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# Activity-Based Costing ABC- “101”

**AFMC INNOVATION OFFICE**

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# Purpose

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**Provide a basic understanding of Activity-Based Costing (ABC) and how to implement it.**





# Overview

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- **Why Is ABC Important**
- **What Is ABC?**
- **Performing an ABC Analysis**
- **Case Study**
- **The Way Ahead**
- **Summary**



# Why Is ABC Important? *QMIO*

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- Cost has become equal in importance to performance
- We must reduce costs to help fund force modernization
- Current cost accounting systems designed for financial control/reporting to Congress- not managing enterprises
- Industry, state and local governments use ABC to perform meaningful cost analysis
- Centers and Business Areas need to determine true costs of their goods and services



# Why Is ABC Important? *QMIO*

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- Complies with the Government Performance and Results Act (GPRA)
- Provides insight to avoid “peanut butter spread” approaches to resource allocation
- Shows actual costs
- Facilitates better decision making with scarce resources
- Shows cost consequences of resource management decisions



# What Is ABC?

## Traditional Vs. ABC



### MATERIEL MANAGEMENT

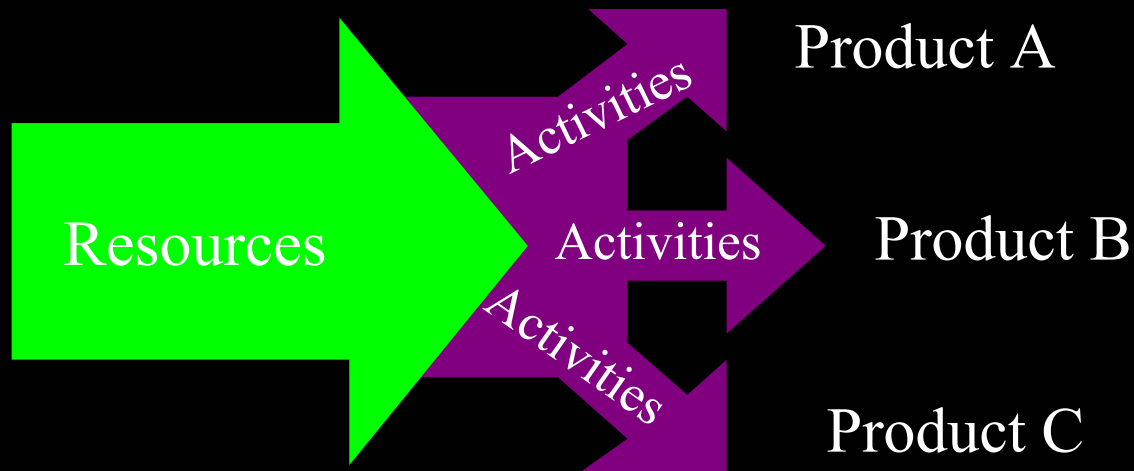
Traditional Accounting Perspective		Activity-Based Perspective	
Civilian Pay	\$1,350,000	Compute Requirements	\$430,000
Benefits	495,000	Purchase Materiels	940,000
TDY	45,000	Store Materiels	250,000
Bdlg Maintenance	220,000	Inspect Materiels	178,000
Supplies	52,000	Deliver Materiels	52,000
Training	38,000	Perform Management	350,000
<b>Total</b>	<b>\$2,200,000</b>	<b>Total</b>	<b>\$2,200,000</b>



# What is ABC?

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ABC is a costing methodology based upon the fact that different activities and products consume different proportions of resources.





# What Is ABC?



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- ABC involves a two-step allocation process
    - Step one: Allocate resource costs to the actual processes (activities) that consume those costs
    - Step two: Allocate activity costs to the actual products (cost objects) delivered.

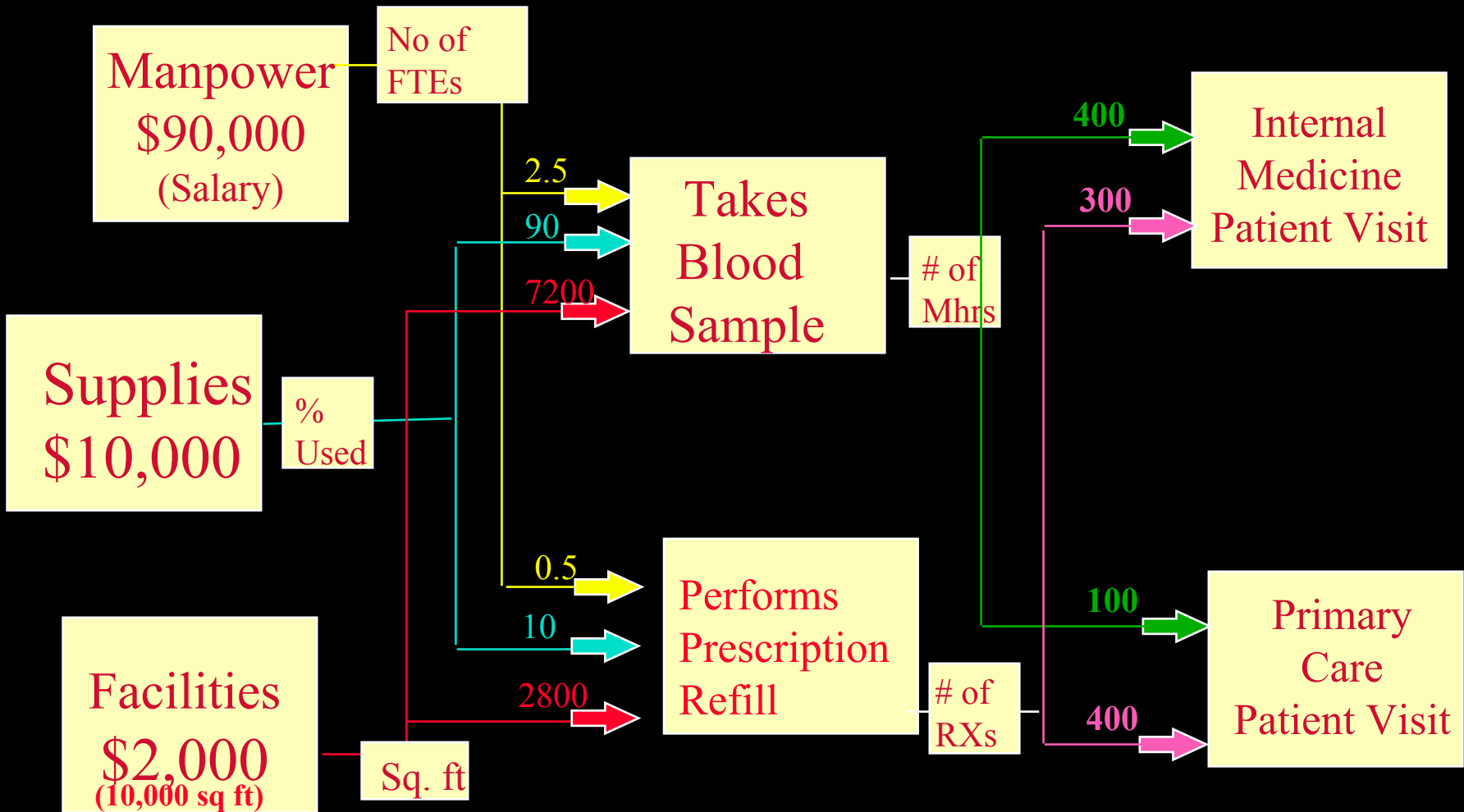


# What is ABC?



QMIO

## AIR FORCE MEDICAL CENTER EXAMPLE





# Major Components of ABC

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 *QMIO*

- **Resources**
- **Activities**
- **Cost Objects**
- **Cost Drivers**
  - **Resource Drivers**
  - **Activity Drivers**



# What Is ABC?

## Resources

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- Examples of resource accounts
  - Manpower
  - Supplies
  - Equipment
  - Facilities
  - Utilities



# What is ABC? RESOURCES



AIR FORCE MEDICAL CENTER EXAMPLE

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Manpower

\$90,000

(Salary)

Supplies

\$10,000

Facilities

\$2,000

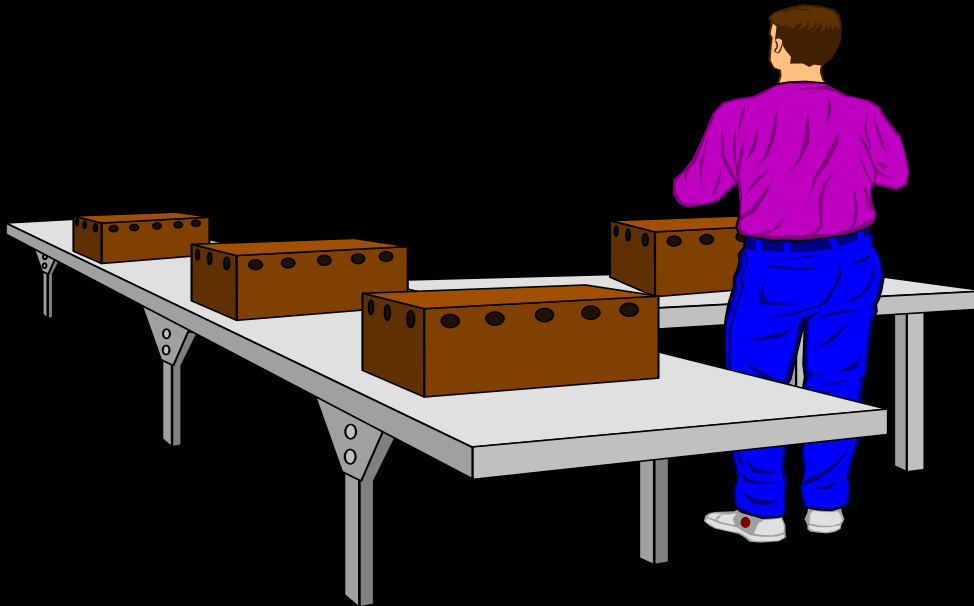
(10,000 sq ft)



# What Is ABC? Activities



Processes that accomplish an organization's mission--the steps necessary to deliver a product to a customer.





# What Is ABC?

## ACTIVITIES



### AIR FORCE MEDICAL CENTER EXAMPLE

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Manpower  
\$90,000  
(Salary)

Takes  
Blood  
Sample

Supplies  
\$10,000

Performs  
Prescription  
Refill

Facilities  
\$2,000  
(10,000 sq ft)



# What Is ABC? Cost Objects

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The actual products delivered to a customer (internal or external) i.e., deliverables.

Examples of cost objects:

- Internal Medicine Exam Completed
- Aircraft Part Delivered
- Oil Changed



# What is ABC?

## Cost Objects



Manpower  
\$90,000  
(Salary)

Takes  
Blood  
Sample

Internal  
Medicine  
Patient Visit

Supplies  
\$10,000

Performs  
Prescription  
Refill

Primary  
Care  
Patient Visit

Facilities  
\$2,000  
(10,000 sq ft)



# What Is ABC?

## Cost Drivers

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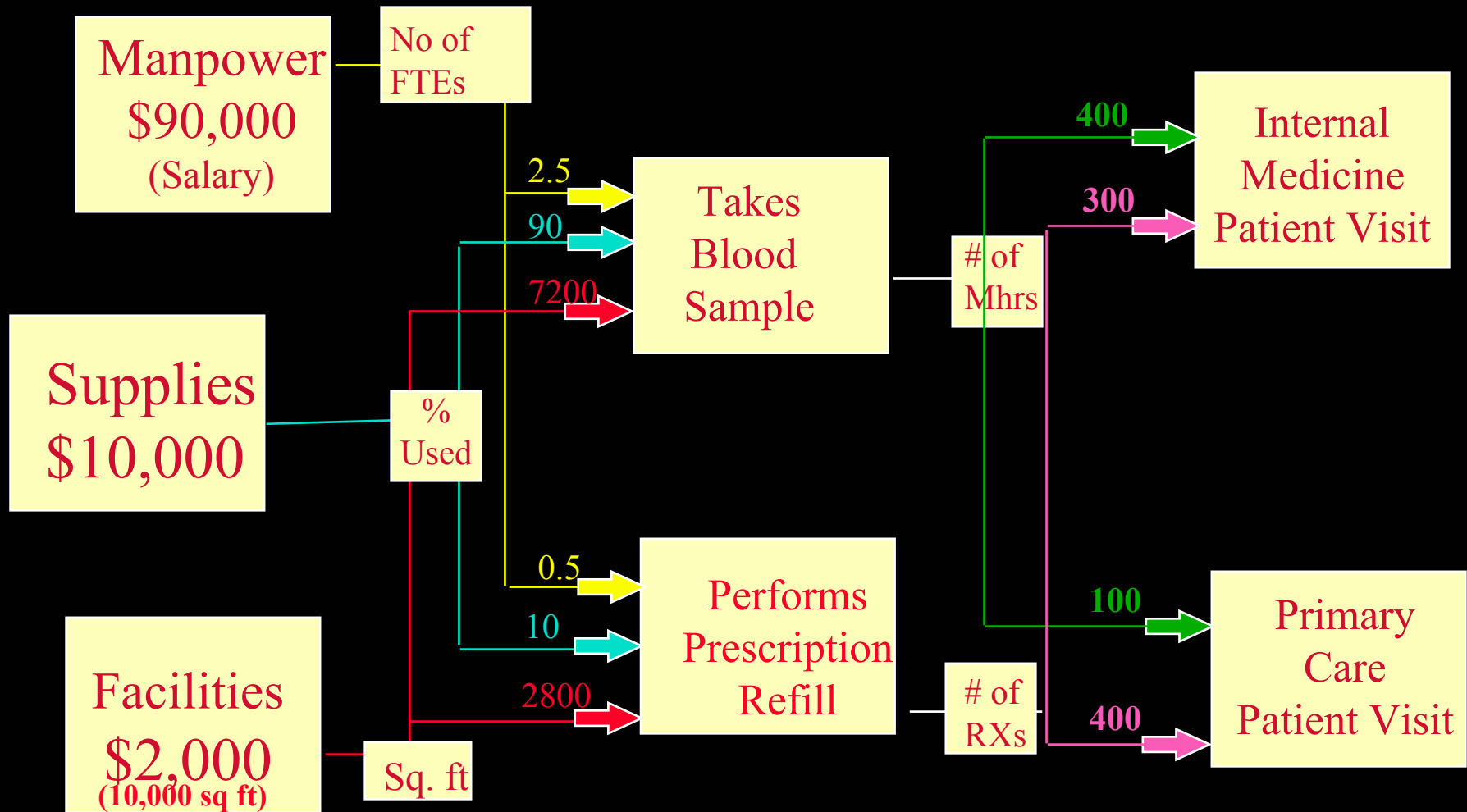


- Two types of cost drivers--resource drivers and activity drivers
  - Resource drivers allocate resources to activities based upon actual consumption
  - Activity drivers indicate consumption of activities by cost objects
  - Examples of cost drivers:
    - Man-hours (expended)
    - Square feet (occupied)
    - Units of issue (used)
    - Procedures (performed)



# What is ABC?

## Cost Drivers





# Performing an ABC Analysis Preparation

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- Brief the organization from top to bottom to gain support
- Determine study team
- Gather initial data
  - Obtain organization/flow charts and personnel rosters of the work center(s)
  - Review mission/function statements and other documents
  - Gather information indicating consumption



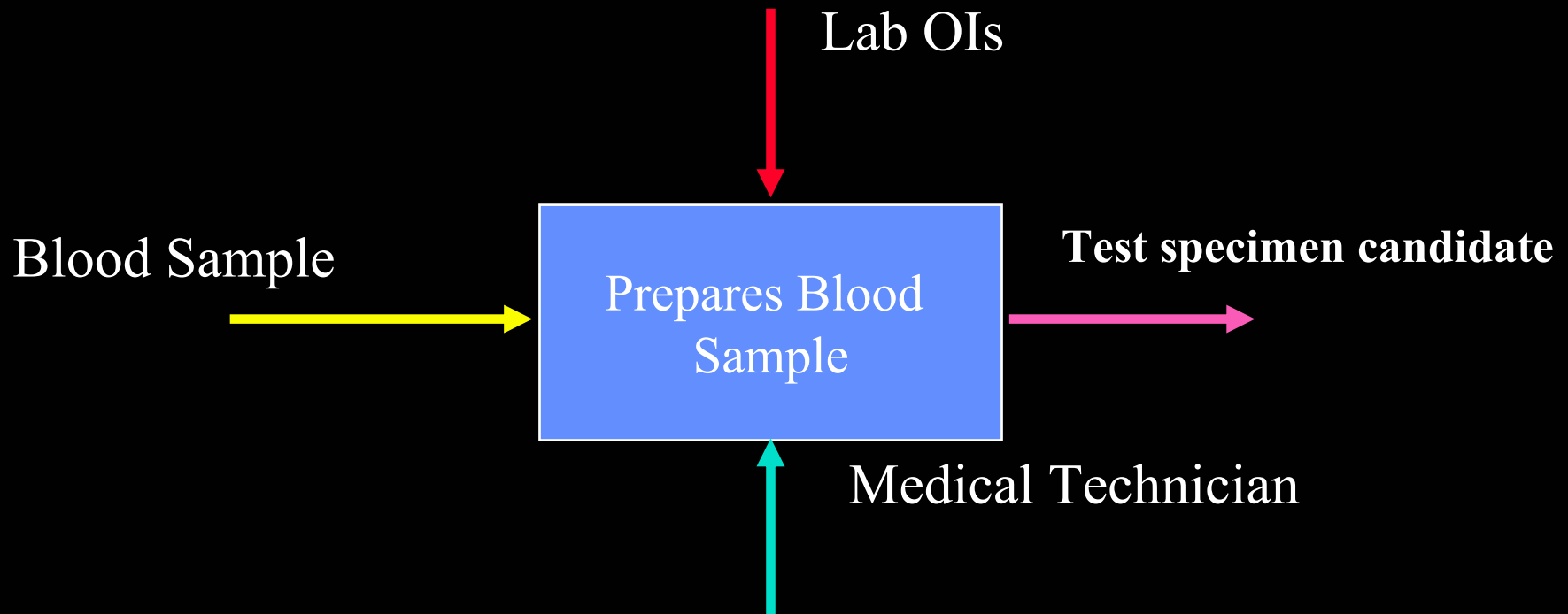
# Performing an ABC Analysis *QMIO*

## The Activity Model

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- Map the processes
  - Hint: Start with outputs
    - Integrated DEFinition For Functional Modeling (IDEF-0) widely used





# Performing an ABC Analysis

*QMIO*

## Build the ABC Framework

- Input IDEF model directly into ABC software and begin the framework

Activity Model Component	Activity-Based Costing Component
Mechanisms	Resource Centers &Accounts
Activities	Activity Centers & Accounts
Outputs	Cost Object Centers & Accounts



# Performing an ABC Analysis

*QMIO*

## Develop the Activity Data Collection Plan

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- Determine potential cost drivers
- Decide on data that needs to be collected to further understand the activity
  - Example: If man-hours are an activity driver for the manpower resource account, you will need to know the average cycle time to accomplish this activity



# Performing an ABC Analysis

## Process Analysis

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- Work with Functional/Financial experts to determine
  - Personnel costs
  - Supplies used
  - Equipment used and service life
- Determine process cycle time
- Partner with Functionals and FM on treatment of overhead costs



# Performing an ABC Analysis

## Data Collection Methods

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- Measure process cycle time
  - Techniques:
    - Time Study
    - Work Sampling
    - Good Operator Timing
    - Personnel Interviews
    - Predetermined Time Standards



# Calculate Costs



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- Enter data collected into model
  - Calculate activity/unit costs
    - Note: software will accomplish this for you



# Case Study

## Wilford Hall Medical Center

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- AFCQMI partnered with Wilford Hall Medical Center to conduct process mapping, ABC, and simulation studies (Mar 96 to present)
- Two clinics studied
  - TRICARE HMO (120 assigned resources)
  - OB/GYN (65 assigned resources)
- Deliverables
  - IDEF Model
  - ABC Model
  - Simulation Model

# Medical Expense Performance Reporting System (MEPRS) vs. ABC

<u>MEPRS</u>	<u>Final Cost</u>	<u>ABC</u>	<u>Final Cost</u>
<u>Visit Type A</u>	<u>\$31.29</u>	<u>Visit Type A</u>	<u>\$15.96</u>
<u>Visit Type B</u>	<u>\$118.98</u>	<u>Visit Type B</u>	<u>\$24.94</u>
<u>Visit Type C</u>	<u>\$70.23</u>	<u>Type C (Routine)</u>	<u>\$15.08</u>
		<u>Type C (Physical)</u>	<u>\$45.72</u>
<u>Visit Type D</u>	<u>\$47.31</u>	<u>Type D (Trtmnt)</u>	<u>\$192.62</u>
		<u>Type D (Appt)</u>	<u>\$49.79</u>

**\*Ancillary costs not included in either MEPRs or ABC figures.**



# Case Study RESULTS

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- Saved \$110,000/year in O&M funds
  - Reduced Med Tech staff
- Justified a new voice mail system
  - Diverted Nurse man-hours to Nurse duties vs. phones
- Allowed clinic members to see “systemic” costs
- Allowed clear, logical mapping of processes for future improvements
- Reduced customer Congressional complaints from 1/week to less than 1/quarter
  - Improved layout/patient flow



# The Way Ahead

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- Learn how to do ABC
- Brief potential users
- Identify initial high potential pay-off projects for implementation
- Determine augmentation team
- Initiate project



# Summary



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- If we are to reduce costs, we must know more about current costs
  - Knowing costs, coupled with performance data, provides powerful insights
  - Cost/performance information makes meaningful benchmarking possible and useful
  - Useful benchmarking facilitates dramatic improvement
  - Can be applied everywhere, not just in areas subject to outsourcing and privatization
  - Insight into cost and performance an enabler of continuous improvement