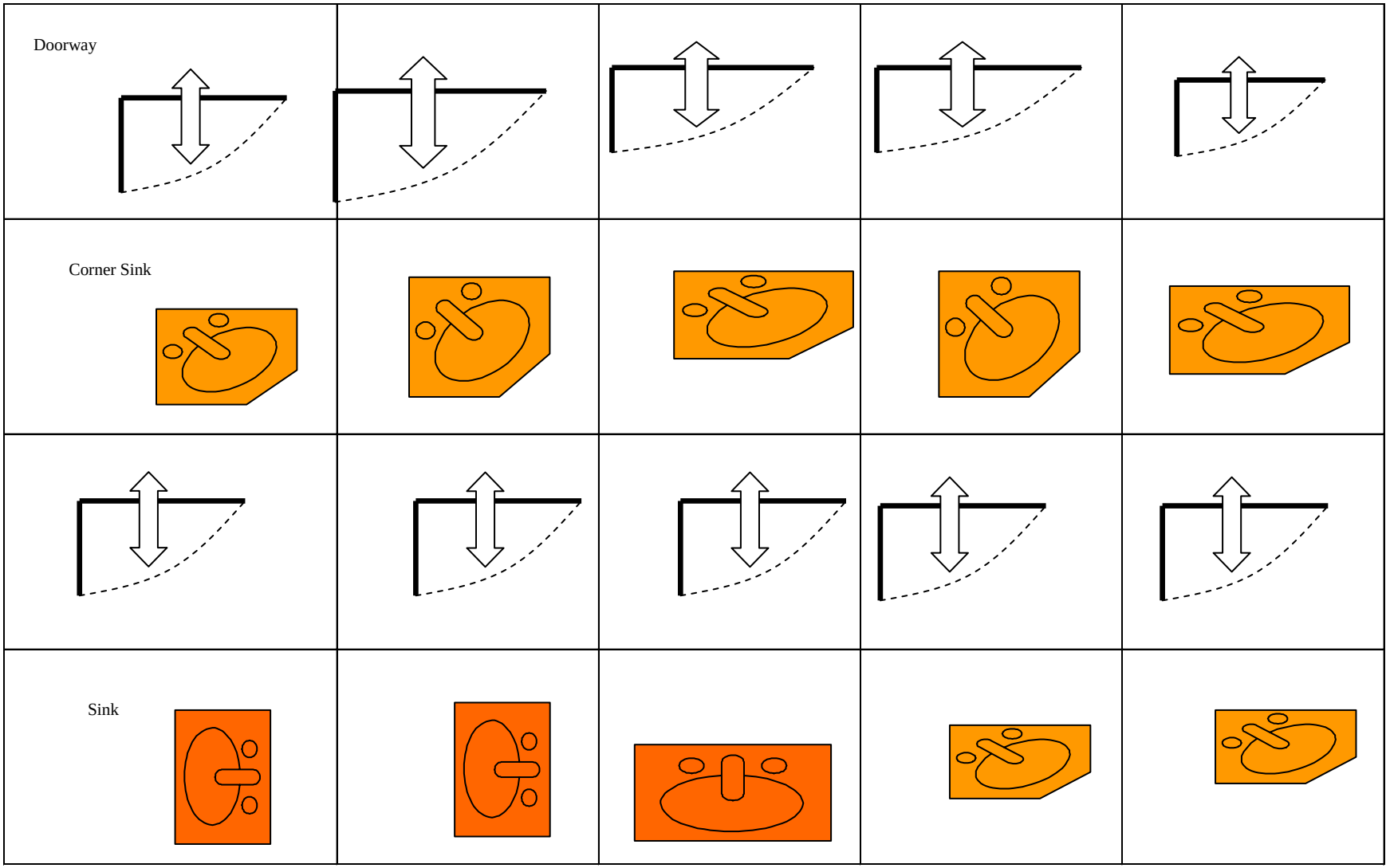




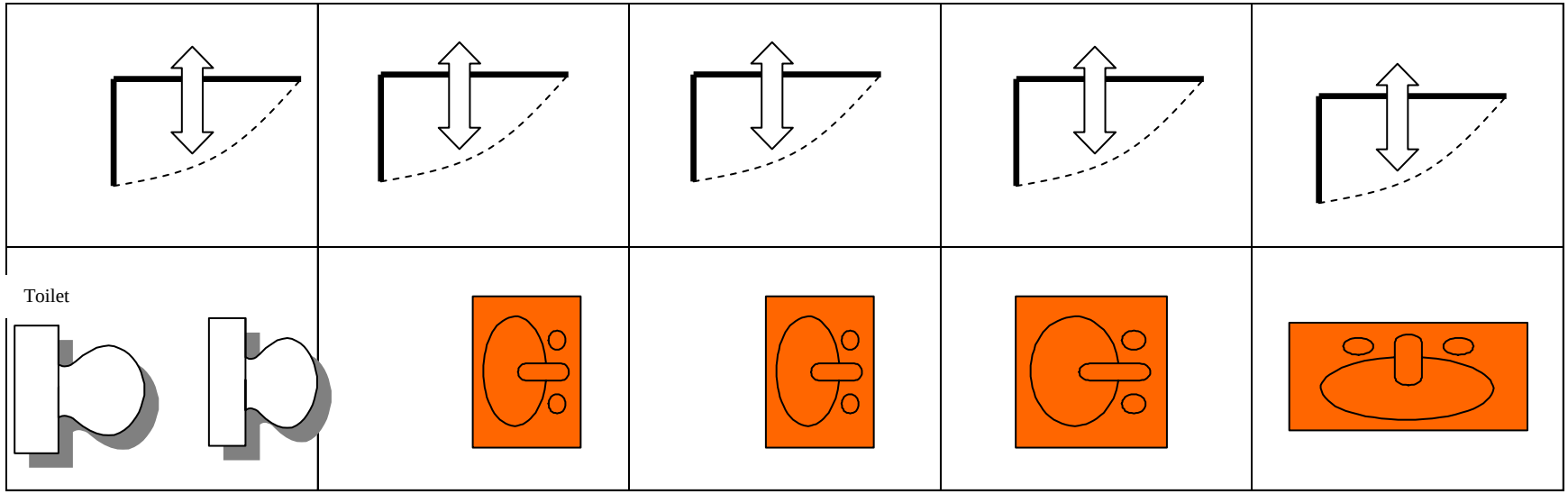
Connections and Applications

- Directly observing staff members working and walking and the flow of the specimens from collection through releasing of results in the existing layout will provide the accurate information needed to effectively redesign a more efficient laboratory.
- Tracing the workflow path can highlight possible movement patterns that can improve or disrupt the efficiency of the overall layout.
- Frequently, laboratories add new equipment and workstations by placing them into the first available space without considering the affect on the overall layout. Any new addition or removal should never be viewed as a separate and isolated entity without also considering the whole layout.

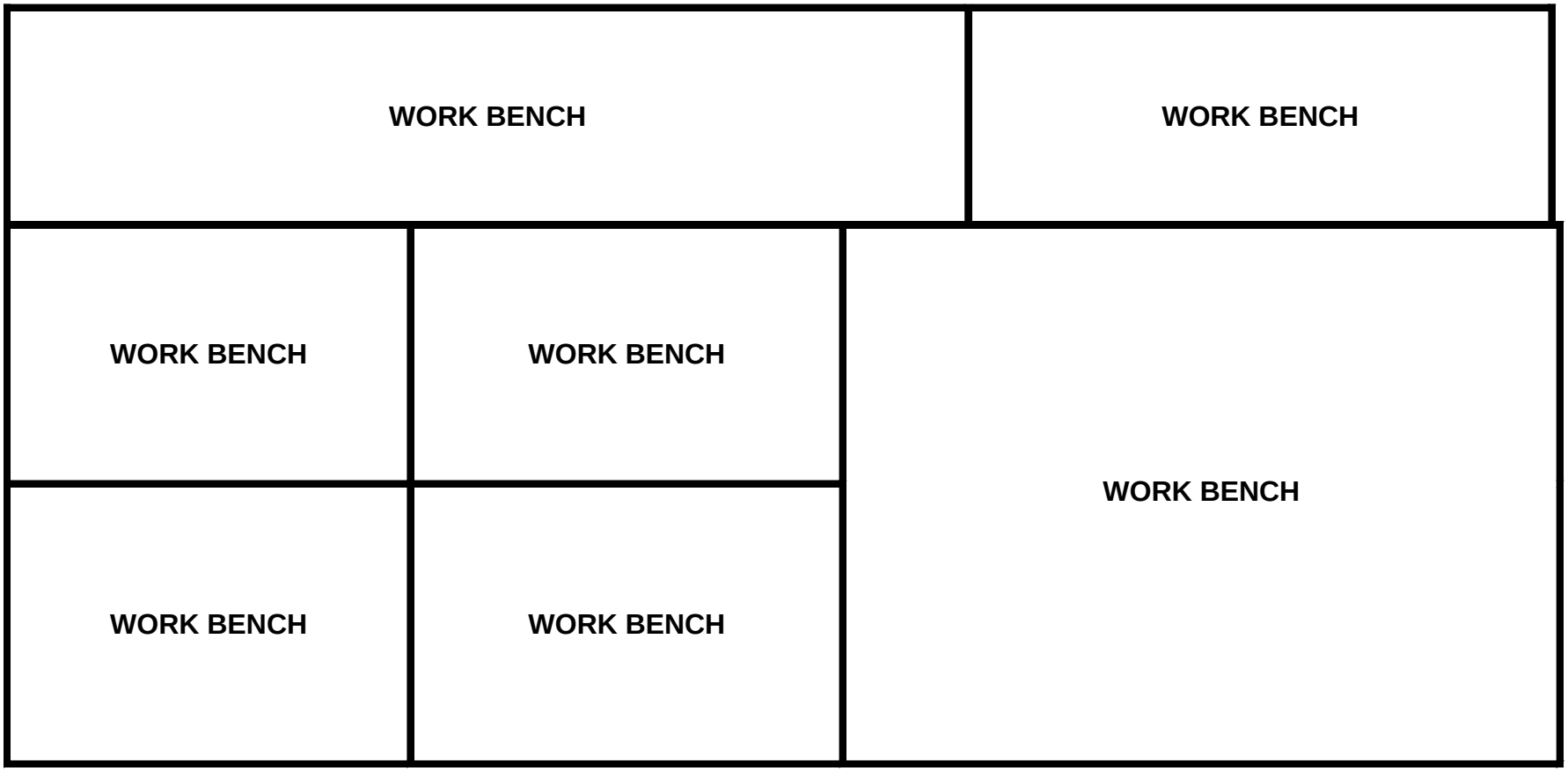
Worksheet 1: Cut-outs for Unmovable Items



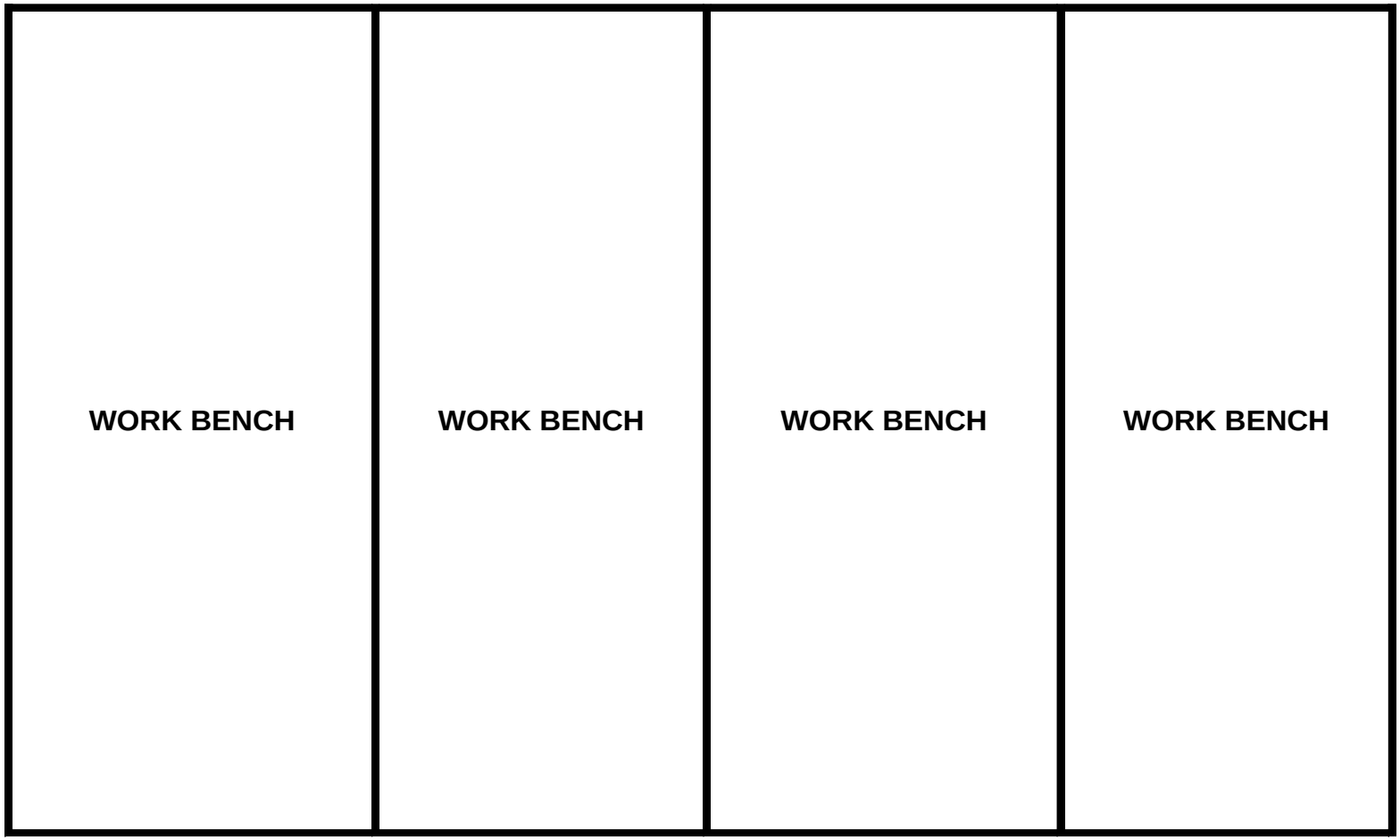
Worksheet 1: Cut-outs for Unmovable Items



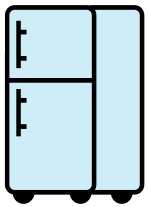
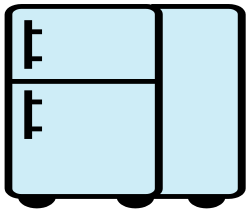
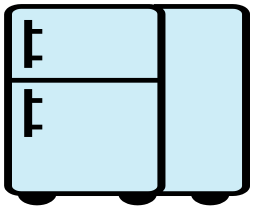
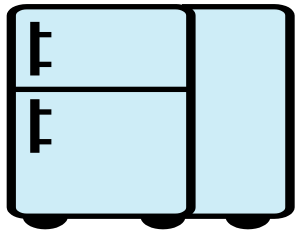
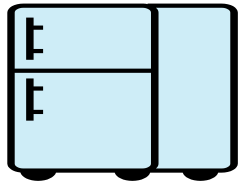
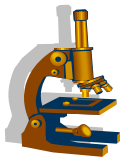
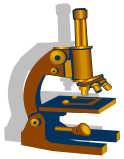
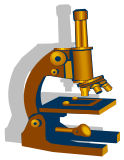
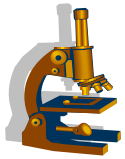
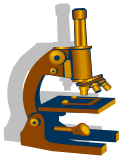
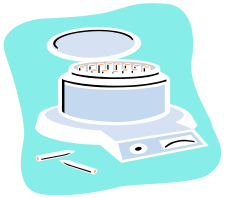
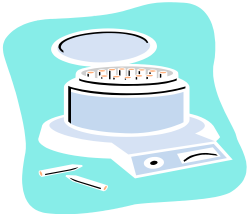
Worksheet 2: Cut-outs for Workbench



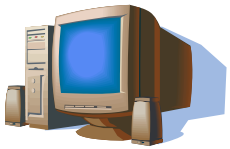
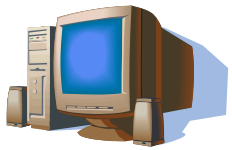
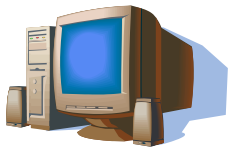
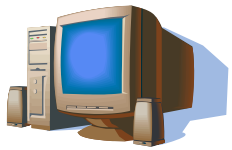
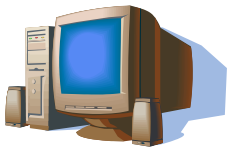
Worksheet 2: Cut-outs for Workbench



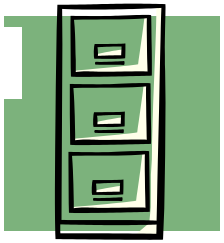
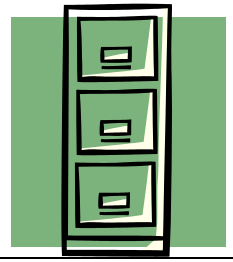
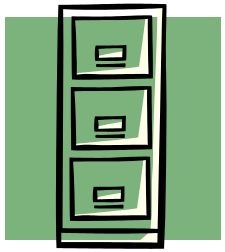
Worksheet 3: Cut-outs for Movable Items

Telephone 				
Refrigerator or Freezer 				
Microscope 				
Centrifuge 				

Worksheet 3: Cut-outs for Movable Items

Computer 				
Printer 				
 Analyzer				
				

Worksheet 3: Cut-outs for Movable Items

Bookshelf 				
File Cabinet 				

ACTIVITY Redesigning The Floor Plan of Your Laboratory Module 1

PURPOSE:

A good laboratory floor plan eliminates waste by removing excess movement, time and effort. In this activity participants redesign their laboratory layout to improve the workflow by repositioning movable items in their floor plan.

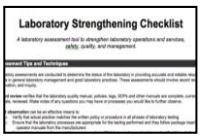
STOP DO NOT conduct this activity until you have done Mapping Out the Floor Plan of Your Laboratory activity!

RESOURCES FOR FACILITATOR:

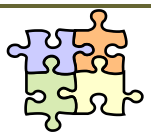
- ❑ PowerPoint slide: 1.22
- ❑ Flipchart and markers
- ❑ Glue sticks
- ❑ Pencils with erasers

RESOURCES FOR PARTCIPANT:

- ❑ Floor plans created in the last activity
- ❑ Moveable items from the last activity.
- ❑ Job Aid 1: Guiding Principles for Laboratory Layout (116)
- ❑ Job Aid 2: Redesigning Your Laboratory Action Plan (117)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.1 Organize the laboratory and coordinate work space to allow for smooth, efficient service operations 1.2 Design workflow for optimal productivity
Checklist Items 	5.1 Adherence to Proper Equipment Protocol Is equipment installed and placed as specified in the operator's manuals and uniquely labelled or marked? 7.9 Inventory Organization and Wastage Minimization Is First-Expiration-First-Out (FEFO) practiced? 11.4 Are quality indicators (TAT, rejected specimens, stock-outs, etc.) selected and tracked? 11.5 Is the outcome of the review of quality indicators used to improve lab performance? 12.1 Is there documented evidence that the laboratory has evaluated the adequacy of the size and overall layout of the laboratory and organized the space so that workstations are positioned for optimal workflow? 12.2 Are the patient care and testing areas of the laboratory distinctly separate from one another? 12.3 Is each individual workstation maintained free of clutter and set up for efficient operation? 12.4 Is the physical work environment appropriate for testing? 12.6 Laboratory Storage Areas Is laboratory-dedicated cold and room temperature storage free of staff food items, and are patient samples stored separately from reagents and blood products in the laboratory refrigerators and freezers? 12.8 Biosafety Cabinet Where a Biosafety cabinet is required to perform work, is it certified and appropriate?

This activity is related to the following activities:

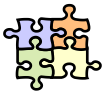


Module 1: Mapping Out the Floor Plan of Your Laboratory

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain the use of the floor plan and process mapping as tools	10 min	Job Aid 1	
2	Introduce the activity	5 min	Slide 1.22	
3	Monitor the activity	10 min	Floor plan Movable Items Pencils Glue sticks	
4	Debrief the activity	5 min		
5	Discuss next steps upon returning to the laboratory	10 min	Job Aid 2	
6	Conclude the Activity	5 min		
	TOTAL TIME:	**45 min**		

PROCESS

Preparation



- Facilitate the *Mapping Out the Floor Plan of Your Laboratory* activity prior to this activity. At the conclusion of this activity, consider assigning participants the redesign of their laboratory as an improvement project.
- Ensure participants have their floor plans and movable objects from the *Mapping Out the Floor Plan of Your Laboratory* activity readily available.
- Provide each participant with a pencil with eraser, and a glue stick.

Step 1. Explain the use of the floor plan and process mapping as tools 10 min

- Indicate that frequently a laboratory layout occurs with the addition or removal of movable objects to accommodate changes in testing services. Emphasize that these changes are customarily done without any forethought to their overall effect on the workflow path.
- Explain the floor plan and mapping the processes that direct the workflow path are tools to assess the overall layout and efficiencies of the laboratory.
- Distribute and discuss Job Aid 1: Guiding Principles for Laboratory Layout.
  - Emphasize the wasted movement indicated in the 'Poor Workflow' diagram.
  - Emphasize how the movement would be traced through direct observation and process mapping.
  - Point out how the repositioning of the printer (small change of a movable object) and workstation rearrangements eliminated wasted movement in the 'Good Workflow' diagram.
  - Indicate that staff members working on a daily basis in the 'Poor Workflow' resolve themselves to work around the wasted movement because it feels comfortable and routine.
  - Emphasize that the approach to redesigning a more efficient laboratory begins with the questioning of the familiar and routine and the thought, "I could make this easier by doing this." Indicate that floor plans and process maps are the tools used to explore the possibilities.

Step 2. Introduce the activity 5 min

- Project Slide 1.22 to provide an overview of the activity.
- Explain that they will redesign their laboratory layout by repositioning a moveable item(s) on their floor plan to find a design that better supports their workflow path.
- Ask participants to erase the pencil-marked workflow from their floor plans that they previously traced during the *Mapping Out the Floor Plan of Your Laboratory* activity.
- Explain that once the movable items are repositioned and glued, participants should trace the new work flow path created by the redesigned layout.
- Inform participants they have 10 minutes to redesign the layout of their laboratory.

Step 3 Monitor the activity — 10 min

- Walk around to provide individual coaching to participants.

Step 4. Debrief the activity — 5 min

- Ask participants to share any insights or challenges they encountered with this activity.

Step 5. Discuss next steps upon returning to the laboratory — 10 min

- Distribute and discuss Job Aid 2: Redesigning Your Laboratory Action Plan.
- Consider assigning participants the redesign of their laboratory as an improvement project. Address any questions or concerns participants may have.

Step 6. Conclude the Activity — 5 min

- Remind participants to place their moveable cut-outs into the baggie or envelope for safe-keeping.
- Emphasize that the approach to redesigning a more efficient laboratory begins with the thinking, "I could make this easier by doing this."
- Highlight or reiterate the key messages below.
- Make certain participants achieved the objectives of the activity.

KEY MESSAGES

- Managers can use the floor plan to explore possible redesign layouts and initially asses the effect on the workflow path by tracing the movement.
- With the simple rearrangement of a few key laboratory movable items, the laboratory's efficiency of work flow can be greatly improved.
- Redesigning a more efficient laboratory begins with thinking, "I could make this easier by doing this."

☑ ACTIVITY OBJECTIVES MET?

Can they:

- Recognize the qualities that contribute to a good workflow versus a bad workflow?
- Propose a change by repositioning a movable item in their floor plan?
- Trace the new workflow path resulting from the repositioned item?

➢➢ Connections and Applications

- The redesign of a more productive and efficient laboratory involves evaluating the current layout and workflow path, input from the staff, and exploring possible layout designs that better support the laboratory processes
- A laboratory layout (structure) and workflow path designed around the steps of a process will result in reducing wasted time, effort, and movement, thus increasing productivity and efficiency (outcome).
- In addition to the allotted laboratory space, consideration must be given to the design of the layout with regard to the workflow path and processes
- Waste (time, effort and movement) is most often caused by the layout of the department and poor process design.
- Direct observations include staff members walking and work patterns as well as the flow of specimens from collection through releasing results.
- It is essential to engage the laboratory staff when making changes. Their support is crucial in making the changes successful. An empowered work force will begin to view their daily work in the context of making process improvements.
- To gauge the effectiveness of the outcome resulting from change, quality indicators must be used to collect baseline data reflecting the existing conditions before the proposed change is implemented.

Job Aid 1: Guiding Principles for Laboratory Layout

Guiding Principles for Laboratory Floor Plan Design

Laboratory space should be:

- Adequate in size for testing needs
- Organized into distinct work areas
  - sample reception
  - sample preparation
  - testing
  - results production
  - results validation and release
  - reagent and consumable storage
  - data / filing / records (non-testing areas)
- Be clean & uncluttered
  - Expired and unused supplies and reagents should be discarded
  - All non-functioning / out-dated equipment should be removed from the laboratory and store room
- Neat and well-lit

Electrical requirements:

- Extension chords should positioned safely out of the walkways
- All analyzers should have surge protectors
- All analyzers should have UPS (Uninterruptible Power Supply)

Water:

- Lab personnel should know the water type and usage requirements for the equipment in their labs

Equipment should:

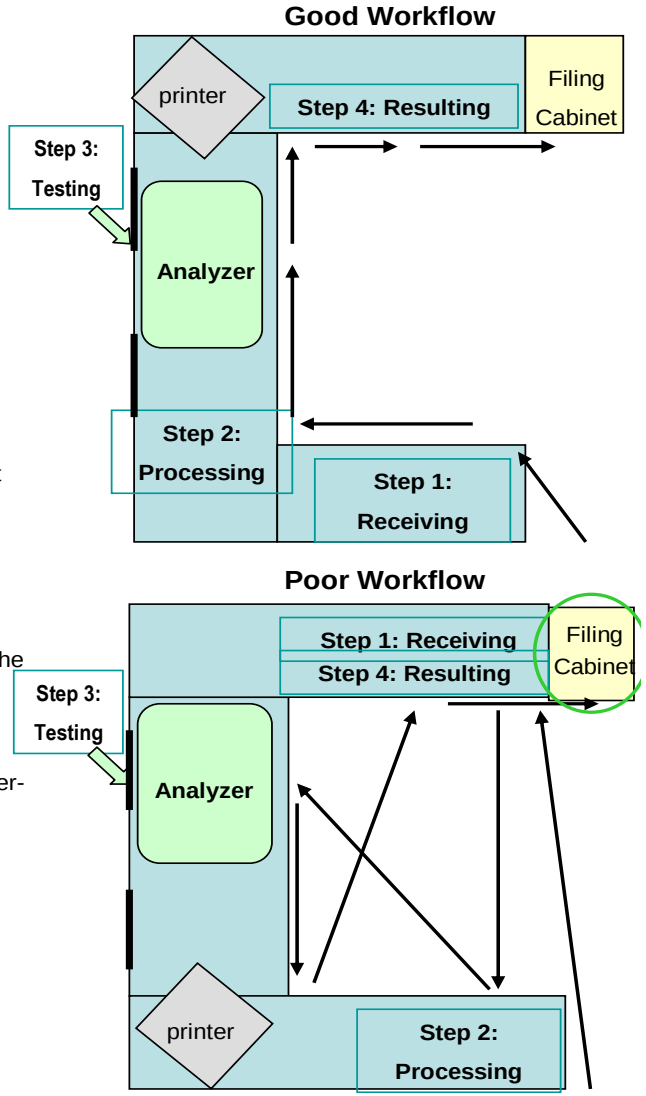
- be placed to facilitate smooth and efficient workflow
- have sufficient operational area
- be safely positioned
- avoid placement in high traffic area
- avoid placement that requires frequent moving for cleaning and maintenance
- avoid direct placement under air-conditioners
- avoid nearness to sinks and wet benches
- avoid direct proximity to heat source (instrument or sunlight)
- allow adequate space between instrument back and wall

Supplies and reagents should:

- Have dedicated cabinet or shelf space for storage (at each workstation, if possible)
- Be arranged to facilitate compliance with the First-Expiry-First-Out rule

Refrigerators should:

- be positioned to avoid disturbance and over-heating
- be well organized and not over-stocked
- only hold items in use or planned for use
- not have close mixing of samples and reagents
- not hold food or drink



Job Aid 1: Guiding Principles for Laboratory Layout

Guiding Principles for Workstation Set-up

Required equipment and supplies

- Personal protective equipment – gloves, masks, sharps containers, etc.,
- Waste Disposal Containers
- Office supplies – pencils, paper, stapler, scissors, etc.
- Materials, consumables, and reagents required to perform maintenance
- Materials, consumables, diluents, and reagents required to perform testing
- Ancillary equipment required for testing (such as pipettes, pipette tips, timer, mixer, vortex, rotator)
- Specimen racks to organize workload
- Equipment Operator's Toolkit

All documentation readily available

- Equipment Owner's Manual
- Equipment Manufacturer's Data (serial number, contact information)
- Logs – reagent, QC, equipment maintenance & service, environmental (temperature, humidity, etc.) and corrective action
- Standard Operating Procedures (SOPs)
- Critical Values
- Population Reference ranges (if available)
- Clinician contact information

Optimal workstation Layout

- Follow the sequence of the process
- Place all main instruments together arranged in a semi-circle (or U-shaped) work cell (versus individual workstations spread in various rooms). This arrangement allows a single operator to keep all analyzers running.
- Place highest-volume chemistry and hematology analyzers closest to laboratory entrance to minimize walking.
- Place back-up equipment, if available, behind main analyzers.
- If more than one centrifuge is available, decentralize and place adjacent to the analyzer's workstation. Be aware of possible interference to the analyzer caused by vibrations from operating the centrifuge.
- Specify a permanent location for each item (equipment, tools, and supplies). Mark the outline of each item (i.e., the shape of scissors, stapler) with colored tape so a missing item will be noted & easily replaced

Optimal Work Process

- Define the standard work / operating procedures (SOP) and specify the sequence of steps as well as the key actions an operator must take to ensure high quality
- Utilize constant workflow or small batches to decrease turn around time (TAT) and operator waiting time
- Analyzing specimens using a one-piece flow process (first in/first out) allows earlier detection of quality problems

Job Aid 2: Redesigning Your Laboratory Action Plan

Redesigning Your Laboratory

1) Select an area of the laboratory to redesign.
2) Create an accurate floor plan of the selected area that diagrams the existing conditions. Include the placement of any utilities such as electrical outlets, data outlets (telephone and computer), and floor drains.
3) Generate an equipment list. Collect information about the equipment in the selected area. An excellent resource is the instrument operator's manual.

Manufacturer Name & Model Number	**Dimensions** (width, depth, height, clearance requirements)	**Electrical** (volts, amps, emergency power, UPS)	**Data** (computer connections)	**HVAC** (heat generated in BTU's, venting requirements, air exchange requirements)	**Plumbing** (type of water, drain, vacuum)

4) Map the processes that contribute to the workflow path in the selected area through direct observation.
    a. Several observations are required to accurately map the process
    b. Staff should be encouraged to contribute ideas and sharing information on how they do their work.
    c. During the direct observation:
        i. Understand that staff will be uncomfortable while being observed.
        ii. Explain to the staff that you want to learn from them.
        iii. Do not interfere with or modify their work.
        iv. Limit questions.
        v. Record all actions.
        vi. Thank them after finishing the observation.
    d. Compile the information from the observations and create a process map.

Step	**Action taken**	**Person Responsible for Action**

Job Aid 2: Redesigning Your Laboratory Action Plan

5) Trace the current workflow path onto the current floor map.
    a. Look for areas of waste.
        i. Excess movement because the work stations do not follow the sequence of the mapped process.
        ii. Excess waiting, processing or transportation time because workstation layout does not support the workflow or the action taken does not add value to the testing process.

6) Redesign the selected area
    a. Collect a baseline measurement using a quality indicator (QI) such as turn-around time to measure outcome (the effectiveness of the change). The baseline data is based upon the current conditions (layout and process).
    b. Review the floor plan layout and processes and suggest changes.
        i. Consider the removal of all unnecessary equipment and supplies (broken or no longer in use).
        ii. Review Job Aid 1, "*Guiding Principles for Laboratory Floor Plan Design*" and *Guiding Principles for Laboratory Setup and Workflow*."
    c. Trace the workflow path using the revised layout and process map.
    d. Propose suggested changes to both upper management and laboratory staff. Solicit feedback by actively engaging staff.
7) Institute changes in layout or workflow.
    a. Collect data using the same QI to measure the effectiveness of the changes.
    b. Reassess and look for additional areas to improve. If additional changes are implemented, recollect QI data.
8) Report findings to upper management and staff members (i.e. staff meeting).
9) Include revised process map and layout into the laboratory's quality manual.
10) Consider improving another area through redesign.

ACTIVITY Making a Cup of Tea Module 1

PURPOSE:

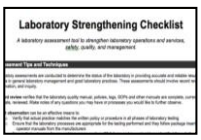
Simple, daily tasks can easily become laborious when the needed supplies and materials are not readily available. This activity demonstrates that organization is the key to performing any daily activity, including making a cup of tea.

RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slide: 1.24
- ❑ Two sets of the following required items for making tea:
  - Cup and saucer
  - Hot water
  - Tea bag
  - Creamer and sugar
  - Spoon (or stirring stick)
- ❑ Container (pitcher, jug, or thermos) to retrieve water from a different location
- ❑ Trashcan
- ❑ Timer or watch
- ❑ Flipchart and markers

RESOURCES FOR PARTICPANT:

None

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.1 Organize the laboratory and coordinate work space to allow for smooth, efficient service operations 1.2 Design workflow for optimal productivity 2.4 Ensure appropriate physical work environment for testing
Checklist Items 	12.3 Is each individual workstation maintained free of clutter and set up for efficient operation? 12.4 Is the physical work environment appropriate for testing?

This activity is related to the following activities:	
	Cross-cutting: Workstation Set-up

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Introduce the activity	2 min	Slide 1.24	
2	Conduct the activity (organized workstation)	3 min	One set for tea Timer Trashcan	
3	Conduct the activity (disorganized workstation)	8 min	One set for tea Container Timer Trashcan	
4	Debrief the activity	5 min		
5	Conclude the Activity	2 min		
	TOTAL TIME:	**20 min**		

PROCESS

Preparation

- Set up two workstations: one organized, the other disorganized. In the organized workstation, place one set of the above required seven items together at the station. In the disorganized workstation, place only the tea bag and the container. Have all the other items scattered throughout the room or hand some items to the other participants to hold or "store" until the volunteer requests them.
- Consider using a hotel's prepackaged packet containing creamers, sugars, and stirring sticks to simplify the set-up.
- (Optional) If this activity is scheduled near a tea break during training, you may decide to use this time to demonstrate the organized workstation.

Step 1. Introduce the activity 2 min

- Explain that organization is the key to efficiently performing all the tasks at the workstations, including instrument startup, shutdown, routine maintenance, testing, and quality control.
- Project Slide 1.24 to introduce the activity.
- Inform participants that this activity demonstrates that organization is the key to performing any daily activity, including making a cup of tea. Explain that we will time how long it takes to make a simple cup of tea in an organized workstation and a disorganized workstation. In other words, the turn-around times (TAT) will be measured.

Step 2. Conduct the activity (organized workstation) 3 min

- Ask for a volunteer to make a cup of tea.
- Time the volunteer as they make their tea.
- Write on a flipchart the completion time for this task.

Step 3. Conduct the activity (disorganized workstation) 8 min

- Ask for another volunteer to make a cup of tea.
- Hand the tea bag and container to the participant.
- Explain the other items are scattered throughout other 'workstations'. Inform the volunteer that they may request assistance from the other participants if necessary.
- Instruct the volunteer to obtain warm water using the container from the nearby restroom. This process is analogous to searching the storeroom for the item. As the volunteer leaves to obtain the warm water, pass out several needed items to the other participants in the room
- Begin timing the task as the volunteer leaves to fill the container.
- Continue timing the activity as the volunteer searches for the various required items scattered throughout the room or "stored" by the other participants at their 'workstation.'
- Remind the volunteer that they may request assistance to complete this task. Specific to the laboratory situation, this analogy represents interrupting the workflow processes at another workstation. Note the time given for this

assistance.

- Write on a flipchart the volunteer's time to complete the task. Below, write the time used for assisting the volunteer. Add the times together for the completion time.
- End the demonstration by indicating that the time spent looking for the additional items allowed the hot water for the tea time to cool affecting the quality.

Step 4. Debrief the activity 5 min

- Ask the participants what differences they noted between the organized and disorganized workstation. Highlight the time difference between the organized workstation and the disorganized workstation. Make a connection between the times for this activity to TAT in the laboratory. Emphasize how the disorganized workstation required assistance from another staff member.
- Ask what effect would occur if a separate workstation was waiting for the output from the disorganized workstation (i.e. a disorganized phlebotomy workstation).
- Ask participants what effect disorganization has on the quality of the output. Relate this to how a disorganized phlebotomy workstation increases the possibility of improperly labeled or mislabeled patient specimens.
- Share a personal story from your laboratory experience that provides a concrete example. Describe a simple activity that became laborious and time-consuming or mishandled due to the disorganized workstation set-up.

Step 5. Conclude the Activity 2 min

- Highlight or reiterate the key messages below.
- Make certain participants achieved the objective of the activity.

KEY MESSAGES

- Organization is essential for completing tasks in an efficient and productive manner. Organization removes waste, i.e. wasted time, effort and movement.
- A disorganized workstation affects the efficiency and quality (outcome) of that workstation.
- A disorganized workstation may affect other workstations by interrupting staff members from their assigned tasks or delaying the workflow process.

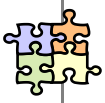
Can they:

- Recognize and discuss the affects a disorganized workstation has on productivity and efficiency?

ACTIVITY OBJECTIVES MET?

➤➤ Connections and Applications

- Frequently, key tasks, such as routine daily instrument maintenance, are not performed as scheduled because the workstation is not properly organized and needed supplies are not readily available. Tasks that should take 3-5 minutes to perform may take as long as 40 minutes if laboratorians must search for every item needed to complete the task.
- This activity provides a strong visual demonstration that organization is the key to performing any daily activity. This principle applies equally to performing all tasks at the workstation. Delays caused by searching for supplies use valuable time and makes performing routine tasks burdensome. Link this to the *Workstation Set-up* activity.



- A common quality indicator is TAT. Effective removal of waste (time, effort, movement) can be measured. Even though the disorganized workstation is performed after the organized workstation to better emphasize their differences, the times could be connected to TAT. To determine how effective a change is, a baseline measurement of the current process must be obtained initially before the proposed change is implemented. In this activity, the disorganized workstation could serve as the baseline measurement. Through this simple activity, the concepts of TAT, data collection, and data analysis can be introduced.

ACTIVITY Whisper Down the Alley Module 1

PURPOSE:

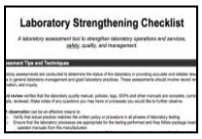
This activity demonstrates the need for written step-by-step procedures so that staff members perform tasks in a standardized manner. It highlights the difference between how verbal directions can easily be mis-communicated and how written instructions consistently convey the information accurately.

RESOURCES FOR FACILITATOR:

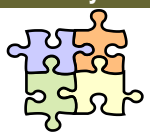
- ❑ PowerPoint slide: 1.27
- ❑ 4 Note cards
- ❑ Watch or timer

RESOURCES FOR PARTICIPANT:

None

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	2.6 Ensure Safety Manual with safety procedures for laboratory functions and possible emergencies is accessible to and reviewed by all staff 6.1 Ensure that the Quality Manual with quality assurance policies and procedures is accessible to and reviewed by all staff 6.11 Ensure that SOPs are read and understood by staff 10.1 Maintain a library of documents (policies, guidelines, SOPs, references, etc.); review and update annually
Checklist Items 	1.2 Laboratory Quality Manual Is there a current laboratory quality manual, composed of the quality management system's policies and has the manual content been communicated to, understood and implemented by all staff? 1.3 Document and Information Control System Does the laboratory have a system in place to control all documents and information from internal and external sources? 1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? 1.6 Policy and SOPs Accessibility Are policies and SOPs easily accessible/ available to all staff and written in a language commonly understood by respective staff? 1.7 Policies and SOPs Communication Is there documented evidence that all relevant policies and SOPs have been communicated to and are understood and implemented by all staff as related to their responsibilities? 4.3 Laboratory Handbook for Clients – information to users Is there a laboratory handbook for laboratory users that includes information on location of the lab, services offered, laboratory operating times, instructions on completion of request forms, instruction for preparation of the patient; sample collection including patient collected samples, transport, agreed turnaround times, acceptance and rejection criteria, availability of advice on examination and interpretation of results; lab policy on protection of personal information, laboratory complaints procedure? 4.4 Communication Policy on Delays in Service Is timely, documented notification provided to customers when the laboratory experiences delays or interruptions in testing (due to equipment failure, stock outs, staff levels, etc.) or finds it necessary to change examination procedures and when testing resumes? 5.15 Manufacturer's Operator Manual Are the manufacturer's operator manuals readily available to testing staff and, available in the language understood by staff? 8.1 Information for Patients and Users Are guidelines for patient identification,

	specimen collection (including client safety), labelling, and transport readily available to persons responsible for primary sample collection? 8.2 Does the laboratory adequately collect information needed for examination performance? 8.7 Documentation of Examination Procedures Are examination procedures documented in a language commonly understood by all staff and available in appropriate locations? 8.13. Have acceptable ranges been defined for all temperature- dependent equipment with procedures and documentation of action taken in response to out of range temperatures? 9.3 Report Content

This activity is related to the following activities:	
	Module 6: Using Standard Operating Procedures

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Introduce the activity	3 min	Slide 1.27	
2	Play the game (Round 1 – message communicated verbally)	5 min	Note cards Timer	
3	Play the game (Round 2 –message communicated in writing)	7 min	Note cards Timer	
4	Debrief the activity	3 min		
5	Conclude the activity	2 min		
	TOTAL TIME:	**20 min**		

PROCESS

Preparation

- Create two long sentences, each about the same length. Some sentence examples to consider are:
  - Ensure enough stain is added to keep the slides covered throughout the entire staining step.
  - Examine a minimum of 100 fields before the smear is reported as negative.
  - Place each reagent tube in the workstation and close the cover to protect the reagent from light.
  - Leave a tube of distilled water with the sample holder up to protect the sample injection probe from the formation of salt deposits.
  - Return any unused antigen to the original glass vial after use.
  - Gently mix reagents and QC material by inversion to thoroughly resuspend contents.
- Write two copies of each sentence on a separate note card. Use one sentence (2 copies) for each round of the game.

Step 1. Introduce the activity 3 min

- Project Slide 1.27 to introduce the activity.
- Create two teams by dividing the participants into two groups.
- Ask each group's participants to stand in a line.
- Explain how the game, Whisper Down the Alley (also known as Telephone) is played.

Step 2. Play the game (Round 1 - message communicated verbally) 5 min

- Hand the first note card with one of the sentences to the first person in each group.
- Instruct them not to read the card until the timer starts.
- Start the timer and instruct the first person to read the card and whisper the sentence into the next person's ear.
- Have each person whisper the message as they understand it to the next person until it reaches the last person in line.
- Note the time taken for the activity.
- Have the last person state the message out loud.
- State the original sentence and compare it to the last person's message, while highlighting the mistakes.

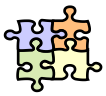
Step 3. Play the game (Round 2 -message communicated in writing) 7 min

- Instruct participants to repeat the activity. Challenge the participants to see how much time can be reduced from Round 1 while the accuracy of the message is improved.
- State the ground rules:
  - They may use any supplies available in the room.
  - They may not broadcast the message (by verbally announcing it to a large

group).

- Allow participants 3 minutes to come up with a strategy.
- Start the round by giving the second note card to the first person in the line.
- Start the timer.
- At the end, note the time taken in the activity.
- Ask a volunteer from each group to repeat the message.

Step 4. Debrief the activity 3 min



- Contrast the differences between the 2 rounds.
- Relate the activity to the importance of written procedures (SOPs) in the laboratory. Link this concept to the activity, *Using Standard Operating Procedures*.

Step 5. Conclude the Activity 2 min

- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- When communicating important information, do not rely on verbal communication; use written instructions.
- Laboratory documents provide the staff with complete, accurate, and consistent information.

Can they:

- Convey important laboratory information in a manner that is accurate, error-free, and understandable to the recipient?

ACTIVITY OBJECTIVES MET?

➤➤ Connections and Applications

- There is no one fixed strategy for the second round. One possible way is to write the message onto a flipchart page for all to read. Another way is to tape the note card to the wall. Whatever strategy is chosen, relate the strategy to the communication of work instructions. Connect the communication pathway (verbal – inconsistent/inaccurate vs. written-consistent/accurate/standardized) to the following checklist items:
  - 1.3 – Are policies and standard operating procedures (SOPs) for laboratory functions current and available and approved by an authorized person?
  - 1.4 – Are policies and SOPs easily accessible/available to all staff?
  - 1.6 – Is there a current laboratory quality manual, understood and implemented by all staff that contains the quality management system's policies & procedures?
  - 5.7 – Is routine preventative maintenance performed on all equipment and recorded according to SOPs?
  - 9.10 – Are SOPs for specific testing present and easily accessible at the workbench?
- To emphasize the importance of accurate and consistent information, choose

Connections and Applications

the sentences used in the game from a package insert or SOP. A sentence such as, "Immediately interpret test results after the 8 minute incubation is complete," will demonstrate how miscommunicated information will affect the testing quality.

- Documents (policies, processes, and procedures) communicate to staff written information and work instructions. They are the best resource for accurate information.
- When this information is not available and accessible, staff members will:
  - Ask someone else and perform the work according to the other's instructions.
  - Create their own solutions to perform the work.
  - Ignore the problem.
- Standardization of work instructions ensures the work is consistently performed in the same manner every time. **Standard** operating procedures provide the written resource to achieve this consistency.
- Development of written standardized procedures takes time and effort (analogous to the 3 minutes given to develop the strategy in Step 3 of this activity). However, the overall time devoted to the production of accurate information will be less than the time spent to address incorrectly performed and released results.

ACTIVITY What are the Benefits of a Standardized Process? Module 1

PURPOSE:

Well-defined processes assure the work is performed the same way each time. The benefits of standardizing the process are:

- It makes errors more difficult to commit
- It makes errors more visible if committed
- It absorbs errors that are committed.

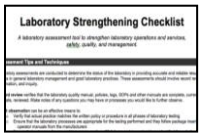
In this activity, a demonstration is used to illustrate these benefits and how they relate to the quality of patient care.

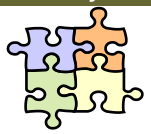
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slide: 1.28
- ❑ Tool: Process Steps
- ❑ Tape
- ❑ Flipchart and markers

RESOURCES FOR PARTICIPANT:

None

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.2 Design workflow for optimal productivity 6.10 Customize site-specific SOPs as needed
Checklist Items 	1.2 Laboratory Quality Manual Is there a current laboratory quality manual, composed of the quality management system's policies and has the manual content been communicated to, understood and implemented by all staff? 1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? 1.6 Policy and SOPs Accessibility Are policies and SOPs easily accessible/ available to all staff and written in a language commonly understood by respective staff? 1.7 Policies and SOPs Communication Is there documented evidence that all relevant policies and SOPs have been communicated to and are understood and implemented by all staff as related to their responsibilities? 4.4 Communication Policy on Delays in Service Is timely, documented notification provided to customers when the laboratory experiences delays or interruptions in testing (due to equipment failure, stock outs, staff levels, etc.) or finds it necessary to change examination procedures and when testing resumes?

This activity is related to the following activities:	
	Cross-cutting: Process Mapping Module 1: How Do You Assign Personnel to Tasks? Module 6: Using Standard Operating Procedures

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain what a process is	3 min		
2	Introduce the demonstration	5 min	Slide 1.28 Tool	
3	Conduct the demonstration	5 min	Tool	
4	Modify the demonstration to illustrate the benefits	5 min	Tool	
5	Debrief the demonstration	15 min		
6	Conclude the Activity	2 min		
	TOTAL TIME:	**35 min**		

PROCESS

Preparation

- Print ten copies of Tool: Process Steps.
- Tape three flipchart pages or pieces of paper on the wall. Mark them as follows:

Workstation #1 Check mark the following steps: ❑Step 1 ❑Step 2 ❑Step 3	**Workstation #2** Check mark the following steps: ❑Step 4 ❑Step 5	**Workstation #3** Check mark the following steps: ❑Step 6 ❑Step 7

- Create a workstation assignment template. Insert your name under Workstation #1. Insert the names of the three volunteers who will be participating in the demonstration as follows:

	Workstation #1	Workstation #2	Workstation #3
Day 1	(*insert the name of the facilitator*)	(*insert the name of volunteer #1*)	(*insert the name of volunteer #2*)
Day 2	(*insert the name of the facilitator*)	(*insert the name of volunteer #1*)	(*insert the name of volunteer #3*)

Tape the workstation assignment template on the wall near the three workstation pages.

Step 1. Explain what a process is — 3 min

- Explain that mapping a process describes who does what and when. It describes what the activities are, the sequence in which they are to be performed, and who is responsible.
- Refer to the workstations and explain that there are seven steps in this process and the sequence is based upon the numerical order of the steps.

Step 2. Introduce the demonstration. — 5 min

- Project Slide 1.28 to introduce the activity.
- Ask for three volunteers to come forward to stand near the taped flipchart pages. Each volunteer should bring a pen or pencil with them. Assign the volunteers to a workstation using the workstation assignment template.
- Explain that you have designed a process that is comprised of seven steps and has been standardized so that specific steps are performed at three separate workstations. Emphasize that the process sequence must be completed in order (e.g., Step 6 can not be performed until step 5 is completed).
- Show Tool: Process Steps to the class. Explain that as each step is completed, the box will be check marked (tick mark the box) by the person assigned to the workstation who is responsible for completing the step.

- Explain that you will be in charge of Workstation #1 and stand next to the flipchart paper labeled "Workstation #1". Ask the volunteers assigned for Day 1 to stand at their workstation. Ask the third volunteer to stand off to the side. Explain that when Day 2 is announced, volunteers #2 and #3 will switch.
- Reemphasize how this process is mapped out by indicating who does what and when for this demonstration. Ask each volunteer to state their assignment.

Step 3. Conduct the demonstration 5 min

- Begin check marking Tool: Process Steps.
  - Checkmark steps 1 through 3 and give the worksheet to the next workstation.
  - The volunteer at Workstation #2 checkmarks steps 4 and 5 and gives the worksheet to the next workstation.
  - The volunteer at Workstation #3 checkmarks the remaining steps.
- Ask workstation #3's volunteer to show that all seven steps on the Tool were check marked.
- Continue the process 2 more times including showing the class the completed worksheet.

Step 4. Modify the demonstration to illustrate the benefits 5 min

Modification 1

- Announce that Day 1 is complete and it is now Day 2. If volunteers #2 and #3 do not automatically switch places, suggest they look at the workstation assignment sheet.
- Provide no further explanation but immediately begin check marking Tool: Process Steps in the same manner.
- Continue the process two more times.

Modification 2

- Checkmark steps 1 and 2 only and omit check marking process step 3. Do not announce this oversight but hand the worksheet to Workstation #2's volunteer.
- Continue omitting process step #3 check mark until either volunteer notices the omission.
- Instruct the volunteer to return the incomplete worksheet to you (Workstation #1) to check mark process step 3.

Step 5. Debrief the activity 15 min

- Write on the flipchart, "Benefits of Designing and Standardizing a Process." Facilitate a discussion so that participants identify the benefits from the demonstration. List the responses on the flipchart. Refer to the "Connections and Applications" portion of this activity for key points to emphasize.
- Ask participants how the third volunteer, when assigned to Workstation #3, was able to immediately complete the assigned process duties.
- Ask the class what effect would have occurred in the process if the third volunteer was asked to wait outside of the classroom while the demonstration was initially explained.
- Ask the volunteer, who noticed the omission during the second modification, why it was immediately apparent, and ask how he/she knew to hand the

worksheet back to the person assigned to Workstation #1.

- Ask participants how the confidence in the laboratory would be affected if the ordering doctor notified the laboratory about the process step #3 omission instead of the error being addressed within the laboratory before releasing results.
- Create connections between this simple, abstract process demonstration to more complex and concrete processes within the laboratory, such as specimen rejection and critical result handling/notification.

Step 6. Conclude the Activity 2 min

- Highlight or reiterate the key messages below.
- Make certain participants achieved the objectives of the activity.

KEY MESSAGES

- The benefits of standardizing the process are:
  - It makes errors more difficult to commit
  - It makes errors more visible if committed
  - It absorbs errors that are committed.
- A well-designed and standardized process improves the quality of patient care by preventing or immediately addressing errors.

Can they:

- Identify the benefits of a well-designed and standardized process?
- Recognize that preventing or immediately addressing errors improves the quality of patient care provided by the laboratory?

ACTIVITY OBJECTIVES MET?

Connections and Applications

- Well defined processes assure the work is performed the same way each time. A process describes the entire sequence of activities. A procedure states the instructions for how to perform one activity.
- The process must be designed and standardized to create standardized work; "one way" of doing things. Standardization is achieved by providing the work instructions (Standard Operating Procedures), monitoring and enforcing them.
- The goals of a successfully designed process are:
  - Make errors difficult to commit (workstation's duties were clearly defined and understood by all staff members, the sequence of steps were clearly outlined).
  - Make errors visible if committed (sequence of duties and personnel responsible for completing them were defined and understood by all personnel).
  - Absorb errors that are committed (omission was noted immediately and returned to the workstation responsible before the report was released).
- The processes and procedures must be understood by all staff members. The weekly staff meeting provides a perfect opportunity to communicate this information. Staff members must have procedures readily available, have read the procedures, and be held accountable for following them. To enforce accountability, a record should be retained that provides documentation

Connections and Applications

showing that the staff member has read and understood the procedure. Link this to the *Using Standard Operating Procedures* activity.

- Well defined processes and procedures will assist with the orientation and training of newly hired staff members. Additionally, they can be used to assess competency.
- Mapping out a process will identify what documents and records must be available. Identifying the possible pitfalls at each step will assist with designing a successful process. Auditing the process using quality indicators will assist with determining the success of the design or provide ways to improve upon the design. Link this to the *Process Mapping* activity.

Defining the duties of a workstation and using a duty roster will create a more efficient work environment. Link this to the *How Do You Assign Personnel to Tasks* activity.

- When errors are prevented or immediately addressed, the quality of patient care improves.

Tool: Process Steps

Standardized Process in the Laboratory

- ☐ Procedure Step # **1**
- ☐ Procedure Step # **2**
- ☐ Procedure Step # **3**
- ☐ Procedure Step # **4**
- ☐ Procedure Step # **5**
- ☐ Procedure Step # **6**
- ☐ Procedure Step # **7**

ACTIVITY How Do You Assign Personnel to Tasks? Module 1

PURPOSE:

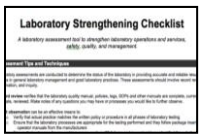
A duty roster helps a manager coordinate tasks among laboratory staff to better serve customers. It assigns personnel to workstations with well-defined tasks and responsibilities. In this activity, participants learn to create a duty roster based on a testing menu, workload, personnel available, and operational hours.

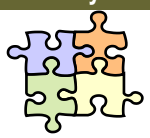
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.31 to 1.38
- ❑ Flipchart and markers
- ❑ Pencils with erasers

RESOURCES FOR PARTICIPANT:

- ❑ Handout 1: Duty Scheduling Scenario (118)
- ❑ Handout 2: Workload Statistics (119)
- ❑ Handout 3: Workstation Assignments (120)
- ❑ Worksheet: Duty Roster Schedule (121)
- ❑ Job Aid: Implementing a Duty Roster (122)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.2 Design workflow for optimal productivity 1.3 Prioritize and assign work according to personnel skill level, workloads, and completion timeframe 1.11 Implement measures to motivate staff to improve quality of work and productivity (e.g., training, job rotation, employee of the month, thank-you letter, etc.)
Checklist Items 	3.1 Duty Roster And Daily Routine Does the laboratory have a duty roster that covers normal and after hours? 3.2 Organizational Chart and External/Internal Reporting Systems Is an organizational chart available that indicates the relationship between the laboratory and its parent organization?

This activity is related to the following activities:	
	Cross-Cutting: Workstation Set-Up Module 1: Creating a Management Calendar Module 1: Process + Structure = Outcome Module 1: Competency Assessment Module 1: Creating a Personnel File

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain what a duty roster is and why it is important	10 min	Slides 1.31 to 1.35	
2	Demonstrate how to create a duty roster with a simple example	10 min	Slide 1.36	
3	Introduce the activity	5 min	Slide 1.37 Handout 1 Handout 2 Worksheet	
4	Conduct the activity	20 min	Handout 1 Handout 2 Worksheet	
5	Discuss the selected roster	10 min	Handout 3 Worksheet	
6	Create "what if" scenarios	10 min	Worksheet	
7	Debrief the "what if" scenarios	5 min		
8	Debrief the activity	10 min	Slide 1.38 Job Aid	
9	Conclude the Activity	5 min		
	TOTAL TIME:	**85 min**		

PROCESS

Preparation

- Print additional copies of Worksheet: Duty Roster Schedule to accommodate several attempts and "what if" scenarios by the participants.
- Write on a flipchart page the four factors that affect duty rosters. Leave sufficient room to add participant's responses below each factor.
  - Testing menu
  - Workload
  - Personnel available
  - Operational hours
- Draw the duty roster template on a flipchart sheet.

	Mon	Tues	Wed	Thurs	Fri
Staff A					
Staff B					
Staff C					

Step 1. Explain what a duty roster is and why it is important 10 min

- Project Slide 1.31 to introduce the activity.
- State that a duty roster designates personnel to specific workstations. It defines who is responsible for completing 'what' and 'when.'
- Project Slides 1.32 to 1.33 to provide examples of a staffing schedule and workstation duty roster for the participants.
- Project Slides 1.34. Ask participants to explain the difference between staffing schedule (routinely provided to the hospital administration indicating laboratory coverage) and a duty roster (designating specific laboratory personnel to specific workstations). Facilitate a discussion that compares and contrasts the utility of both.
- Stress the importance of clearly defining and listing the tasks associated with that workstation's assignment. These tasks should be posted near the workstation and/or near the duty roster. Link this to the *Workstation Set-Up* and *Process + Structure = Outcome* activities.
- Emphasize that a duty roster ensures essential tasks are completed, duplication is avoided, and designated personnel are competent to perform them within the allotted timeframe.
- Project Slide 1.35. Ask participants how each factor would affect the duty roster. As participants provide responses, list those responses on a flipchart page under the appropriate factor.

Step 2. Demonstrate how to create a duty roster with a simple example 10 min

- Project Slide 1.36 and present the scenario. Facilitate a discussion on how to create a duty roster. Highlight the scenario information that corresponds to

the 4 factors.

- Refer to the previously drawn duty roster template as indicated in the preparation step of this activity

Scenario

TEST MENU	WORKLOAD
HIV Rapid Testing	75 per day
RPR Syphilis Serology	40 per day
Malaria Smear	15 per day
Phlebotomy	80 per day

- Personnel - three staff members competent in all areas
- Operational Time - 8:00 am to 4:00 pm, Monday through Friday
- More than one task can be assigned to a staff member
- Symbols used in the duty roster:

  P= Phlebotomy

  H = HIV

  R= RPR

  MS = Malaria Smear

- Create a duty roster for the upcoming week:

	Mon	Tues	Wed	Thurs	Fri
Staff A					
Staff B					
Staff C					

- Populate the duty roster template from participants' responses.

Step 3. Introduce the activity 5 min

- Project Slide 1.37 to provide an overview of the activity.
- Distribute or refer participants to Handout 1: Duty Scheduling Scenario, Handout 2: Workload Statistics, and Worksheet: Duty Roster Schedule.
- Indicate to the participants that they are employed as the lead tech or supervisor for this laboratory with the responsibility of scheduling and assigning personnel to tasks and duties.
- Review the scenario from Handout 1 as a class. Integrate Handout 2 into the scenario (i.e. Wednesday's ART Clinic is reflected in the CD_4 testing performed).

Step 4. Conduct the activity 20 min

- Divide the participants into groups of 2 persons. Each group will create a duty roster for the next two weeks based on the scenario in the handout.
- Inform participants they have 20 minutes to complete the assignment.
- Walk around to coach and provide assistance to the groups.
- Select one group's roster to share with the class.

Step 5. Discuss the selected roster — 10 min

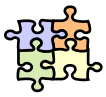
- Have the group explain to the class how they developed their roster.
- Ask other groups for suggestions or alternatives.
- Distribute or refer participants to Handout 3: Workstation Assignments and integrate the duties based upon skill level using the selected roster.
  - Present the following: If 80% of the workload is received by 11am, then what are the phlebotomist and lab aide's responsibilities for the remainder of the day?
  - Facilitate a discussion about job descriptions for each level of personnel. When duties for the workstation are being defined, the manager must lay out all tasks that should be performed and assign them accordingly to the responsibilities outlined in the job description.
  - Illustrate how duties can be assigned based upon skill level. Ask participants to review the "Cross-check" section in Handout 3. Guide the discussion so that participants consider how to effectively manage the task, 'filing of results' (a non-technical yet time-consuming duty) with available personnel.
  - Consider walking the class through a day from the selected roster using the duties defined for the workstations. Describe the activity that one would see occurring throughout the laboratory as the day progresses.

Step 6. Create "what if" scenarios — 10 min

- Build upon the original scenario, begin "what if" scenarios, one at a time.
  - State that Technologist C is not competent in blood bank, chemistry, and microbiology
  - Indicate that at the beginning of the first week, the Phlebotomist requested a day off for the upcoming Friday (the first week).
  - Describe how after the participants arrive at work on Thursday, they receive a phone call from the Laboratory Aide. The Aide informs them that he is ill and will be unable to work today (the first Thursday) or tomorrow (the first Friday).
- For each "what if" scenario, facilitate a discussion about how the original roster should be modified to accommodate each new scenario.

Step 7. Debrief the "what if" scenarios — 5 min

- Discuss Technologist C's impact on the duty roster. Highlight the importance of training this staff member.
- Discuss the impact of reduced staff levels for either planned (requested day off) or unplanned (call-out) events.
  - Emphasize how the duty roster provides a quick visual assessment of available staff.
  - Link this to *Creating a Management Calendar* activity to organize and coordinate both personnel and managerial duties.



Step 8. Debrief the activity — 10 min

- Indicate that the use of a duty roster will reveal areas of weakness in

competency and training.

- Stress the importance of starting the day in a productive manner and even distribution of the workload throughout the day.
- Project Slide 1.38. Emphasize that the duty roster can serve as an investigative tool to address issues. It is a record of the past that documents which personnel were responsible for completing assigned workstation duties.
- Distribute or refer participants to Job Aid: Implementing a Duty Roster. Discuss ways a lab manager can introduce and successfully implement a duty roster at his/her work site.
  - Emphasize the importance for staff members to feel they have voice (input) in the duty roster.
  - Discuss the impact a duty roster will have on staff morale.
  - Consider a role play situation in which a manager successfully introduces, invites input, or defines/enforces expectations with their staff.

Step 9. Conclude the Activity 5 min

- State that to have an organized, detailed, and well thought-out duty roster will result in the best service and utilize staff effectively and efficiently. Staff will feel more secure about their job performance with defined duties and clear expectations.
- Highlight or reiterate the key messages below.
- Make sure participants achieved the objectives of this activity.

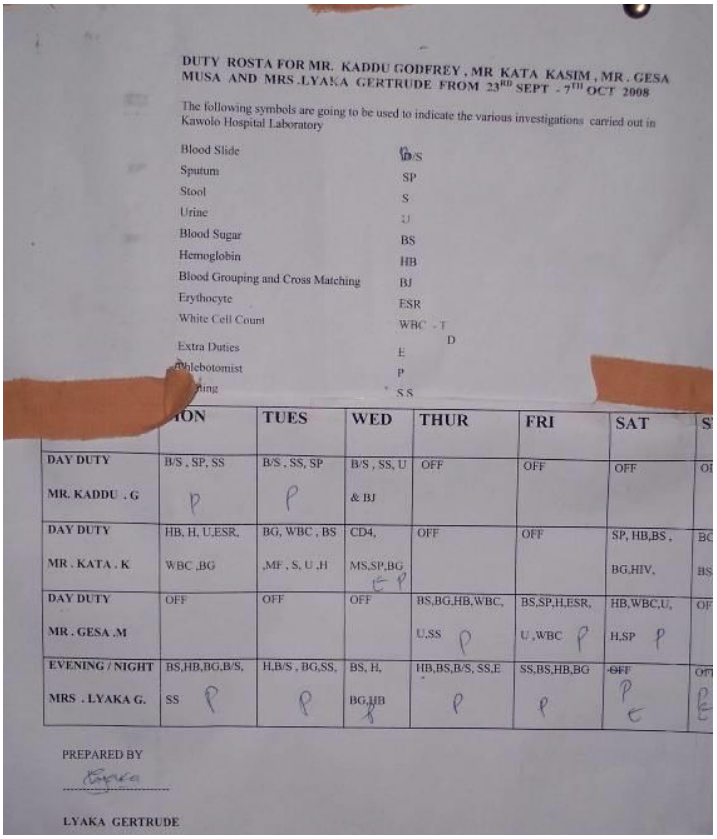
KEY MESSAGES

- An organized, detailed, and well thought-out duty roster will increase productivity, efficiency, and morale.
- Four factors influence the duty roster: testing menu, workload, personnel available (number of staff, skill level, and hours worked), and operational hours.
- A duty roster provides visual access to accommodate changes affecting operations.

ACTIVITY OBJECTIVES MET?

Can they:

- Assign personnel to tasks by assessing workload, staff availability, and hours of operation?
- Reschedule changes to address encountered problems or requests?



DUTY ROSTA FOR MR. KADDU GODFREY , MR KATA KASIM , MR . GESA MUSA AND MRS .LYAKA GERTRUDE FROM 23RD SEPT - 7TH OCT 2008

The following symbols are going to be used to indicate the various investigations carried out in Kawolo Hospital Laboratory

Blood Slide	B/S
Sputum	SP
Stool	S
Urine	U
Blood Sugar	BS
Hemoglobin	HB
Blood Grouping and Cross Matching	BJ
Erythocyte	ESR
White Cell Count	WBC - T D
Extra Duties	E
Phlebotomist	P
ding	S.S

ION	TUES	WED	THUR	FRI	SAT	S
DAY DUTY MR. KADDU . G	B/S , SP, SS	B/S , SS, SP	B/S , SS, U & BJ	OFF	OFF	OFF	OF
DAY DUTY MR . KATA . K	HB, H, U,ESR, WBC ,BG	BG, WBC , BS ,MF , S, U ,H	CD4, MS,SP,BG	OFF	OFF	SP, HB,BS , BG,HIV,	BC BS
DAY DUTY MR . GESA .M	OFF	OFF	OFF	BS,BG,HB,WBC, U,SS	BS,SP,H,ESR, U ,WBC	HB,WBC,U, H,SP	OF
EVENING / NIGHT MRS . LYAKA G.	BS,HB,BG,B/S, SS	H,B/S , BG,SS,	BS, H, BG,HB	HB,BS,B/S, SS,E	SS,BS,HB,BG	OFF	OFF

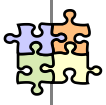
PREPARED BY

LYAKA GERTRUDE

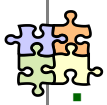
Posted Duty Roster

Connections and Applications

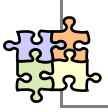
- The efficiency or inefficiency at the start of the day will cascade and affect the workload throughout the remainder of the day. It is important to communicate and monitor start-of-shift tasks, including the expected time for completion.
- Know the peaks and troughs in daily workload patterns to help balance and coordinate assigned daily tasks.
- Delays in the completion of tasks should be documented in the appropriate corrective action log. If delays are extended, they should be communicated to the laboratory supervisor and, when appropriate, to the ordering physician.
- How one utilizes the strengths and abilities of one's staff will impact how the personnel coordinate tasks with one another and establish a daily routine.
- If you observe a staff member who consistently completes start of shift times effectively, ask him to outline how he coordinates his activities to share at a staff meeting. For example, if aliquots of QC material need to thaw for 15 minutes, he may reveal that his first step is to remove aliquots from the freezer while concurrently recording the freezer's temperature. Next, he performs and documents all preventative maintenance (PM) as the QC material thaws. Lastly, he performs QC on the instrument. Compare this approach to one in which a tech first records the temperature, begins PM's, returns to the freezer to remove aliquots, and then must wait for the QC material to thaw.
- A manager must always balance and prioritize tasks with available staff, with the realization that the patients' needs receive the highest priority. The calendar, in conjunction with the duty roster, provides a quick visual account and allows managers to plan, balance and reschedule accordingly, especially when quick decisions must be made. For example, a visual assessment of the calendar and roster can determine if the phlebotomist's request for a day off can be accommodated. The manager may determine that if weekly maintenance is performed before Friday, the request could be granted. For unexpected events, the manager can quickly survey the calendar and roster information, to enable quick decisions in planning or rescheduling. Link this to the *Creating a Management Calendar* activity.



- A duty roster will reveal gaps in training and competency. An action plan to address these gaps will create a stronger, cohesive, and more productive laboratory team.
- An organizational chart, outlining the hierarchical relationships between organizational areas, helps clarify workflow, reporting lines, and areas of responsibility. It is a visual aid that illustrates the relationships between positions.
- Conscious use of time will assist a supervisor to be well organized and well prepared. Without a structured and disciplined time management system, a supervisor can easily become overwhelmed. The calendar and duty roster serve as time management tools that can schedule the future, address the present, and record the past. Link this to the *Creating a Management Calendar* activity.



- Job descriptions must specify the responsibility and authority for each staff position. Consideration must be given to the skill set when assigning personnel to the expected duties for that work area. The requirements for each description may vary between laboratories depending upon the laboratory's size, needs and complexity of testing. Link this to *Competency Assessment* and *Creating a Personnel File* activities.



Handout 1: Duty Scheduling Scenario

Duty Scheduling Scenario

- The laboratory and clinic hours are 8:00 to 4:00 pm.
- The HIV Clinic is open to 6:00pm on Tuesdays and Thursdays. During this extended time only 5 patients are seen. The primary request is for a HIV Rapid test; however, on occasion other tests may also be requested.
- Wednesday is the busiest day because of the demands from the prenatal and ART clinics.
- 80% of the workload is collected and received by 11 am.
- Work shift times for staff members may be staggered to accommodate clinic hours (i.e. 8-4 shift, 9-5 shift, 10-6 shift).
- More than one workstation can be assigned to a staff member.
- The clinic employs one Lead Tech, 3 Technologists, 1 Laboratory Aide, and 1 Phlebotomist. You, the manager, and the 3 Technologists are competent in all workstation areas.

Use the following abbreviations to indicate assigned workstations:

H = Hematology and CD_4
C = Chemistry
UA = Serology and Urinalysis
BB = Blood Bank
M = Microbiology
SP = Specimen Processing
P = Phlebotomy
SR = Store Room
X = Cross-Checking and Filing

Handout 2: Workload Statistics

Typical workload for this laboratory each week	Mon	Tue	Wed	Thu	Fri	Tests/ Week	Monthly Statistics from Previous Month
Hematology & CD4							
Full Blood Count (FBC) – Automated	12	15	30	15	11	83	334
Differential - electronic	7	8	14	6	3	38	150
Differential - manual (peripheral smear)	1	2	9	1		13	50
CD4 counts – Automated	4	5	29	5	8	51	205
Malarial Smears	8	6	3	9	4	30	120
Chemistry – Automated						0	
Liver Function Tests (LFT)	11	9	20	14	6	60	240
Serum Electrolytes	10	7	15	8	9	49	200
Renal Function Tests	8	6	18	6	7	45	182
Serum Amylase	3	2	7	2	2	16	65
Serum Glucose	11	8	11	8	10	48	190
CSF Chemistries	1	1		3		5	19
Serology & Urinalysis						0	
HIV Rapid	10	15	12	15	9	61	230
Rapid Syphilis	2	2	5	2	2	13	50
RPR	10	8	15	9	8	50	205
Hepatitis B	4	3		3	2	12	49
Urine Pregnancy	3	2	10	2	1	18	78
Urinalysis with Microscopy	13	10	5	10	8	46	187
Microbiology						0	
AFB Smear Microscopy	9	7	5	10	8	39	155
India Ink				2		2	7
CSF Cell Counts	1	1		3		5	21
Gram Stain	5	2		1	3	11	45
Wet Mounts Direct Microscopy (NaCl & KOH)	3	0	2	2	2	9	37
Blood Bank						0	
Type and Crossmatch	1	2			2	5	17
Specimen Processing						0	
Referral Tests	3	10	8	3	9	33	135
Phlebotomy						0	
Venipunctures Performed	32	29	49	29	27	166	649
Dried Blood Spots (DBS)	5	1	1	2		9	37
Glucose by Glucometer (Point-of-care Device)	4	2			1	7	29
Whole Blood Lactate (Point-of-care Device)	1		3			4	14

Worksheet: Duty Roster Schedule

Duty Roster Schedule

Week 1

	Monday	Tuesday	Wednesday	Thursday	Friday
Lead Tech					
Technologist A					
Technologist B					
Technologist C					
Laboratory Aide					
Phlebotomist					

Week 2

	Monday	Tuesday	Wednesday	Thursday	Friday
Lead Tech					
Technologist A					
Technologist B					
Technologist C					
Laboratory Aide					
Phlebotomist					

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Hematology & CD4

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Perform all daily maintenance on analyzer and document in log ▪ Perform daily analyzer system checks; verify acceptability and document ▪ Perform daily QC; verify acceptability and document ▪ Perform assigned testing, validation, and interpretation ▪ Aliquot specimens properly as needed ▪ Troubleshoot and document corrective action on all invalid or discordant results ▪ Notify and document all panic values ▪ Record results in the log book ▪ Store specimens in proper place and temperature; discard specimens that exceed retention time ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Perform daily and as-needed microscope maintenance and document ▪ Restock work area with all needed supplies for the next day	▪ Perform analyzer weekly, monthly, and as-needed maintenance ▪ Perform, verify, and document calibration as needed ▪ Analyze and report EQA testing ▪ Change stain as needed and verify its performance ▪ Perform basic troubleshooting activities and document ▪ Contact customer service, document call, and monitor until resolved ▪ Issue repair orders and monitor until service is completed ▪ Monitor performance of new lots ▪ Review supplies and reagents needed at the workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at the end of month ▪ Ensure analyzer's toolkit is up-to-date ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Chemistry

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Perform all daily maintenance on analyzer and document on log ▪ Perform daily analyzer system checks; verify acceptability and document ▪ Perform daily QC; verify acceptability and document ▪ Perform assigned testing, validation and interpretation ▪ Aliquot specimens properly as needed ▪ Troubleshoot and document corrective action on all invalid or discordant results ▪ Notify and document all panic values ▪ Record results in the log book ▪ Store specimens in proper place and temperature; discard specimens that exceed retention time ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Restock work area with all needed supplies for the next day	▪ Perform analyzer weekly, monthly, and as-needed maintenance ▪ Perform, verify, and document calibration as needed ▪ Analyze and report EQA testing ▪ Perform basic troubleshooting activities and document ▪ Contact customer service, document call, and monitor until resolved ▪ Issue repair orders and monitor until service is completed ▪ Monitor performance of new lots ▪ Review supplies and reagents needed at the workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at the end of month ▪ Ensure analyzer's toolkit is up-to-date ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Serology & Urinalysis

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Verify rotator speed and document ▪ Perform internal and external QC; verify acceptability and document ▪ Perform assigned testing, validation, and interpretation ▪ Aliquot specimens properly as needed ▪ Troubleshoot and document corrective action on all invalid or discordant results ▪ Notify and document all panic values ▪ Record results in the log book ▪ Store specimens in proper place and temperature; discard specimens that exceed retention time ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Perform daily and as-needed microscope maintenance and document ▪ Restock work area with all needed supplies for the next day	▪ Track discordant rates ▪ Analyze and report EQA testing ▪ Issue repair orders and monitor until service is completed ▪ Monitor performance of new lots ▪ Review supplies and reagents needed at workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for next month; provide blank logs at end of month ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Microbiology

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Perform all daily maintenance on BSC and document in log ▪ Perform daily QC on stain; verify acceptability and document ▪ Perform assigned testing, validation, and interpretation ▪ Aliquot specimens to be referred to another site ▪ Troubleshoot and document corrective action on all invalid or discordant results ▪ Notify and document all panic values ▪ Record results in the log book ▪ Store specimens in proper place and temperature; discard specimens that exceed retention time ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Perform daily and as-needed microscope maintenance and document ▪ Restock work area with all needed supplies for the next day	▪ Perform BSC weekly, monthly, and as-needed maintenance ▪ Verify diluting fluids for counts are free of contaminants; ensure hemacytometers are not cracked or chipped ▪ Analyze and report EQA testing ▪ Issue repair orders and monitor until service is completed ▪ Monitor performance of new lots ▪ Review supplies and reagents needed at workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at end of month ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

BSC = Biosafety Cabinet

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Blood Bank

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Perform temperature for all areas ▪ Perform, document all blood monitoring activities ▪ Perform daily QC; verify acceptability and document ▪ Perform assigned testing, validation, and interpretation ▪ Aliquot specimens properly as needed ▪ Troubleshoot and document corrective action on all invalid or discordant results ▪ Notify and document all panic values ▪ Record results in the log book ▪ Store specimens in proper place and temperature; discard specimens that exceed retention time ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Notify and document availability of blood units ▪ Restock work area with all needed supplies for the next day	▪ Analyze and report EQA testing ▪ Issue repair orders and monitor until service is completed ▪ Monitor performance of new lots ▪ Review supplies and reagents needed at the workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at the end of month ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

EQA = External Quality Assessment

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Specimen Processing for Referral Testing

Daily Tasks	Weekly, Monthly, or As-Needed Tasks
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Ensure DBS are dried properly and prepared for shipment ▪ Ensure all specimens meet the referral test requirements ▪ Prepare a specimen transfer form for each requested test ▪ Aliquot specimens properly as needed ▪ Package specimens for shipment to referral site ▪ Record specimens on the transfer list ▪ Ensure specimen shipment is ready for pick-up at the designated courier times ▪ Ensure proper storage and retention conditions are met for those specimens submitted after the last courier pick-up time ▪ Ensure all retained specimens from the previous shift/day are packaged for shipment ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Restock work area with all needed supplies for the next day	▪ Review referral log; follow-up on any outstanding reports ▪ Tally workload for all stations ▪ Perform weekly and as-needed centrifuge maintenance on all centrifuges ▪ Issue repair orders and monitor until service is completed ▪ Review supplies and reagents needed at the workstation; update stockroom as needed ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at the end of month ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

DBS = Dried Blood Spot

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Phlebotomy	
Daily Tasks	**Weekly, Monthly, or As-Needed Tasks**
▪ Inspect work area ▪ Adhere to safety practices; ensure all needed safety equipment is available ▪ Organize work area for the day's workload ▪ Collect specimens properly ▪ Provide instructions for proper specimen collection to patients (AFB, UA) ▪ Label and log specimens ▪ Perform daily QC on glucometer and lactate POC devices; ensure acceptability and document ▪ Record results of glucose and lactate testing ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste ▪ Clean and disinfect work area ▪ Restock work area with all needed supplies for the next day	▪ Analyze and report EQA testing for POC testing ▪ Observe other members and provide feedback and cross-train as needed ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

EQA = External Quality Assessment
POC = Point of Care

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Store room	
Daily Tasks	**Weekly, Monthly, or As-Needed Tasks**
▪ Inspect storage area ▪ Document and record QA indicators and occurrences ▪ Ensure proper disposal of waste	▪ Perform stock-count ▪ Maintain inventory records ▪ Ensure proper storage and rotation of stock ▪ Check quality of stored stock periodically ▪ Place orders properly ▪ Track orders placed ▪ Inspect and unpack incoming orders ▪ Reconcile received stock, reagents, and supplies with order requests and vendor's invoice ▪ Follow-up on order discrepancies ▪ Ensure sufficient spare parts for microscope (bulb, fuse, etc) and centrifuge (brushes) for all workstations, batteries for POC testing devices ▪ Ensure reagents and chemicals are stored properly ▪ Ensure sufficient workstation logs are available for the next month; provide blank logs at the end of month ▪ Maintain an organized stockroom ▪ Remove all clutter, personal items, and old, non-functioning equipment ▪ Review and sign-off on all SOPs for the workstation and overall laboratory policies

POC = Point of Care

Handout 3: Workstation Assignments

Use this handout to help you assign workstations and duties to your staff. When making the assignments, consider the workload and tasks involved.

Cross-check	
Daily Tasks	**Weekly, Monthly, or As-Needed Tasks**
▪ Check accuracy of results ▪ Ensure all critical results have been called and documented by workstations ▪ Confirm all tests are completed ▪ Validate & interpret glucose and lactate POC testing ▪ Ensure results have been reported properly ▪ Ensure confidentiality of results ▪ Place results in proper location for distribution outside of the laboratory ▪ Perform filing of results for storage and retrieval ▪ Document and record QA indicators and occurrences ▪ Clean and disinfect work area	

POC = Point of Care

Job Aid: Implementing a Duty Roster

Use this job aide to help introduce a duty roster to your staff.

1. **EXPLAIN** the importance of using a duty roster and the benefits regarding workload, morale, and productivity in creating a working team environment.
2. **DISCUSS** the need to define expectations regarding work assignments.
3. **INVITE** input from your staff in developing these expectations.
4. **DOCUMENT and POST** the agreed upon expectations in the lab.
5. **ENFORCE** the duty roster.
6. **ROTATE** workstation assignments on a regular basis.

Suggested list of expectations to discuss with your staff

- Duties to be completed at each assigned workstation
  For example:
  - Daily - tasks that must be completed at the start of the day before patients are received:
    - Inspect work area
    - Organize work area for testing
    - Perform, analyze, record system checks, environmental checks, and QC
  - Weekly – coordination of tasks when roster assignment involves several staff members during the week
  - Monthly/As-Needed – coordination of tasks when roster assignment involves several staff members during the month
- Responsibility for the roster each month
- Process for request of days off while roster is under development
- Process for resolution of conflicting requests, such as seniority
- Decision of where the roster will be posted
- Decision of when the next month's roster will be posted.
- Procedure for change requests after the roster is posted (define who is responsible to find a replacement)
- Notification process for work absences (to whom, by when)
- Process for unmet expectations which are predefined
- Responsible person to monitor, follow up, and resolve noncompliance issues

ACTIVITY Creating a Management Calendar Module 1

PURPOSE:

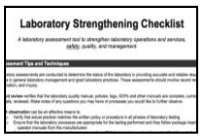
A calendar is an essential management tool for planning and organizing lab tasks. In this activity, participants learn to create and use a calendar to schedule, coordinate, balance, and prioritize lab activities.

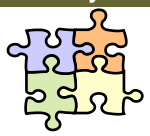
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.39 to 1.42
- ❑ Tool: Wall Calendar Materials
- ❑ Tape, flipchart and markers
- ❑ Pencils with erasers

RESOURCES FOR PARTICIPANT:

- ❑ Handout 1: Tasks To Be Scheduled (123)
- ❑ Handout 2: Sample Calendar (124)
- ❑ Worksheet: Calendar (125)
- ❑ Job Aid: Creating An Effective Calendar (126)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	Cross-cutting
Checklist Items 	Cross-cutting

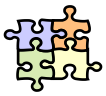
This activity is related to the following activities:	
	Module 1: How Do You Assign Personnel to Tasks? Module 3 and 4: Did You Receive What You Ordered? Module 5: Making a Service Call

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain why a management calendar is important	5 min	Slides 1.39 to 1.40	
2	Explain how to create and manage a calendar	35 min	Wall Calendar Job Aid	
3	Introduce the activity	5 min	Slide 1.41 Handout 1 Worksheet	
4	Conduct the activity	25 min	Handout 1 Worksheet	
5	Debrief the activity	10 min	Worksheet Handout 2	
6	Conclude the Activity	5 min	Slide 1.42	
	TOTAL TIME:	**85 min**		

PROCESS

Preparation

- Create a 'Wall Calendar' for the classroom demonstration (Step 2: "Explain how to create and manage a calendar").
  - Copying Worksheet: Calendar on flipchart pages or use three one-month sheets from a large desk calendar.
  - Post the 'Wall Calendar' in a prominent position in the classroom. Make sure when posted on the wall it is large enough for participants to see. You will be creating calendar entries for April, May, and June (second quarter).
  - Choose an area of the wall where the 'Wall Calendar' can remain posted throughout the training as a resource for this or other activities such as *Did You Receive What You Ordered?* and *Making a Service Call*.



- Print Tool: Wall Calendar Materials. Post these sheets adjacent to the posted classroom's 'Wall Calendar' for easy referencing during the classroom demonstration. Consider modifying the materials to make them more relevant to the participants. For example, a quarterly meeting with the Regional Quality Assurance Manger may be more applicable than the DMO.
- Review Job Aid: Creating An Effective Calendar beforehand to connect and apply the job aid with the classroom demonstration using concrete examples.

Step 1. Explain why a management calendar is important — 5 min

- Project Slides 1.39 to 1.40 to introduce the activity.
- Explain that the calendar is an organizational tool which lists the tasks at hand.
- Emphasize that the calendar provides a quick and easy visual access to all important duties/tasks to be performed over the coming week, month, quarter, etc.
- Expound upon how a manger's role is to coordinate the delegation of tasks and ensure these tasks are completed within the specified time frame and expected performance level.
- Emphasize that the management routines must be scheduled while making sure that the core laboratory patient care functions receive highest priority.

Step 2. Explain how to create and manage a calendar — 35 min

- Refer or distribute Job Aid: Creating An Effective Calendar. Indicate you will be referring to this job aid throughout the classroom demonstration.
- Instruct the class to move to the 'Wall Calendar.'
- Explain that the first step is to begin populating known commitment dates (job aid – item 1). Begin populating the "Scheduled Meeting Dates" (Tool: Wall Calendar Materials) on the 'Wall Calendar.' Points to highlight or illustrate are:
  - Frequently these dates are determined by other parties; therefore, there is little flexibility regarding their scheduling.
  - For this fictitious laboratory, the highest testing volume days are Monday and Wednesday. Thursday was selected to hold the weekly staff meetings.(job aid – item 3)
  - Abbreviate Staff Meeting for May and June (job aid – item 3b).
  - Illustrate how agenda topics can be noted under the meeting's entry (job aid 4c)

- Illustrate how to keep the calendar current. Indicate the DMO needed to reschedule the meeting (job aid – item 4a)

- Explain the second step is to integrate additional calendar schedules into the management calendar (job aid – item 2). Populate the "EQA-PT Calendar" (Tool) on the 'Wall Calendar.' Points to highlight or illustrate are:
  - For this fictitious laboratory, shipping/mailing takes one week. It is a manager's responsibility to ensure the receipt of the shipment and report. Populate the calendar using the table below and explain that these additional entries are added to ensure this task is not overlooked.

	Serology Survey	Hematology Survey	Microbiology Survey
Received Kit?		May 21st	April 8th
Receive Evaluations and Reviewed?	April 14th		June 3rd

  - Illustrate how to keep the calendar current. Indicate the laboratory did not receive a survey kit as expected and address this issue using the calendar (job aid – 4b).

- Populate the "Laboratory Equipment Schedule" (Tool) on the 'Wall Calendar.' Points to highlight or illustrate are:
  - Arranging outside resources to perform maintenance requires several steps to be scheduled and followed-through by the manager (job aid – items 3a & 3f).
  - Select 1 or 2 examples from this schedule to illustrate this point. Ask participants to outline the steps and write their response on a flip chart and then schedule each step on the 'Wall Calendar.' See example below.

BSC Filter Replacement	
Timeline	**Description of Task to Be Scheduled/Noted in Calendar**
April	Contact Biomed to schedule May service; inquire if filters are in-stock (minimum of 2 weeks to receive order)
3 weeks later	Contact Biomed to verify filters are in stock; schedule a date for service; select a date/time with minimal interruption to laboratory services
Staff Meeting Preceding Service Date	Add topic to agenda for the staff meeting (testing interruption and decontamination of BSC by laboratory personnel)
Day prior to service	From previous experience, a phone call reminder to Biomed department regarding service has been beneficial. Remind staff to decontaminate BSC at the end of the day
Date of Service	Remind staff to plan their workload accordingly and complete decontamination of BSC prior to scheduled time

- Populate the "Quality Improvement Project Plan" (Tool: Wall Calendar Materials) on the 'Wall Calendar.' Schedule the remaining measurement dates and review findings date.
- Connect the checklist items with the tasks to be scheduled in "Scheduling Quality Activities" (Tool) for participants. Populate the remaining tasks from "Scheduling Quality Activities" on the 'Wall Calendar.'
- Review the "Suggestions to use the calendar effectively" portion of Job Aid:

Creating An Effective Calendar.

- Instruct participants to return to their seats.

Step 3. Introduce the activity 5 min

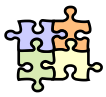
- Project Slide 1.41 to provide an overview of the activity.
- Distribute or refer participants to Handout 1: Tasks To Be Scheduled and Worksheet: Calendar.
- Explain they will create their own management calendar applicable to their worksite using the tasks indicated in the handout.
- Suggest they begin by first determining which days of the week are their busiest at their worksite. Point out that they should avoid scheduling their staff meetings on those days.
- Instruct participants to populate their calendar with the tasks listed in Handout 1.
- Inform participants they have 25 minutes to complete the assignment.

Step 4. Conduct the activity 25 min

- Walk around to coach and provide assistance.

Step 5. Debrief the activity 10 min

- Ask for a volunteer to share his/her work to describe how they created their calendar. Facilitate a discussion about pros and cons of different approaches.
- Allow participants to contribute additional items to be added to the calendar.



- Link to "How Do You Assign Personnel to Tasks?" activity. Discuss ways to reschedule managerial tasks when the laboratory aide is unavailable to work Thursday (03/04) and Friday (04/04). A manager's responsibility is to ensure the test results for the day are accurate and are released in a timely manner. Managers must learn how to prioritize and reschedule their managerial tasks to accommodate the day's concerns
- Distribute Handout 2: Sample Calendar to the participants.

Step 6. Conclude the Activity 5 min

- Project Slide 1.42 to summarize the time management tools.
- Highlight or reiterate the key messages below.
- Make sure participants achieved the objectives of the activity.

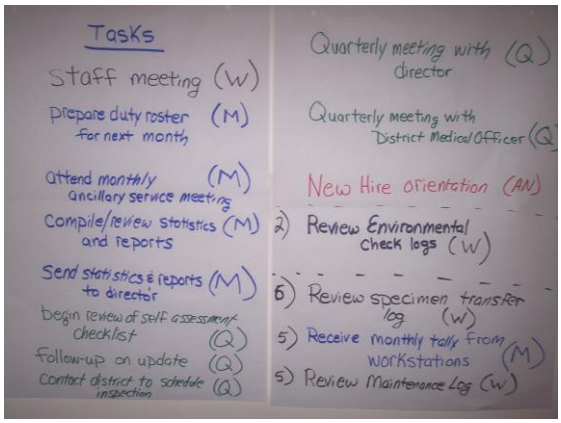
KEY MESSAGES

- A calendar serves as a visual reminder of all important duties/tasks and their timelines. It is also a planning tool with which to distribute critical lab tasks evenly across coming weeks, months, quarters, etc. in a timely manner.
- For the calendar to be an effective tool, it must be kept up-to-date.
- If a task is important and must be completed, then the task must be assigned and scheduled onto the calendar.

Can they:

- Populate the calendar appropriately?
- Use the calendar to schedule, coordinate, balance, and prioritize lab activities?

ACTIVITY OBJECTIVES MET?



➢➢ Connections and Applications

- **Ancillary Meeting** – It is important to understand the laboratory's role in the overall facility's operations. Going beyond the walls of the laboratory allows for interaction with other managers, it provides opportunities to learn and address interdepartmental issues, it allows for expression of laboratory needs and concerns, and it builds relationships with other departmental managers.
- **Staff Meeting** – As different topics arise during the week, managers and staff can add discussion points. These notations ensure the topics will be added to the meeting's agenda.
- **Review of Logs** –This is an ideal time to ensure all maintenance is being performed. This weekly review provides a way to monitor shifts and trends occurring with QC.
- **EQA Survey** – It is a manager's responsibility to ensure receipt of survey specimens. Follow-up action must be taken if the survey is not delivered when expected.
- Yearly review and signing of SOPs, policies, and procedures – This yearly task may be too large to complete in one month. Dividing this task into smaller, more achievable parts performed over several months can be offered as an alternative.
- Conscious use of time will assist a supervisor in being well organized and well prepared. Without a structured and disciplined time management system, a supervisor can easily become overwhelmed. The calendar and duty roster serve as time management tools that can schedule the future, address the present, and record the past. Link this to the *How Do You Assign Personnel to Tasks?* activity.
- Time management tools allow a supervisor to:
  - Be prepared for meetings.
  - Minimize time wasted on non-productive and non-essential issues.
  - Be aware of existing commitments
  - Understand capacity to address new assignments, prioritize assignments, and when to say 'no.'
  - Plan each day's work efficiently and effectively.
  - Assure that no task (large or small) is neglected.

Tool: Wall Calendar Materials

SCHEDULED MEETINGS DATES

Meeting	Frequency
Staff Meeting	Weekly – every Thursday
Monthly Ancillary Service Management Meeting	Monthly – first Wednesday of the month
Meeting with District Medical Officer (DMO)	Quarterly– last Thursday of the Month (March, June, September, December)
Meeting with Laboratory Director	Monthly - last Monday of the month

EXTERNAL QUALITY ASSURANCE PROFICIENCY TESTING (EQA-PT) CALENDAR

20XX EQA Proficiency Testing Schedule			
	Serology Survey	**Hematology Survey**	**Microbiology Survey**
Shipping Date	February 20th	May13th	April 1st
Reporting Date (must be postmarked by this date)	March 6th	June 5th	April 23rd
Evaluations Mailed Date	April 7th	July 6th	May 26th

Tool: Wall Calendar Materials

LABORATORY EQUIPMENT SCHEDULE

Equipment Name	Performed By	Frequency	Schedule
CD_4 Analyzer	XYZ Manufacturer	biannually	March/September
Hematology Analyzer	XYZ Manufacturer	biannually	March/September
Chemistry Analyzer	ABC Manufacturer	biannually	October/April
BSC Filter Replacement	Biomedical Department	biannually	November/May
Pipette Calibration	National Health Laboratory	biannually	December/June
Centrifuge RPM Validation	Biomedical Department	yearly	December

Tool: Wall Calendar Materials

Quality Improvement Project Plan

Measurement of *TAT on FBC*

PLAN

Definition of element to be measured *Time specimen is logged into the laboratory until the results are released to the customer*

Measurement:

Method: *Clock specimens in & out of the lab and record time in log book*

How often: *Weekly on Mondays*

Duration: *3 months*

Acceptable results: *95% of specimens will meet published TATs*

Date to review findings *June 2, 20XX*

Person responsible *Supervisor*

Dates	03/03	10/03	17/03	24/03	31/03	07/04	14/04	21/04	28/04	05/05	05/12	....
Measured parameter value	45%	60%	55%	47%	42%							

Evaluation of Results _____

DO

Corrective Action Proposed _____

Follow-up Review of Corrective Action to be Conducted on _____

CHECK

Results of Follow-Up Review _____

ACT

Corrective Action Effective? _____

Signature of Reviewer _____ Date _____

Clinic Director _____ Date _____

Tool: Wall Calendar Materials

Scheduling Quality Activities

Checklist Item	Task to be Scheduled
Does the laboratory communicate with upper management regularly regarding personnel, facility, and operational needs? (2.4) Are staff meetings held regularly? (3.8)	Populate Scheduled Meeting Dates
Does the laboratory participate in a Proficiency Testing (PT) scheme or inter-laboratory comparison? (9.18)	Integrate EQA-PT Calendar
Is routine calibration of laboratory equipment – including pipettes, centrifuges, balances, and thermometers – scheduled, indicated on the equipment, and verified? (5.6) Is equipment routinely serviced according to schedule and documented in appropriate logs? (5.8)	Integrate Laboratory Equipment Schedule
Does the laboratory identify and undertake quality improvement projects (IP)? (2.3)	Populate Quality IP Plan
Does the laboratory supervisor routinely perform a documented review of all quality records? (2.2) Are environmental checks / temperature logs complete, accurate, and regularly reviewed? (9.1)	Schedule a review of all applicable records
Are stock counts routinely performed? (7.10)	Ensure stock count has been performed
Do work schedules show task assignments & coordination of work among lab staff? (3.1)	Prepare and post the duty roster
Is there a system for competency assessment of staff (both new hires and existing staff)? (3.6)	Schedule competency review of all staff (by individual or by section)
Are quality indicators (TAT, rejected specimens, stock outs, etc.) selected, tracked, and reviewed regularly to monitor laboratory performance and identify potential quality improvement activities? (11.2)	Blank logs available for upcoming month; Receive monthly statistics from workstations; Compile/Review monthly statistics/ report; Forward statistics/reports to director; Discuss potential IP with director at next meeting
Is there a tool for regularly evaluating client satisfaction and is feedback received effectively utilized to improve services? (4.4)	Review customer complaint box and report finding to staff

Job Aid: Creating An Effective Calendar

Steps for Creating and Managing Your Calendar

1. **Populate your calendar with known commitment dates** such as meetings or training workshops. Typically these dates offer less flexibility with scheduling.
2. **Integrate additional calendar schedules** into your calendar to create one overall management calendar. Some examples to consider are:
    - In-country holidays that may alter operational hours or available staff
    - External quality assurance proficiency testing schedule
    - Equipment scheduled maintenance performed by vendors
3. **Populate your calendar with weekly, monthly, yearly, as-needed managerial tasks.** Try to minimize scheduling managerial tasks on your heaviest testing volume days. Remember, your first priority as a manager is to ensure the timely reporting of quality patient results.
    a. **If several steps are required for the completion of a task, then first plan and organize the task.** Schedule each step of the task into your calendar. Use this plan/organize/schedule approach to address larger projects such as improvement projects, clinician handbook, and quality assurance and safety manuals.
    b. **Use notations and abbreviations to speed entries** and keep the calendar organized and legible. For example, 'ST Meet' or "SM" could be used to indicate a staff meeting. "RR" could indicate when the regular review of all logs must be performed and documented.
    c. **WEEKLY TASKS:** Even though these tasks are performed each week, note them into your calendar to ensure these essential functions are not overlooked. These notations will serve as a reminder and assist you with coordinating and scheduling new entries or entries requiring rescheduling.
    d. **MONTHLY TASKS:** Many monthly tasks must be scheduled towards the end of the month (preparation for the upcoming months) and the beginning of the month (review/statistical compilation/reporting of the previous month). Use the calendar to assist you with balancing and coordinating all your monthly tasks. For example, choose to prepare and post your duty roster during the second or third week instead at the beginning or end of the month.
    e. **ANNUAL TASKS:** Tasks performed on a yearly basis can easily pile up as the fiscal or calendar year draws to a close. By staggering these tasks throughout the year, such as March-to-March or October-to-October time periods, they can be accomplished more reliably and less hurriedly.
    f. **AS-NEEDED TASKS:** As needs arise within the laboratory, they must also be planned and scheduled. Remember an effective calendar ensures that no task, large or small, is overlooked. If a task is performed sometime during the month and not on a specific date, write the entry in the top margin of the calendar to serve as a reminder. As large tasks are broken down into smaller steps, the deadlines for each step can be noted on the specific date.

Job Aid: Creating An Effective Calendar

4. **Keep the calendar current** and effective by immediately updating your calendar with new entries, additional information, or changes. Some suggestions to accommodate schedule changes/updates/ongoing activities quickly and easily are:

    a. **Circle the entry and draw an arrow to the rescheduled date.** For example, the District Medical Officer called to reschedule the meeting. Circle the entry and draw a line pointing to the rescheduled date. Remember to include a notation if the routine meeting time has changed. Another example is mailing the hematology (Heme) survey a day early to accommodate the decrease in available personnel due to training or vacations.

    b. **Strike through an entry and add a notation if needed, to indicate a change or update.** For example, the laboratory did not receive the AFB Survey as expected. Slash the entry and add the notation "Call" to remind you to follow-through.

    c. **Note agenda topics to be discussed for an upcoming meeting under the meeting's calendar entry.** This reminder ensures the topic will be included in the agenda. For example, upon weekly review the manager discovered incomplete documentation on the Acid Fast Bacilli (AFB) Stain QC Log. The manager adds the notation, "AFB Stain QC" under the upcoming staff meeting entry. Staff can also add topics for discussion. For example, the person assigned to the store room workstation requests a discussion regarding the disorganized storeroom.

5. **Consult the previous year's calendar.** Last year's calendar can serve as a reminder and organizer when planning for the upcoming year.

Suggestions to use the calendar effectively

1. Visit the calendar daily for current commitments.
2. Scan the upcoming days, weeks, and months routinely so you are always aware of upcoming tasks. This will enable you to think ahead as well as to better accommodate and coordinate last-minute changes or additions.
3. Use the calendar to organize and communicate staff responsibilities. When assigning tasks to specific personnel, write the task and the staff name on the calendar. The date of the entry provides the deadline for the task and a reminder for you to follow up. Additionally, if a staff member is on vacation, the person assigned to take over his responsibilities can review the calendar and know what activities must be performed.
4. Invite the staff to help manage the calendar to facilitate a smooth and productive laboratory. Frequently, staff members will mention ideas, suggestions, or needs in passing that should be entered on the calendar. Having staff directly update the calendar reduces your load, while simultaneously encourages staff to participate and contribute with overall duties from a managerial perspective.

Handout 1: Tasks To Be Scheduled

Tasks to be Scheduled into Management Calendar	
(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)	
Module	**Tasks**
1 Productivity Management	Staff meeting (W) Prepare and post duty roster for next month (M) Attend monthly ancillary service management meeting (M) Compile / review previous month's statistics and reports. (M) Send statistics & reports to director (M) Begin review of self-assessment checklist (Q) Follow-up update of self-assessment (Q) Quarterly meeting with director (Q) Quarterly meeting with District Medical Officer (Q)
2 Work Area Management	Review Environmental Check logs (W) Inspect storage area & confirm all is in order (M) Review occurrence log (M) Annual lab safety training (Y) Annual Safety Assessment (Y)
3 Inventory	Ensure stock count has been performed (M)
4 Procurement	Forecast upcoming needs (Q) Track orders - Quarterly supply order delivery - (Q)
5 Equipment	Review maintenance log (W) Receive monthly tally from workstations (M) Send pipettes for semi-annual calibration (SM): Dec/June Frequency
6 Quality Assurance	Review QC, Levy-Jennings & Reagent Logs (W) Review occurrence log, discordant rates and QA indicators (M) Begin performing staff competency reviews (M and Y) Receive Microbiology EQA Sample – (Q): 04/04 Shipment Date Submit Microbiology EQA Results - (Q): 25/04 Reporting Date Review Microbiology EQA results and provide follow-up - (Q): 23/05 Evaluations Mailed Date Report EQA results with staff and director - (Q) Assure staff review and sign all SOPs (Y) Review & sign Heme SOPs Review & sign Chem SOPs Review & sign Serology SOPs
7 Specimens	Review Specimen transfer log (W) Audit specimen rejection data (M) Audit specimen collection (Q)
8 Lab Testing	Audit requisitions (M) Audit specimen log (M) Audit Result Reports (M)
9 Reporting	Review customer complaint box (M) Report to staff findings from customer survey (M)
10 Documents & records	Record rotation and new logs in place for next month (M) Review/submit Balanced Scorecard to Management (M) Annual review / update of documents library (M and Y)
Improvement Project	Plan new improvement projects (TAT of Malaria Smears)and schedule (AN)

Worksheet: Calendar

Calendar Worksheets

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Month 1: April

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
	1	2	3	4	5/6
7	8	9	10	11	12/13
14	15	16	17	18	19/20
21	22	23	24	25	26/27
28	29	30			

Worksheet: Calendar

Month 2: May

Calendar Worksheets

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
			1	2	3/4
5	6	7	8	9	10/11
12	13	14	15	16	17/18
19	20	21	22	23	24/25
26	27	28	29	30	31/1

Worksheet: Calendar

Month 3: June

Calendar Worksheets

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
2	3	4	5	6	7/8
9	10	11	12	13	14/15
16	17	18	19	20	21/22
23	24	25	26	27	28/29
30					

Handout 2: Sample Calendar

Month 1: April

Management Calendar

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
	1 *Receive monthly tally from workstations*	**2** *Compile previous month's statistics and reports* *Send copy to director* *Attend monthly ancillary service management meeting*	**3** *Staff meeting* *Report to staff findings from customer survey* *Review data/progress on improvement project*	**4** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**5/6**
7 *Begin performing competency assessment reviews*	**8** *Receive Microbiology EQA Sample*	**9**	**10** *Staff Meeting* *Assure staff review and sign all SOPs*	**11** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**12/13**
14 *Review serology EQA and provide follow-up* *Begin review of self-assessment checklist*	**15** *Inspect storage area & confirm all is in order* *Ensure stock count has been performed*	**16**	**17** *Staff meeting*	**18** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**19/20**
21	**22**	**23** *Submit micro EQA results*	**24** *Staff meeting*	**25** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**26/27**
28 *Send pipettes for semi-annual calibration* *Prepare duty roster for next month*	**29** *Review occurrence log, discordant rates and QA indicators (TAT, requisitions, specimen log, result reports, etc)* *Review customer complaint box*	**30** *Record rotation and new logs in place for next month*			

Handout 2: Sample Calendar

Month 2: May

Management Calendar

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
			1 *Staff meeting*	**2** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**3/4**
5 *Receive monthly tally from workstations*	**6** *Compile previous month's statistics and reports.* *Send copy to director*	**7** *Attend monthly ancillary service management meeting*	**8** *Staff meeting* *Review data/progress on improvement project*	**9** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**10/11**
12	**13** *Annual Safety Assessment*	**14**	**15** *Staff meeting* *Review & sign Heme SOPs*	**16** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs* *Ensure stock count has been performed*	**17/18**
19 *BSC HEPA filters changed by Biomed and routine maintenance*	**20** *Audit specimen collection*	**21** *Receive Heme EQA Survey*	**22** *Staff meeting*	**23** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**24/25**
26 *Prepare duty roster for next month*	**27**	**28** *Review occurrence log, discordant rates and QA indicators (TAT, requisitions, specimen log, result reports, etc)* *Review customer complaint box*	**29** *Staff meeting*	**30** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs* *Record rotation & new logs in place for next month*	**31/1**

Handout 2: Sample Calendar

Month 3: June

Management Calendar

(W=weekly, M=monthly, Q=quarterly, SM=semi-annual, Y= yearly, AN=as needed)

Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
2 *Receive monthly tally from workstations*	**3** *Compile previous month's statistics and reports.* *Send copy to director* *Review microbiology EQA and provide follow-up*	**4** *Attend monthly ancillary service management meeting*	**5** *Staff meeting* *Review data/progress on improvement project* *Submit Heme EQA Results*	**6** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**7/8**
9 *Follow-up update on self-assessment* *Contact district to schedule inspection*	**10** *Quarterly supply order delivery due - track orders*	**11**	**12** *Staff meeting* *Review & sign Chem SOPs*	**13** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**14/15**
16 *Ensure stock count has been performed* *Annual review of documents library*	**17**	**18**	**19** *Staff meeting and* *Annual lab safety training*	**20** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**21/22**
23 *Quarterly meeting with director* *Prepare duty roster next month*	**24** *Forecast upcoming needs*	**25** *Review occurrence log, discordant rates and QA indicators (TAT, requisitions, specimen log, result reports, etc)* *Review customer complaint box*	**26** *Staff meeting*	**27** *Review maintenance, environmental check, QC, reagent, L-J, and specimen transfer logs*	**28/29**
30 *Quarterly meeting with District Medical Officer* *Record rotation and new logs in place for next month*					

ACTIVITY Competency Assessment Module 1

PURPOSE:

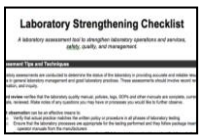
Competency assessment is important in assuring the quality of the laboratory output. This activity provides suggested policy and guidelines for implementing competency assessment for personnel performing diagnostic clinical testing in the laboratory.

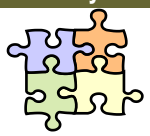
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.43 to 1.47
- ❑ Tool: Competency Evaluation Quiz Answers

RESOURCES FOR PARTICIPANT:

- ❑ Handout: Competency Evaluation Policy (127)
- ❑ Worksheet: Competency Evaluation Quiz (128)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.4 Assess personnel competency against standards and determine corrective action and training needs 1.6 Meet with staff individually to communicate expectations, provide feedback, coaching, or on-the-job training to ensure competency and productivity 1.8 Maintain and update personnel records (training, certification, competency assessment) 6.13 Periodically observe/assess accuracy of personnel's work and take corrective action 8.1 Monitor testing to ensure SOPs are followed and tests are performed and reported properly and promptly
Checklist Items 	1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? (Personnel Training; Competency Assessment) 3.5 Personnel Filing System Are records of personnel maintained? 3.6 Laboratory Staff Training Is there a system for training? 3.7 Staff Competency Assessment and Retraining Is there a system for competency assessment?

This activity is related to the following activities:	
	Cross Cutting: Managing Performance – The Balanced Scorecard, Improvement Project Planning – Master Class Module 1: Personnel Files Module 6: Using Standard Operating Procedures Module 7: Specimen Collection - Phlebotomy Role Play

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain importance of competency assessment to a quality lab	5 min	Slides 1.43 to 1.46	
2	Introduce the activity	10 min	Slide 1.47 Handout	
3	Conduct the activity – Overnight Homework	5 min	Handout Worksheet	
4	Debrief the activity	15 min	Tool Worksheet	
5	Conclude the Activity	5 min		
	TOTAL TIME:	**40 min**		

PROCESS

Preparation

- Conduct activity over two days with overnight homework.

 (see Step 3)

Step 1. Explain importance of competency assessment to a quality lab — 5 min

- Project Slides 1.43 to 1.45. Remind participants that the laboratory staff is a very important input in the specimen flow process.
- Project Slide 1.46. Review the associated tasks.
- The purpose of competency evaluation is to observe personnel to determine if:
  - Procedures & protocols are being followed
  - Proper technique is used to perform the assay
  - Safety guidelines are followed
- The evaluation of personnel performing clinical testing falls to the immediate or site supervisor. Each laboratory has a responsibility to assure that the personnel are performing at a pre-determined level prior to allowing them to test, report, and release results on clinical samples.
- Ask participants to think about how they would go about setting up a competency assessment program in their own laboratories. Encourage them to consider how to assess skills of important competencies; those competencies important to the job and that have a direct impact on patient care.

Step 2. Introduce the activity — 10 min

- Project Slide 1.47. Present Handout: Competency Evaluation Policy
- Familiarize participants with the major headings and content of the Policy
- Caveat: Individual countries may develop their own specific policies for competency assessment. Obviously country policies will supersede those expressed in this document. This is merely an example of such a policy and will be used for this activity to familiarize the participants with the principles of competency assessment.

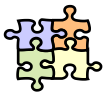
Step 3. Conduct the Activity — 5 min

- Inform participants that they will be asked to review the policy (Handout: Competency Evaluation Policy) and complete the Worksheet: Competency Assessment Quiz for overnight homework. Assure participants that all the quiz answers are found in the Handout.

Step 4. Debrief the activity — 15 min

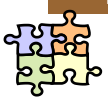
- Review Worksheet responses with the participants, encouraging all to participate in providing answers. Refer to Tool: Competency Evaluation Quiz Answers. Answer any questions/comments.
- Encourage participants to provide competency evaluation for all persons

performing clinical testing. Remind them that competency assessment is based on the actual duties that the person is performing in the laboratory.



- A competency checklist, as was used in the *Specimen Collection - Phlebotomy Role Play* activity, or a SOP can be used as a guideline to evaluate performance.
- Ask participants to name several ways to measure competency. Suggested responses include:
  - Direct observation of routine patient testing
  - Monitoring the recording & reporting of test results, including critical results
  - Review outcomes of performance such as Proficiency Testing (PT), QC, & Maintenance Logs
  - Assessment of test performance using "known" samples, such as internal "blind" testing samples & slides or external proficiency testing
  - Case studies & situation-based problem solving
  - SOPs reviewed & knowledge assessed
- Emphasize that there must be a plan to retrain & reassess the employee's competency if there is a failure in the competency assessment.
- And the retraining & reassessment must be …documented!

Step 5. Conclude the Activity 5 min



- Link to *Specimen Collection - Phlebotomy Role Play*, *Personnel Files*, Managing Performance – the *Balanced Scorecard, Planning Improvement Projects - Master Class,* and *Using Standard Operating Procedures*.
- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- Assuring the quality of the testing process relies on all the inputs. As a key input into this process, laboratory staff must be assessed for their competency to ensure a quality output – accurate & reliable testing information.
- Laboratory managers must assure staff competency prior to authorizing the staff to perform testing. Competency must be validated routinely and documented in the personnel file.
- Reviewing competency includes reviewing safety practices in all aspects of testing.

Can they:

- Assess the competency of individual staff as they are observed performing a procedure?
- Develop & implement a competency assessment program when they return to their laboratory?
- Assess the competency of their staff as an improvement project?

☑ ACTIVITY OBJECTIVES MET?

Tool: Competency Evaluation Quiz Answers

Based on *Competency Evaluation for Personnel Performing Clinical Testing* Policy

1. What is the recommended frequency of routine competency assessments?
   New hire - Prior to first reporting patient results, then every 6 months in the first year, then annually

2. T or F The evaluator must directly observe the procedure.
   True

3. If a person fails any part of the evaluation, what must he or she do?
   Review the test procedure, and repeat the procedure as the supervisor observes

4. If a person fails any part of the evaluation, what must the supervisor do?
   Complete occurrence report and attach to personnel file, if problems persist, contact laboratory director for remedial training

5. Where are the competency assessment results kept?
   Filed on-site - individual records in personnel files; Records for all personnel at site with QC records

6. What type of specimens will be used to evaluate performance?
   Clinical Specimens or Training Materials; Whole blood, serum, urine, or other QC material as appropriate per testing procedure

7. T or F When new personnel are hired, they can begin testing right away and complete the competency assessment within the first 6 months after hiring.
   False

8. List seven (7) criteria that must be assessed during a competency evaluation.
   - *Specimen accession, handling and processing.*
   - *Test performance according to written protocols.*
   - *Appropriate QA checks must be performed and recorded.*
   - *Monitoring and recording of results according to written protocols.*
   - *Instrument maintenance and function checks are properly performed.*
   - *Assessment of problem solving skills.*
   - *Adherence to appropriate safety guidelines.*

9. What qualifications must the QC materials that are used in competency assessment meet?
   In date & of the same type used in clinical evaluations

10. How long are competency evaluations kept?
    Two years

Handout: Competency Evaluation Policy

I. Purpose:

A. The CLIA'88 legislation [United States (U.S.) regulation] requires a mechanism to evaluate and demonstrate competency in test performance for each person who performs a clinical diagnostic test. This means that the laboratory director, site supervisor, or other designated person must critically observe the individual being checked to determine that procedural methods and protocols are followed correctly, technique is adequate and safety guidelines are followed.

B. In contrast, "internal proficiency testing" is a process evaluating a remote location's ability to correctly generate a result from an unknown test sample; the process is operated by the central regional laboratory. "External proficiency testing" is similar to internal proficiency testing, except that the process is operated and evaluated by an independent agency and the reports are sent to the U.S. CMS or other central authority. In all cases, actual test performance must be validated by the site supervisor.

II. Personnel:

A. These guidelines apply to personnel who perform clinical tests on human specimens. Persons performing clinical tests are required to exercise good judgment in protecting themselves, their patients and co-workers.

B. It is the site supervisor's responsibility to monitor compliance and assure that competency evaluations are performed according to the schedule outlined below.

III. Interval:

Competency evaluation must be performed according to the following schedules:

1. New personnel must demonstrate competency in performing each test procedure prior to reporting patient results.
2. New personnel must demonstrate competency in performing each test procedure twice during the first year in which they begin to perform the procedure.
3. After the first year of testing, each person must demonstrate test proficiency on an annual basis. If a new test method is added, or existing procedures substantially changed, all testing personnel must demonstrate competency (prior to the testing of clinical samples, 6 months later, and annually thereafter) in performing the new (or altered) test procedure.

IV. Specimen:

A. Competency evaluation will be performed using clinical specimens or training materials. Serum, whole blood, urine or other clinical specimens or quality control material appropriate for the procedure in question may be used. Refer to the specific written procedure in the laboratory manual.

B. **SAFETY NOTICE**: Reagents developed from human blood or body fluids may be infectious. Standard (Universal) precautions are required when working with reagents of human origin.

Handout: Competency Evaluation Policy

V. Materials:

A. Instruments:

All instruments must be in working order and of the same type as used for routine clinical determinations.

B. Supplies, Reagents and Standards:

All reagents and Q.C. materials must be in date and of the same type as used for routine clinical determinations.

VI. Evaluation:

A. The evaluator, usually the site supervisor, will directly observe the entire testing procedure with special emphasis on the following:

1. Specimen accession, handling and processing.
2. Test performance according to written protocols.
3. Appropriate QA checks must be performed and recorded.
4. Monitoring and recording of results according to written protocols.
5. Instrument maintenance and function checks are properly performed.
6. Assessment of problem solving skills.
7. Adherence to appropriate safety guidelines.

B. All samples are to be tested in the same manner as routine clinical materials.

VII. Results:

A. Individual Competency Evaluation Worksheet

1. Make as many copies of the Individual Competency Worksheet as needed so that each person has their own evaluation form.
2. Record the name of the individual and site location on each form.
3. Indicate the approved test complexity level for the individual.
4. The evaluator, site supervisor or designee, will observe the person performing each clinical procedure.
5. For each test evaluated, each of the criteria, listed in Evaluation (VI, A.) above, will be scored as pass or fail. Acceptable test performance requires a "pass" score in all of the seven criteria.
6. The evaluator will note the date, individual criteria and overall pass or fail. If an individual fails any portion of the assessment, any corrective action or retraining initiated must be documented.
7. The evaluator must initial the box opposite the test evaluated.
8. The site supervisor will review each person's individual Competency Evaluation form, sign and date the form.
9. The Laboratory Director must also sign the Individual Competency Evaluation on a yearly basis.
10. The Individual Competency Evaluation form will be maintained by the site supervisor.

Handout: Competency Evaluation Policy

B. Annual Site Competency Record; (a summary of all individuals and the procedures that they may perform)

1. Make as many copies of the "Annual Site Competency Record" as needed.
2. Record all of the indicated information as appropriate.
3. It is the site supervisor's responsibility to maintain up to date copies of both the Individual Competency Evaluation and Annual Site Competency Record forms on site.
4. The Annual Site Competency Record will be sent to the Laboratory Director for review and signature on a scheduled basis once a year. Alternatively, the Laboratory Director may sign the form(s) during a site visit.
5. File the Annual Site Competency Record with the quality control records.

VIII. Corrective Action:

A. The following remedial actions will be taken whenever an individual fails to generate acceptable results against sample unknowns. "Acceptable Results" are defined as at least 80% correct test performance (100% correct test performance for ABO/RH testing) as evidenced by test results when five or more unknown (blind) samples are tested. If fewer than five samples tested, "Acceptable Results" will be defined as 100% correct test performance.

B. The site supervisor will review the competency test results with the individual.

C. An individual that fails any portion of the competency assessment should review the written test procedure and quality control guidelines with the site supervisor.

D. The site supervisor will observe the individual while they repeat the test procedure.

E. Consult with the Laboratory Director as the need warrants, especially if there seems to be a problem with the competency sample itself.

F. If competency assessment issues cannot be resolved on-site by the site supervisor, the Laboratory Director will arrange for remedial training and/ or additional testing materials as appropriate.

G. The individual will not perform the test for any clinical purposes until they have satisfactorily passed their competency evaluation.

H. A corrective action report will be completed and attached to or included on the annual competency evaluation form.

IX. Records:

A. File all records for two years on site. All records must be signed by the site supervisor and reviewed by the Laboratory Director on an annual basis.

B. Individual annual competency evaluation forms should be kept at the testing site.

X. References:

A. Federal Register, 42 CFR Part 74, Wednesday March 14, 1990: Revision of

Handout: Competency Evaluation Policy

Laboratory Regulations, (Clinical Laboratory Improvement Amendments of 1988).

Section 493.1451 (b) (8) and Section 493.1501 (h) (1 & 2).

XI. Authors:

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XI. Procedure Review:

written: February 28, 1996 revised 1: August 21, 2002

revised 2: August 4, 2005

printed: January 5, 2016

Date							
Initials							

Date installed or replaced _____/_____/_____ Date removed _____/_____/____

Supervisor: _____ Director: _____

Reference: www.michigan.gov/documents/mdch/RQA.16_178848_7.doc

Handout: Competency Evaluation Policy

Individual Competency Evaluation

Employee: _____ Year _____

Emp. ID# or SSN: _____ Evaluator:_____

Health Dept: _____ , _____

Approved Test Complexity Level: ( ) waived, ( ) moderately complex ( ) highly complex

Test Procedure	Criteria (Pass/Fail)								Date	Reviewer Initials
	A	B	C	D	E	F	G	H		
Overall Rating (Pass / Fail)										

Criteria:
A = Specimen handling and processing
B = Test procedure
C = Quality Control testing and recording
D = Results recording and interpretation
E = Instrument maintenance and function checks
F = Assessment of problem solving skills
G = Safety guidelines
H = Problem solving skills

Corrective Action (if any):

Date	

Review:

Supervisor: _____ Medical Director: _____

Date: _____

Handout: Competency Evaluation Policy

Annual Site Competency Record

Health Dept: _____ , _____

Name: last, first	Employee ID# or SSN	A	B	C	D	E	F	G	H	I	J

P = passed, F = failed, N/A = Test not performed by employee

Key	Test	Manufacturer
A	Urine Pregnancy Test (hCG)	
B	Urine Dipstick	
C	Hemoglobin (mcx)	
D	Hemoglobin (w)	
E	Cholesterol, HDL Cholesterol, Triglycerides & Glucose (mcx)	
F	Cholesterol, HDL Cholesterol, Triglycerides & Glucose (w)	
G	Whole Blood Glucose (w)	
H	Wet Mounts (mcx)	
I		
J		

Review:

Supervisor: _____ Lab Director: _____

Date: _____

Worksheet: Competency Evaluation Quiz

Based on *Competency Evaluation* Policy

1. What is the recommended frequency of routine competency assessments?

   _____

2. T or F The evaluator must directly observe the procedure.

3. If a person fails any part of the evaluation, what must he or she do?

   _____

4. If a person fails any part of the evaluation, what must the supervisor do?

   _____

5. Where are the competency assessment results kept?

   _____

6. What type of specimens will be used to evaluate performance?

   _____

7. T or F When new personnel are hired, they can begin testing right away and complete the competency assessment within the first 6 months after hiring.

8. List seven (7) criteria that must be assessed during a competency evaluation.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

9. What qualifications must the QC materials that are used in competency assessment meet?

   _____

10. How long are competency evaluations kept?

    _____

ACTIVITY Planning and Conducting a Staff Meeting Module 1

PURPOSE:

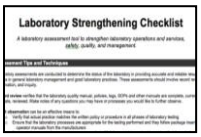
Effective staff meetings yield a cohesive and informed staff working together toward shared institutional goals. As the curriculum unfolds, this activity encourages participants to complete their own list of appropriate items for a staff meeting agenda.

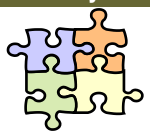
RESOURCES FOR FACILITATOR:

- ❑ PowerPoint slides: 1.48 to 1.50
- ❑ Tool: Topics for Staff Meeting Agenda Answers
- ❑ Flipchart & Markers

RESOURCES FOR PARTICIPANT:

- ❑ Job Aid 1: Tips for Planning and Conducting a Staff Meeting (129)
- ❑ Job Aid 2: Staff Meeting Agenda Template (130)
- ❑ Worksheet: Topics for Staff Meeting Agenda (131)

This activity supports the following laboratory management tasks and SLIPTA checklist items	
Management Tasks 	1.5 Conduct weekly staff meetings to coordinate activities, review lab operations, reward success, celebrate accomplishments, and resolve issues 1.11 Implement measures to motivate staff to improve quality of work and productivity (e.g., training, job rotation, employee of the month, thank-you letter, etc.)
Checklist Items 	1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? (Communication (internal and external); Resolution of Complaints and Feedback) 3.8 Staff meetings Are staff meetings held regularly?

This activity is related to the following activities:	
	Module 1: Personnel Files, Competency Assessment Module 6: Using Standard Operating Procedures

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Explain why communication is important for laboratory operations	5 min	Slides1.48 to 1.49	
2	Discuss how to set up and conduct a staff meeting Overnight Homework	10 min	Job Aid 1 Job Aid 2	
3	Introduce activity	5 min	Slide 1.50 Worksheet	
4	Conduct the activity	Throughout training		
5	Debrief the activity	15 min	Tool	
6	Conclude the Activity	5 min		
	TOTAL TIME:	**40 min**		

PROCESS

Preparation

- Prepare for overnight homework.

 (see Step 2)

Step 1. Explain why communication is important for laboratory operations 5 min

- Project Slide 1.48. Review the associated tasks.
- Project Slide 1.49. Review the guidelines for quality assurance. This activity focuses on **communication and using teams**.
- **Communicating** to staff members allows all staff to be informed and to develop a shared vision and shared goals for laboratory services.
- Giving staff input into the meeting – from contributing items to the meeting agenda to involvement in discussions, brainstorming, and future plans – leads to better quality decisions and highly motivated staff. Ideas, activities and commitment to the organization improve when members work as a **team** and see their impact on the decision making process.

Step 2. Discuss how to set up and conduct a staff meeting 10 min

- Project Slide 1.50. Present Job Aid 1: Tips for Planning and Conducting a Staff Meeting and Job Aid 2: Staff Meeting Agenda Template.
- Ask participants to review overnight. Request each participant to return the next day with one favorite tip for sharing.
- Throughout the remainder of the workshop, when participants return from breaks, or first arrive in the morning, or transition between activities, randomly ask participants to share one tip that they will use in their staff meetings. Keep a running list of these tips on a flipchart page in the classroom.

Step 3. Introduce the activity 5 min

- Present Worksheet: Topics for Staff Meeting Agenda.
- Remind participants that any item that requires the attention, support, or action of the staff is appropriate material for a staff meeting agenda.
- Ask participants to be attuned throughout the workshop to items that would be important to review, discuss, or present at a staff meeting.
- Encourage participants to write any items that they deem appropriate for their own staff meeting agenda on the Worksheet.
- Inform participants that there will be a contest to determine who can fill their Worksheet with the greatest number of appropriate items for communicating at a staff meeting.

Step 4. Conduct the activity

- Remind participants intermittently throughout the course of the ongoing staff meeting agenda activity.
- Make connections occasionally during the various activities to give the participants guidance on what items would qualify for the agenda.

Step 5. Debrief the activity 15 min

- On the closing day of the workshop, save 15 minutes to review the Worksheet. Refer to the facilitator's Tool: Topics for Staff Meeting Agenda Answers for appropriate items for an agenda. Move systematically around the room to elicit responses on what topics the participants have placed on their respective agendas.
- Certify the participant's Worksheet with the greatest number of appropriate items as a winner.
- Summarize the information from Job Aid 1: Tips for Planning and Conducting a Staff Meeting and Job Aid 2: Staff Meeting Agenda Template.

Step 7. Conclude the Activity 5 min

- Link to *Creating a Management Calendar* activity. Discuss ways to use the calendar as a forum for building a staff meeting agenda.
- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- Staff meetings provide an opportunity for communication regarding laboratory operations.
- These meetings also promote team building and shared decision-making capacity among the staff.
- Conducting a meeting requires planning before the meeting, leadership during the meeting, and follow-up after the meeting.

ACTIVITY OBJECTIVES MET?

Can they:

- Conduct an effective, productive, successful, staff meeting that is as short as possible?
- Populate an agenda with appropriate items for a staff meeting?

➢➢ Connections and Applications

- **Improve Communication and use teams** are two of the guidelines for quality assurance**.** This activity focuses on improved communication with the laboratory staff. Staff meetings keep the laboratory team collectively informed of issues outside the laboratory and aware of the latest policies and practices inside the lab. Promoting development of a shared vision and shared goals facilitates development of a cohesive team. Effective teams provide more effective and efficient laboratory services.
- **Daily Briefings - Teamwork** can also be enhanced with daily briefings – short 2 minute updates at the beginning of the work day to inform staff of the current situation in regards to equipment, personnel issues, workstation assignments, meetings, critical patient care information, etc. This also serves as an opportunity to greet staff, make sure that all staff knows each other, and to start the workday on time.
- **Staff Meeting** – Link to *Management Calendar*. As different topics arise during the week, managers and staff can add discussion points to the agenda by placing notations on the margins of the management calendar.

Tool: Topics for Staff Meeting Agenda Answers

List possible topics, covered in the various activities, which would be appropriate for communication at a staff meeting.

SOP Review – new, updated, routine, or troublesome procedures reviewed
Laboratory Statistics – monthly tallies, discordant rates, occurrence logs, etc.
QI Indicators – reports on trends, unusual occurrences, etc.
EQA – survey results
Upcoming Events – i.e. – surveys, assessments, competency assessment, etc.
Personnel Issues – Competency Assessment, Annual Reviews, Duty Roster, Absenteeism,
Safety – Policies, Training, Assessment Results
Improvement Projects – ongoing – keeping aware and updated, upcoming, etc,
Reports from other sections of the hospital
Problems arising during the week's testing
Customer Service – survey results, complaints,
Quality Assurance issues – calibration, QC, etc.
Equipment – new equipment coming on line, service policies or updates, troubleshooting, disposing of non-functioning equipment, maintenance
Manager's Review – State of logs & record keeping
Annual reviews completed – SOPs, Safety Manual, Quality Manual, etc.
Systemic or ongoing problems
Employee Recognition – Employee of the month, Thank you messages, etc.
Laboratory Promotion – Lab Week, local newspaper feature,
Policies – keep updated
Budgetary concerns
Documents & records – complete, storage,

Job Aid 1: Tips for Planning and Conducting a Staff Meeting

The Goal: To conduct a meeting that is effective, productive, predictable, successful, and as short as possible.

Before The Meeting

1. Define the purpose of the meeting
2. Develop an agenda in cooperation with the staff.
3. Distribute or provide the agenda and circulate background material, documents or articles prior to the meeting.
4. Choose an appropriate meeting time. Set a time limit and stick to it. To keep meetings short, consider having members stand during the meeting.
5. Choose a location suitable to your group's size, and if possible, arrange the room so that members face each other, i.e., a circle or semi-circle.
6. Use visual aids for interest (e.g., posters, diagrams, etc.). Post a large agenda up front to which members can refer.
7. Be sure everyone knows where and when the next meeting will be held.

During The Meeting

1. Greet members and make them feel welcome.
2. Start on time. End on time.
3. Review the agenda and set priorities for the meeting.
4. Stick to the agenda.
5. Encourage group discussion to get all points of view and ideas.
6. Encourage feedback. Ideas, activities and commitment to the organization improve when members see their impact on the decision making process.
7. Keep conversation focused on the topic. Feel free to ask for only constructive and non- repetitive comments.
8. Keep minutes of the meeting for future reference in case a question or problem arises.
9. As a leader, be a role model by listening, showing interest, appreciation and confidence in members. Admit mistakes.
10. Summarize agreements reached and end the meeting on a unifying or positive note. Summarize action items, indicating who is responsible, and when the activities are due.
11. Set a date, time and place for the next meeting.

After The Meeting

1. Write up and distribute minutes within 3 or 4 days.
2. Discuss any problems during the meeting with other staff; come up with ways improvements can be made.
3. Follow-up on delegation decisions. See that all members understand and carry-out their responsibilities.
4. Give recognition and appreciation to excellent and timely progress.
5. Put unfinished business on the agenda for the next meeting.
6. Conduct a periodic evaluation of the meetings. Note any areas that can be analyzed and improved for more productive meetings.

And remember, effective meetings will keep them coming back!

Excerpts from: Effective Meetings (2008). Retrieved May 26, 2009, from Meeting Wizard Web site: http://www.meetingwizard.org/meetings/running-effective-meetings.cfm

Job Aid 2: Staff Meeting Agenda Template

STAFF MEETING AGENDA

Date/Time: _____ Location: _____

Meeting Goal: _____

Attendees: _____

Leader: _____ Facilitator: _____

Note-taker: _____ Timekeeper: _____

TOPIC	TOPIC LEAD	TIME
Plan Next Action(s)		
Plan Aim/Goal and Agenda for next meeting		
Evaluate/Process Check (How can we improve this meeting?)		

Worksheet: Topics for Staff Meeting Agenda

List possible topics, covered in the various activities, which would be appropriate for communication at a staff meeting.

ACTIVITY Creating a Personnel File

Module 1

PURPOSE:

Managing human resources requires documentation and organization of employee information, education, work history, training, and performance data. This fast-paced activity allows participants to give a rationale for including items in a personnel file and to indicate which items are inappropriate for personnel files.

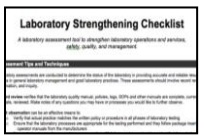
RESOURCES FOR FACILITATOR:

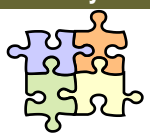
- ❑ PowerPoint slides: 1.51 to 1.52
- ❑ Tool 1: Personnel Files (132)
- ❑ Tool 2: Personnel File Guide
- ❑ Flip chart & markers

RESOURCES FOR PARTICIPANT:

- ❑ Job Aid: General Guidelines for Personnel Files (133)

This activity supports the following laboratory management tasks and SLIPTA checklist items

Management Tasks 	1.6 Meet with staff individually to communicate expectations, provide feedback, coaching, or on-the-job training to ensure competency and productivity 1.7 Provide/coordinate new-hire orientation and training to staff 1.8 Maintain and update personnel records (training, certification, competency assessment 1.11 Implement measures to motivate staff to improve quality of work and productivity (e.g., training, job rotation, employee of the month, thank-you letter, etc.)
Checklist Items 	1.2 Laboratory Quality Manual Is there a current laboratory quality manual, composed of the quality management system's policies and has the manual content been communicated to, understood and implemented by all staff? 1.5 Laboratory Policies and Standard Operating Procedures Are policies and/or standard operating procedures (SOPs) for laboratory functions, technical and managerial procedures current, available and approved by authorized personnel? (Personnel Management; Personnel Training; Competency Assessment; Authorization; Review of Staff Performance) 3.2 Organizational Chart and External/Internal Reporting Systems Is an organizational chart available that indicates the relationship between the laboratory and its parent organization? 3.3 Laboratory Director Is the laboratory directed by a person(s) with the competency, delegated responsibility to perform? 3.4 Quality Management System Oversight Is there a quality officer/manager with delegated responsibility to oversee compliance with the quality management system? 3.5 Personnel Filing System Are records of personnel maintained? 12.17 Staff Vaccinations Are laboratory personnel offered appropriate vaccination and employee medical surveillance? 12.21 Laboratory Safety Officer Is a trained safety officer designated to implement and monitor the safety program in the laboratory, including the training of other staff?

This activity is related to the following activities:	
	Module 1: How Do You Assign Personnel to Tasks?, Competency Assessment, Planning and Conducting a Staff Meeting

ACTIVITY AT-A-GLANCE				
Step		**Time**	**Resources**	**Key Points**
1	Why is a personnel file useful and important?	5 min	Slide 1.51	
2	Introduce the activity	5 min	Slide 1.52	
3	Conduct the activity	35 min	Tool 1 Tool 2 Flipchart & markers	
4	Debrief the activity	5 min	Job Aid	
5	Conclude the Activity	5 min		
	TOTAL TIME:	**55 min**		

PROCESS

Preparation

- Print one copy of each document found in the Tool 1: Personnel Files; prepare for distribution
- Alternatively, use actual Personnel File documents from in-country sources.

Step 1. Why is a personnel file useful? 5 min

- Project Slide 1.51. Review tasks.
- Ask participants why a personnel file would be useful?
- Suggested responses include:
  - Keeps accurate and up-to-date information on employees organized and handy
  - Repository for documentation & storage of employee work related record

Step 2. Introduce activity 5 min

- Project Slide 1.52. Inform participants that they will each be given one sample document from a personnel file.
- Then each participant will be asked, in turn, to stand, state the type of information, and give a rationale for including this document in a personnel file.
- Inform participants that there may be a few documents that are not appropriate for a personnel file. Encourage participants to identify these documents and give a rationale for not including this information.
- Note: Specific policies and practices regarding personnel files may vary by country. Emphasize the importance of creating personnel files and devising uniform policies regarding the file. Focus the discussion on these aspects. Do not become distracted by the specific details of each country practice.

Step 3. Conduct activity 35 min

- Distribute all documents - either copied from the Tool 1: Personnel Files or secured from the country - to the participants; one document per participant.
- Move systematically around the room, giving each participant one minute to present their conclusion to the audience
- Refer to Tool 2: Personnel File Guide. Make sure that the importance of each item is emphasized.
- Keep activity fast-paced.
- As activity progresses, begin writing on flip chart general categories of material that does and does not belong in a personnel file

Step 4. Debrief the activity 5 min

- Summarize broad categories that are or are not to be included in personnel files from flip chart.
- Present Job Aid: General Guidelines for Personnel Files

Step 5. Conclude the Activity 5 min

- Link to *How Do You Assign Personnel to Tasks?*, *Planning & Conducting a Staff Meeting*, and the *Competency Assessment* activities.
- Highlight or reiterate the key messages below.
- Make sure participants achieved objectives of the activity.

KEY MESSAGES

- Personnel files provide an organized record of work-related information.
- Documentation in the laboratory extends to human resource issues including performance, competency, education, training, etc.
- These human resource files are confidential and require secure storage.
- An employee's medical records are confidential and should be stored separately from other 'business' records.

Can they:

- Provide reasons for creating a personnel file?
- Identify items that belong in a personnel file?
- Provide reasons for including or excluding an item in the personnel file?

ACTIVITY OBJECTIVES MET?

Connections and Applications

Policy – The personnel file is legitimized by laboratory policy specifying its existence, its contents, its uses, and its accessibility to whom and under what circumstances. Policy is crucial for all aspects of laboratory operations. Laboratory Policy is the foundation of a quality laboratory.

Tool 1: Personnel Files

Personnel Files
Right click here to hyperlink to the document containing the following sample personnel file documents.
1. New Employee Orientation Form (2 pages)
2. Customer Satisfaction Survey–Commended
3. Standard Operating Procedure Sign-Off
4. Quality Manual Sign-Off
5. Patient Safety Goals Training Certificate
6. Resume / Curriculum Vitae
7. Educational Diploma or Certificate
8. Position Description
9. Performance Expectations
10. Verify Receipt of Corporate Compliance / Privacy Hotline Contact Information
11. Certification by Professional Board
12. Training Certificate – Rapid HIV Testing
13. Performance Review
14. Occurrence Management Procedure Review
15. Code of Ethics Review
16. Thank You Letter
17. Disciplinary Action
18. Individual Competency Evaluation with Unsupported Opinion by Supervisor
19. Accidental Exposure to Chemicals Report
20. Employee Contact Information
21. Application for Employment
22. Individual Competency Evaluation
23. Recording and Investigation of Incidents
24. Employee Handbook / Benefits Receipt
25. Occurrence Report Form
26. Letter of Commendation from Lab Director

Tool 2: Personnel File Guide

DOCUMENT	Appropriate Y or N	COMMENT
New Employee Orientation Form (2 pages)	Y	
Customer Satisfaction Survey– Commended	Y	
Standard Operating Procedure Sign-Off	Y	
Quality Manual Sign-Off	Y	
Patient Safety Goals Training Certificate	Y	
Resume / Curriculum Vitae	Y	
Educational Diploma or Certificate	Y	
Position Description	Y	
Performance Expectations	Y	
Verify Receipt of Corporate Compliance / Privacy Hotline Contact Information	Y	
Certification by Professional Board	Y	
Training Certificate – Rapid HIV Testing	Y	
Performance Review	Y	
Occurrence Management Procedure Review	Y	
Code of Ethics Review	Y	
Thank You Letter	Y	
Disciplinary Action	Y	
Individual Competency Evaluation with Unsupported Opinion by Supervisor	N	Unsupported opinions do not belong in personnel files.
Accidental Exposure to Chemicals Report	Y	
Employee Contact Information	Y	
Application for Employment	Y	
Individual Competency Evaluation	Y	
Recording and Investigation of Incidents	Y	
Employee Handbook / Benefits Receipt	Y	
Occurrence Report Form	Y	
Letter of Commendation from Lab Director	Y	

Job Aid: General Guidelines for Personnel File

Material to Include in a Personnel File

- Education / Training
  - Documentation of all education & training including:
    a. Preservice
    b. In-service
    c. Continuing Education
- Employment History
  - Recruiting / Job Application / Interview report
  - Summary of experience
  - Screening / Verification
  - Contract – including dates of employment
  - Orientation / Receipt of Handbook
  - Job Description
- Certification & Licensure (if required)
- Performance Management
  - Performance review – New employees within first 6 months
  - Performance review – Annual for all employees
  - Commendations
  - Thank-you letter
  - Comments regarding staff on customer satisfaction surveys
  - Work-related incident and/or accident
  - Discipline
- Competency Assessment
  - Assessed on his/her assigned duties
- Wage, Salary, and Benefit Information
- Human Resource Information
  - Curriculum Vitae or Resume
  - Diplomas / Certificates
  - Contact Data
  - Demographic information
  - Employee Health Services
  - Shifts & Staffing Patterns

Material to Omit from a Personnel File

- Medical Records (Always consult specific country policy; however, in general, it is best to keep medical records separate from the personnel file.)
- Unsupported opinions