



**PATIENT SAFETY:  
AN ESSENTIAL ROLE OF  
LABORATORY PROFESSIONALS**

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**Diagnostic errors – an ongoing concern**


- ~251,000 deaths/year
- 2014 study:
  - Diagnostic errors occur ~12 million times/year in U.S.
  - 1 in 20 adults

Singh, H., Meyer, A., & Thomas, E. (2014). The frequency of diagnostic errors in outpatient care: Estimations from three large observational studies involving U.S. adult populations. *BMJ Quality & Safety*, 23, 227-231.

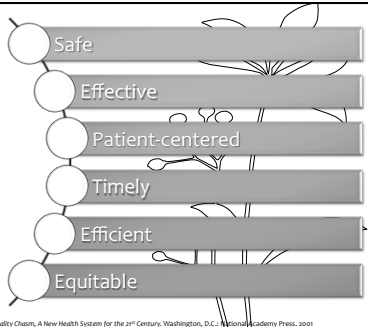
**Objectives**

- Discuss patient safety goals
- Evaluate the outcomes of patient safety errors
- Identify methods to improve patient safety with respect to the clinical laboratory



**According to  
Institute of  
Medicine, health  
care should be:**

- Safe
- Effective
- Patient-centered
- Timely
- Efficient
- Equitable



Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C.: National Academy Press, 2001.

**1<sup>st</sup> domain of Health Care Quality**

**Safe**

- Avoid harm to patients from the care that is intended to help them

**What can we do in the lab?**

- Examine processes → identify & manage risks that could lead to failure and lead to patient harm
- Increased turnaround time
- False positive or false negative results
- Inappropriately performed venipuncture

**2<sup>nd</sup> domain of Health Care Quality**

**Effective**

- Provide services based on scientific knowledge to all who could benefit.
- Refrain from providing services to those not likely to benefit

**What can we do in the lab?**

- Test specimens only when sample is adequate & appropriate for testing
- Evidence-based practice
- Remove antiquated & ineffective testing methodologies from testing menu

### 3<sup>rd</sup> domain of Health Care Quality

#### Patient-centered

- Provide care that is respectful of patients' needs & values
- Ensure patient values guide all clinical decisions

#### What can we do in the lab?

- We have ability to enhance patient care experience
- Effective communication & alleviate anxiety
- Shift focus from specimen to patient

### 4<sup>th</sup> domain of Health Care Quality

#### Timely

- Reduce delays for those who receive & give care

#### What can we do in the lab?

- Monitor turnaround time (TAT)
  - Time between receipt of sample and test reporting
  - Time between test ordered and treatment decision
- Effective communication with health care team

### 5<sup>th</sup> domain of Health Care Quality

#### Efficient

- Avoid waste (includes equipment, supplies, ideas, & energy)

#### What can we do in the lab?

- Examine total testing process
- Eliminate activities or processes that are repetitive or unnecessary

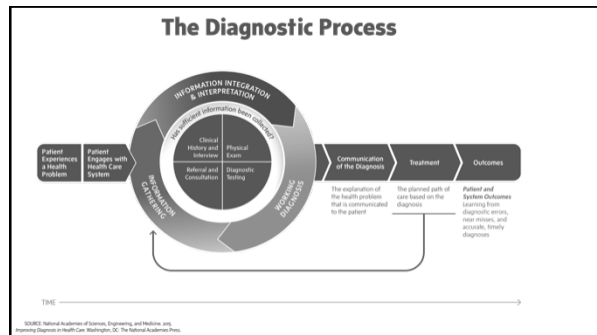
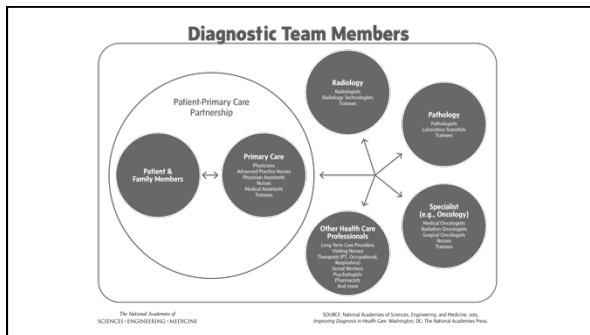
### 6<sup>th</sup> domain of Health Care Quality

#### Equitable

- Provide care that does not vary in quality because of personal characteristics

#### What can we do in the lab?

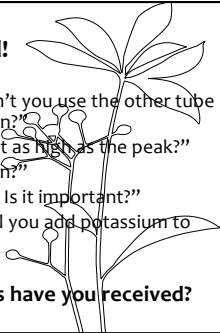
- Provide highest quality of care to all patients
- Do not discriminate
- Provide educational materials



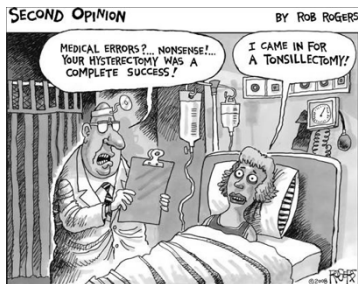
**We are the EXPERTS in our field!**

- “I sent two tubes of blood to you. Can't you use the other tube for that recheck on the type and screen?”
- “Why is the trough for vancomycin just as high as the peak?”
- “What does a critical hemoglobin mean?”
- “I have never heard of that organism. Is it important?”
- “We just sent a specimen for CBC. Will you add potassium to that?”

**What kind of questions/requests have you received?**

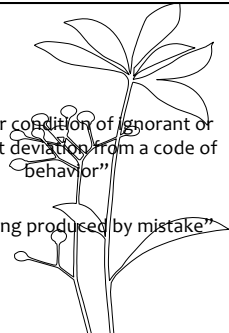


**MEDICAL ERRORS**



“An act or condition of ignorant or imprudent deviation from a code of behavior”

“Something produced by mistake”



<https://www.merriam-webster.com/dictionary/error>

**MEDICAL ERROR**

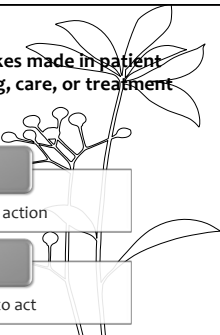
Mistakes made in patient testing, care, or treatment

**Error of commission**

- Medical error involving wrong action

**Error of omission**

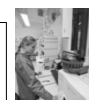
- Medical error due to a failure to act



**Total Testing Process**



Preanalytic

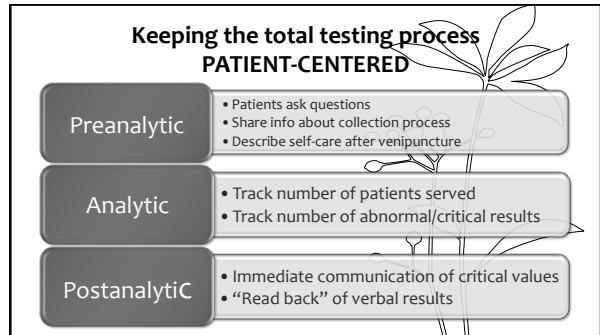
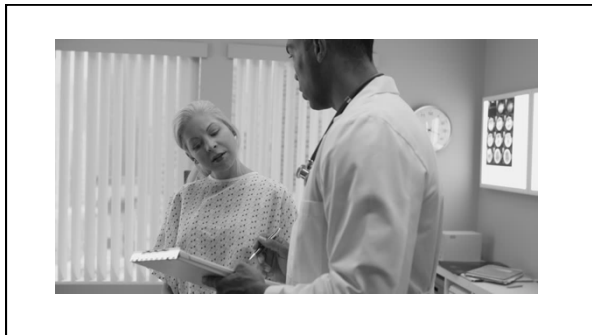
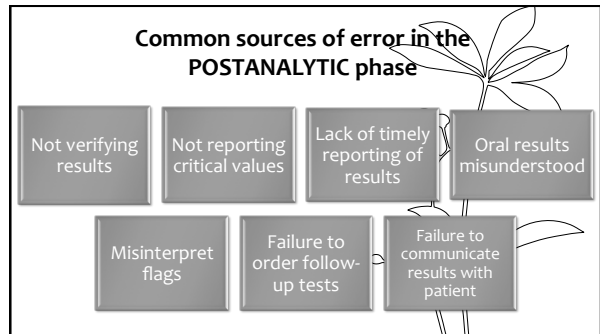
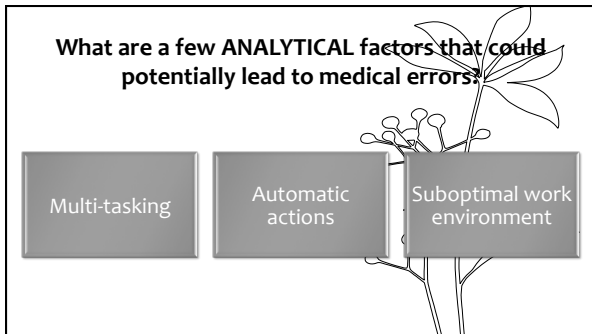
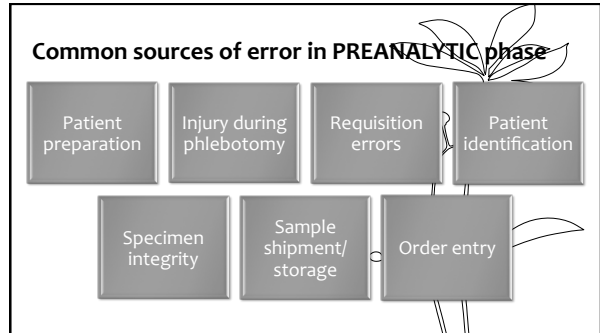
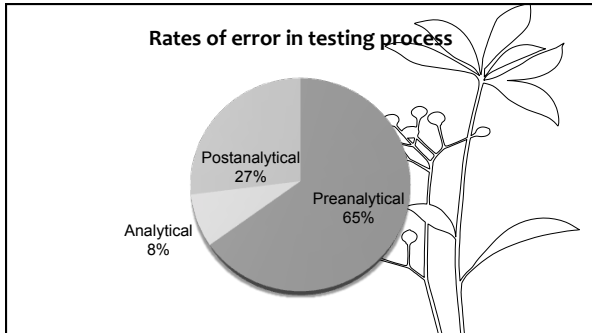


Analytic



Postanalytic

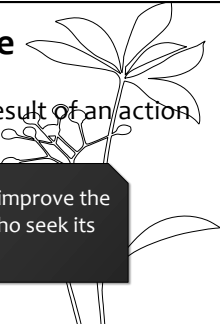




## Outcome

What has happened as a result of an action.

Goal of health care is to improve the health of individuals who seek its services




### Outcomes of Laboratory Services

<p><b><u>Positive Outcomes</u></b></p> <ul style="list-style-type: none"> <li>• Living</li> <li>• Recovering</li> <li>• Improving health</li> <li>• Receiving proper diagnosis</li> <li>• Proper treatment</li> <li>• Discharged</li> </ul>	<p><b><u>Negative Outcomes</u></b></p> <ul style="list-style-type: none"> <li>• Inappropriate treatment</li> <li>• Inappropriate medication adjustment</li> <li>• Incorrect diagnosis</li> <li>• Delayed diagnosis</li> <li>• Delayed treatment</li> </ul>
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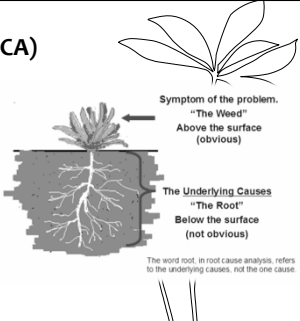
### What happens if there is a “near miss”?

- Try to handle non-punitively
- Recognize where the problem lies
  - Process flaw?
  - Managerial error?
- Mandatory reporting laws




### Root Cause Analysis (RCA)

Problem solving technique to identify the **root cause** of adverse event



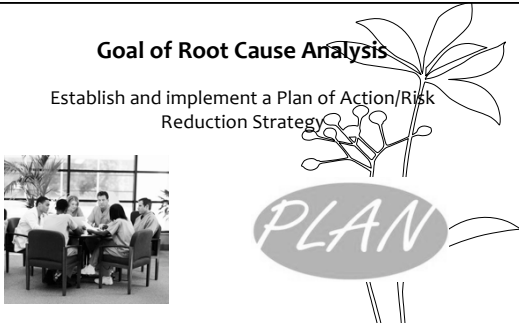
### Process of Root Cause Analysis

- **Meet with interdisciplinary team**
  - Write out detailed event description, including timeline
  - What was the intended process flow?
  - Were there any steps that did not occur as intended?
  - Human factors, equipment performance, environmental factors, external factors?
  - Staff properly qualified and currently competent?
  - Staffing appropriate levels? Performance met expectations?
  - Appropriate communication occurred?




### Goal of Root Cause Analysis

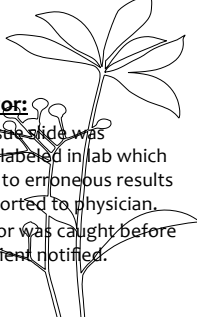
Establish and implement a Plan of Action/Risk Reduction Strategy



### Example of Root Cause Analysis

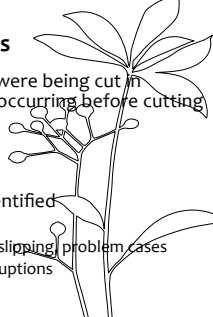


**Error:**  
Tissue slide was mislabeled in lab which led to erroneous results reported to physician. Error was caught before patient notified.



### Example of Root Cause Analysis

- Two different patients' tissue blocks were being cut in succession without labeling of slides occurring before cutting
- Steps of processes described
- Issues of error and potential error identified
  - Training checklist needed for histotechs
  - Interruptions in lab due to requests, coverslipping, problem cases
  - Equipment problems causing delays/interruptions
  - Slides not labeled prior to cutting




### Example of Root Cause Analysis

<u>Issue identified</u>	<u>Resolution</u>
1. Training checklist needed for histotechs	1. Update/implement checklist
2. Interruptions in lab due to requests, problem cases	2. Assess need for student worker or lab asst
3. Equipment problems causing delays/interruptions	3. Evaluate repair/replacement of coverslipper
4. Slides not labeled prior to cutting	4. Educate staff to prelabel all slides prior to cutting

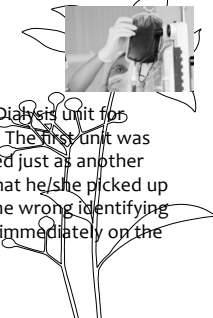
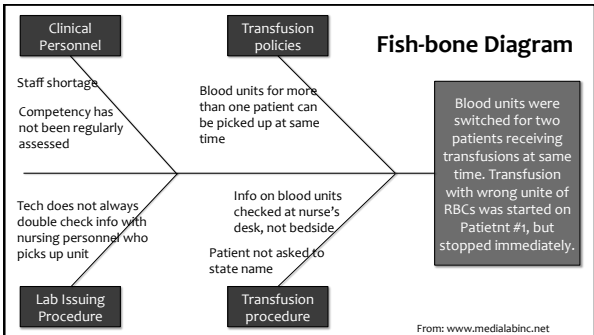
### Example of Root Cause Analysis

<u>Issue identified</u>	<u>Resolution</u>
5. Slide verification process not being used correctly	5. Update and upload policies & procedures
6. Lack of communication of problems from medical staff to section supervisor	6. Educate residents & faculty to notify section supervisor of problems/delays

### Uh-oh...


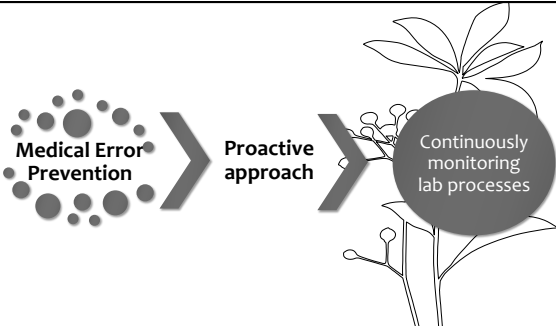


Two units of RBCs were taken to the Dialysis unit for transfusion of two different patients. The first unit was hung by one clinical person and started just as another clinical person noticed that the unit that he/she picked up for transfusing another patient had the wrong identifying information. The blood was stopped immediately on the first patient

### Benefits of Fishbone Diagram

- Helps determine root cause using structured approach
- Encourages group participation
- Utilizes knowledge from different disciplines
- Indicates possible variations in process
- Indicates areas where more data should be collected

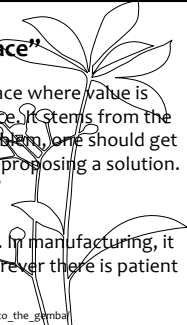



### Gemba – “the real place”

“Going to the gemba is going to the place where value is created, where the real work is taking place. It stems from the Japanese mindset that when there is a problem, one should get as close to it as possible and learn BEFORE proposing a solution. Problems are visible.”

“For detectives, gemba is the crime scene. In manufacturing, it is the factory floor. In health care, it is wherever there is patient interaction.”

[https://www.jointcommission.org/jc\\_physician\\_blog/leading\\_improvement\\_go\\_to\\_the\\_gemba/](https://www.jointcommission.org/jc_physician_blog/leading_improvement_go_to_the_gemba/)



### Gemba Board at University Health Shreveport



### Gemba Board at University Health Shreveport

#### Massive Transfusion Protocol

- **Problem Description:**
  - Transfusion Services wants to decrease the amount of time it takes to provide blood products to patients requiring massive transfusion.
- **Why?**
  - It takes too long to issue the first MTP pack.
- **Why?**
  - Issuing blood products to a specific trauma patient in the computer takes too long.
  - Blood products are not issued to specific departments in a timely manner.
- **Why?**
  - Transfusion Services personnel have to handwrite transfusion records or override multiple computer generated QA failures.
  - Some personnel assume blood will be delivered or sent through the pneumatic tube system.
- **Why?**
  - Patient testing is not complete at the time of blood issuance; the laboratory computer system (Sunquest) flags the incomplete testing for patient safety.
  - Personnel are unaware of blood product issue requirements.
- **Why?**
  - Sunquest is not designed adequately to accommodate emergency situations
  - Runners and department personnel are not trained properly in blood procurement and MTP protocol.

### Gemba Board at University Health Shreveport

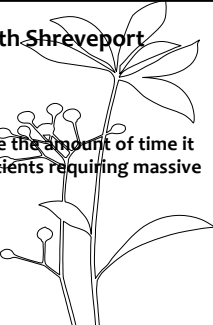
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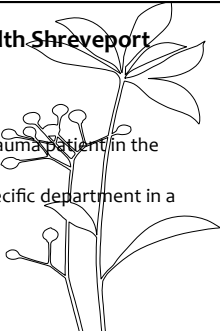
- It takes too long to issue MTP pack



**Gemba Board at University Health Shreveport  
Massive Transfusion Protocol**

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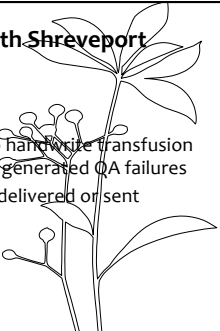
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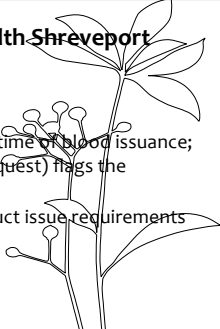
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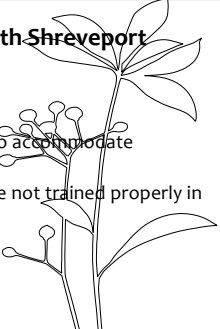
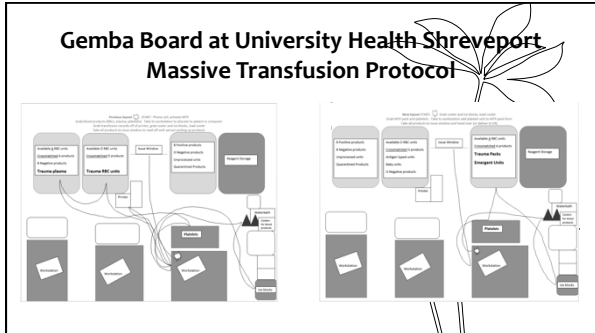
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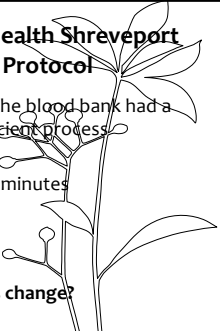



**Gemba Board at University Health Shreveport  
Massive Transfusion Protocol**

After changes were implemented the blood bank had a smoother, faster, more efficient process

Before project = 15-20 minutes  
After project  
**5 minutes!**

Who benefits from this change?

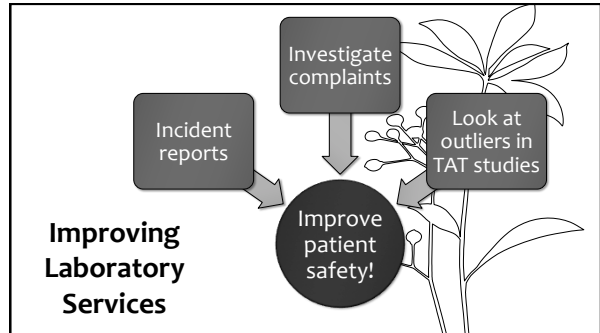




**GEMBA Board project**

Changes made resulted in a smoother, faster process which benefits the patient

Before project=15-20 minutes  
After project= 5 minutes!



**JOINT COMMISSION NATIONAL PATIENT SAFETY GOALS 2017 FOR CLINICAL LABORATORIES**

**The Joint Commission**

- Accredits health care organizations & programs
- Since 2001, published Patient Safety Goals

The Joint Commission **Patient Safety Goals 2017**

Patient Safety Goal	Methods to Meet Goals
Improve accuracy of patient identification	Use at least two patient identifiers when providing laboratory services
Improve effectiveness of communication among caregivers	Report critical results of tests and diagnostic procedures on a timely basis to the right person
Reduce the risk of health care-associated infections	Comply with either current CDC hand hygiene guidelines or the current WHO hand hygiene guidelines. Set goals for improving hand hygiene procedures

**1. Improve accuracy of patient identification**

- TWO IDENTIFIERS!
- Full name
- One other identifier:
  - DOB
  - Hospital number
  - MR number
  - Other unique number
- Label all specimens in presence of patient

## 2. Improve effectiveness of communication among caregivers

- Report in timely manner
- Define critical result
- Provide your name
- Determine whom you are speaking to
- Only given to personnel in charge of patient's care
- Read back information
- Document!
- Lab procedure for communication of critical results
- Monitor for compliance & timeliness

## 3. Reduce the risk of HAI

- Proper hand hygiene!
- CDC or WHO guidelines



### ASCLS Code of Ethics



The Code of Ethics of the American Society for Clinical Laboratory Science sets forth the principles and standards by which Medical Laboratory Professionals and students admitted to professional education programs practice their profession.

<http://www.ascls.org/about-us/code-of-ethics>

### ASCLS Code of Ethics Duty to the Patient



Medical Laboratory Professionals' primary duty is to the patient, placing the welfare of the patient above their own needs and desires and ensuring that each patient receives the highest quality of care according to current standards of practice. High quality laboratory services are safe, effective, efficient, timely, equitable, and patient-centered. Medical Laboratory Professionals work with all patients and all patient samples without regard to disease state, ethnicity, race, religion, or sexual orientation. Medical Laboratory Professionals prevent and avoid conflicts of interest that undermine the best interests of patients.

<http://www.ascls.org/about-us/code-of-ethics>

### ASCLS Code of Ethics Duty to the Patient



Medical Laboratory Professionals are accountable for the quality and integrity of the laboratory services they provide. This obligation includes maintaining the highest level of individual competence as patient needs change, yet practicing within the limits of their level of practice. Medical Laboratory Professionals exercise sound judgment in all aspects of laboratory services they provide. Furthermore, Medical Laboratory Professionals safeguard patients from others' incompetent or illegal practice through identification and appropriate reporting of instances where the integrity and high quality of laboratory services have been breached.

<http://www.ascls.org/about-us/code-of-ethics>


### ASCLS Code of Ethics Duty to the Patient



Medical Laboratory Professionals maintain strict confidentiality of patient information and test results. They safeguard the dignity and privacy of patients and provide accurate information to patients and other health care professionals. Medical Laboratory Professionals respect patients' rights to make decisions regarding their own medical care.

<http://www.ascls.org/about-us/code-of-ethics>

**ASCLS Code of Ethics  
Pledge to the Profession**



As a Medical Laboratory Professional, I pledge to uphold my duty to Patients, the Profession and Society by:

- Placing patients' welfare above my own needs and desires.
- Ensuring that each patient receives care that is safe, effective, efficient, timely, equitable and patient-centered.
- Maintaining the dignity and respect for my profession.
- Promoting the advancement of my profession.
- Ensuring collegial relationships within the clinical laboratory and with other patient care providers.
- Improving access to laboratory services.
- Promoting equitable distribution of healthcare resources.
- Complying with laws and regulations and protecting patients from others' incompetent or illegal practice
- Changing conditions where necessary to advance the best interests of patients.

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**Our efforts are critical in terms of the  
information we provide**

**The great deal of questions that we answer  
(daily) demonstrate the VITAL role we play in  
health care**

**Our answers are VALUABLE and IMPROVES  
PATIENT CARE**

