



Laboratory Evaluation of Positive Antibody Screen in an Rh Negative Patient: Passive or True Anti-D: A Case Study Approach

Cristine Fior Clemente dos Santos, Ph.D., MLS^{CM}
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Presentation:

The patient is a 30 year old female G3P1A1. She is O negative and 8 weeks pregnant with her 3rd child. The obstetrician orders an ABO/Rh and antibody screen; she types O negative with anti-D identified in her plasma. The laboratory is not sure if the anti-D identified is passive due to RhIG administration or immune anti-D.

History and Laboratory Evaluation:

The patient has a history of miscarriage at 10 weeks of gestation in 2007, and at that time a micro dose of RhIG 50ug was given. In 2012, the patient delivered a child on July 20. Her antibody screen was positive at the time of the delivery and passive anti-D was identified. The cord blood workup of her child revealed the baby was O positive and the patient required another RhIG work up. The postpartum sample was tested by the laboratory. The fetal screen test was negative, so she only received one standard dose of 300ug of RhIG, IM injection 24 hours after the delivery and was discharged without complications.

Present diagnosis:

On November 15, the same patient presented to her obstetrician with suspicions she could be pregnant. The obstetrician ordered a quantification HCG and the pregnancy was confirmed. The physician also ordered an ABO/Rh and antibody screen. Results begin on Page 4.

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See You at the 82nd ASCLS Annual Meeting in Chicago

Tuesday, July 29th through
Saturday, August 2nd

As of the deadline for this newsletter, the program is set and we are still working on bringing in the last few contracts. There were more than 180 proposals submitted for the annual meeting to fill 42 sessions, 4 midday sessions, and 11 roundtables. The limited number of time slots made it very difficult to choose the proposals that make up our meeting.

In the past, the Professional Issues Open Forum and ASCLS Issues Update have often addressed similar topics, concerns, and discussion. Due to that overlap, these sessions have been combined and will be presented on Thursday morning. Other "regular" sessions that will be presented include "Member Submitted Research Papers", "Member Submitted Case Studies," "Student Forum," and the "Health Care Forum."

There are a number of professional development/career sessions for new (and seasoned) professionals

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President's Message

*J.R. Constance, MHA, MLS(ASCP)^{CM}
ASCLS President 2013-2014*

Share Your Passion! – Using Social Media

Can you believe the rise in social networking that we have seen over the last several years, with the popularity of services like Facebook, Twitter and LinkedIn? It is amazing how many people are using social networking in one way or another, especially now that many of us have smart phones with Facebook, Twitter and LinkedIn apps. I would like to discuss a few ideas on how we as members of ASCLS, and as laboratory professionals, can use social networking to our advantage. But first, a little history on how ASCLS got started with social networking, and an update on where we are today.

Did you know that ASCLS was one of the first laboratory professional organizations to begin effectively using social networking by developing a presence on Facebook, LinkedIn, Twitter and YouTube? The original Social Networking Task Force (SNTF), led by Rebecca Rogers and Kyle Riding, was charged with investigating “all forms of social networking for relevance to the mission and vision of ASCLS” and recommending which venues were worth pursuing as an official activity of ASCLS. And they and their task force did a fantastic job getting our social networking presence established, and maintaining and building that presence through regular posts and tweets. As of the writing of this article, ASCLS has 8618 “Likes” on Facebook, 1230 followers on Twitter, and 8063 members of our LinkedIn group. A special thank you to all of you who participated on the task force!

The final charges of the task force were to develop a social networking policy for ASCLS and to recommend a structure that would enable ASCLS to manage our social networking efforts moving forward (and to also have some guidance for our constituent society organizations). This past year the SNTF sent the ASCLS Board of Directors (BOD) a draft of a social networking policy, and after a few revisions, the board voted on

the policy and the ASCLS office is in the process of putting that into effect.

The SNTF also recommended a couple of options to the BOD for how to manage the social networking efforts on an ongoing basis. Of course, the Social Networking Task Force was meant to be a temporary group of volunteers tasked with creating a presence for ASCLS, and then, through some trial and error, identifying what worked to build that presence. The continued management of the ASCLS social presence is far too much work for just a few individuals. Based on one of the recommendations of the SNTF, I will be creating a new group, the Social Networking Response Team, modeled after the ASCLS Consumer Information team, which will be staffed by volunteer ASCLS members who will manage the daily social networking activities of our organization. The main hope is that after some orientation on how to represent ASCLS, the members of this group will share the duties of posting to Facebook, sending tweets and posting to LinkedIn to keep everyone interested and up-to-date.

Stay tuned for more information on the Social Networking Response Team, and if you are interested in participating with this group, please don't hesitate to let me know.

Now, I would like to share some thoughts on how we as laboratory professionals, and members of ASCLS, can best use social networking to our benefit. Part of this is pretty simple: if you are on Facebook, SHARE Your Passion by sharing posts related to the medical laboratory so that your friends and colleagues can see them. The power of social networking is that you are connected to a network of online friends and they can see what you “Like”, what you post, and what

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Service Learning

Jane Finley, MS, MT(ASCP)

The large white van running down the dark highway was alight with bright chatter. Inside were University of Texas Medical Branch (UTMB) students meeting each other, talking about what medical program they were attending and anticipating the weekend in Laredo, Texas. They were to set up and run a health fair in one of the poorest areas of the US. From the din, one plaintive voice floated up out of the rest, "I really don't see why the Clinical Laboratory Sciences (CLS) students are even here! What can they possibly do?" The UTMB CLS students took up that challenge and changed that perception.

There's no better way to learn about other healthcare fields than a Service Learning project. Service learning is the concept of putting knowledge into action by sharing skills and knowledge with a community outside of your work or school. The *Essential Service-Learning Resources Guide* defines it as "a teaching method which involves students in organized community service that addresses local needs, while developing their academic skills, sense of civic responsibility, and commitment to the community."

A service learning opportunity helps establish community connections and provides resources useful to the community. Students are able to link what they are doing within the classroom to the service provided within a community. As a result of that experience, their learning and knowledge of healthcare are increased. The students and sponsors have a better understanding of the community, cultural appreciation, increased tolerance, and an identity with community partners. The community benefits from services they are not always able to access and learn about different areas of healthcare.

At University of Texas Medical Branch (UTMB) in Galveston, Texas our mission is "to improve health for the people of Texas and around the world." The core values of compassion, integrity, respect, diversity and innovation in all healthcare arenas are the foundational bricks of our mission. These are values I've recognized in laboratorians over years of



professional practice in the laboratory and in education. They are visible each day within the laboratory but only occasionally do they have the opportunity to shine outside those walls of the healthcare facility. Opportunities to demonstrate and participate in the mission can be had in this interactive educational tool of Service Learning.

As Clinical Laboratory educators we understand the value of professional practice within the workplace. CLS education has practiced putting knowledge into action by using the working clinical laboratory as a classroom. It's within that context that knowledge of physiology, chemistry, biology, and physics coalesces into the vocation of laboratory testing. It's in the working clinical laboratory where those sciences are integrated into an efficient, accurate and precise production of pertinent data.

As laboratorians we are very good at producing the data needed to confirm, diagnose, or monitor human disorders. This data is used in a majority of diagnoses but CLS has limited interaction with patients and other healthcare disciplines. Service learning allows the connection to be strengthened between the laboratory and its primary clients, the patient and their providers.

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Anti-A	Anti-B	Anti-D	Dctrl	A1Cells	Bcells	Interpretation
0	0	0	0	4+	4+	0 Negative

Screen Cells	Result (Tango - automated)
I (R2Ro)	2+
II (rr)	W+
III (rr)	0
Interpretation: positive	

Antibody workup shows the presence of anti-D. The physician calls the Blood Bank to speak with the supervisor. He asks the Blood Bank if his patient has a true anti-D and if he should be worried. The Blood Bank supervisor tells the physician more testing must be performed to safely conclude the antibody found in the patient's plasma is still the product of a previous RhIG administration¹. The physician asks to be notified as soon as the laboratory reaches a conclusion.

The laboratory repeats the antibody screen using the tube method, the result are below:

Screen Cells	IS	37C	AHG
I (R2Ro)	0	0	1+
II (R1r)	0	0	0
III (rr)	0	0	0
Interpretation: positive			

Results after treating the patient's plasma with dithiothreitol (DTT):

Screen Cells	IS	37C	AHG
I (R2Ro)	0	0	1+
II (R1r)	0	0	0
III (rr)	0	0	0
Interpretation: positive			

The laboratory suspects RhIG administration is the reason for the patient's consecutive positive antibody screen, however the Blood Bank performed a titer to confirm:

The patient's titer results for anti-D are below:

Titer (tube method) R1R2 cell	Reaction (AHG - LISS) Specimen date: 11/15/12
1:1	1+
1:2	1+
1:4	W+
1:8	0
1:16	0
1:32	0
1:64	0
1:128	0
1:256	0
1:512	0
1:1024	0
1:2048	0
1:4096	0

The Laboratory calls the physician and requests a new sample to be drawn 8 weeks from the previous sample, so the titers could be compared:

Titer (tube method) R1R1 cell	Reaction (AHG-LISS) Sample Date 11/15/12 (8 weeks gestation)	Reaction (AHG-LISS) Sample date 01/15/13 (16 weeks gestation)
1:1	1+	W+
1:2	1+	0
1:4	W+	0
1:8	0	0
1:16	0	0
1:32	0	0
1:64	0	0
1:128	0	0
1:256	0	0
1:512	0	0
1:1024	0	0
1:2048	0	0
1:4096	0	0

The laboratory also decides to treat the patient's sample with DTT and repeat the antibody screen; the results were:

Screen Cells	Sample 09/02/13 (AHG Phase Only)	Treated sample from 09/02/13
I	1+	1+
II	0	0
III	0	0

Student Forum Leadership Award

Masih Shokrani, Ph.D., MT(ASCP)
ASCLS Awards Committee

Do you know an ASCLS student member who has gone “above and beyond?” Someone who shows enthusiasm for the organization and the profession? A student member who translates that enthusiasm into activities that inspire students and others in the profession? Then this is the award for your student!

The ASCLS Student Forum Leadership Award was developed to recognize ASCLS student members who have become active in ASCLS during their student years, and to encourage them to continue their commitment to ASCLS. **All ASCLS student members are eligible for this award.** Educators: if you have a student member who has gone above and beyond, encourage your constituent society president to nominate that student. The student must have been an ASCLS member for 6 months prior to the nomination.

As with many ASCLS awards, it is an honor to be nominated and recognized by your peers. Nominate a student today, and, by doing so, encourage him/her to continue being the “face of the profession”. Nominations may be made by the constituent society president or regional director. Qualifications for the award and forms for nomination can be found at:

<http://www.ascls.org/about-us/celebrate/130-scholarships-and-awards2/student-forum-leadership/106-student-forum-leadership>

Nominations and questions can be directed to awards@ascls.org. **The deadline for nomination is February 15, 2014**

ASCLS ANNUAL MEETING POSTER COMPETITION

Marcella Yee, Awards co-chair

The ASCLS Poster Competition encourages members to present scientific posters on their research. In addition, it provides a venue for laboratory educational programs to showcase their students’ work in a poster format. ASCLS invites all members to present their research or other relevant findings at the ASCLS Annual Meeting for the Poster Competition.

Any ASCLS member or student, faculty, or practitioner from an accredited MLT/MLS educational program may apply to submit a poster. Programs may submit more than one poster.

The presentations will be judged by peer-review onsite, and awards will be given in the following categories: professional member, graduate student, and undergraduate student.

The winners will be announced at the final plenary session at the ASCLS Annual Meeting. A complementary year’s membership in ASCLS at the First Year Professional or the Professional I level will be awarded. The student with the winning poster will be given a cash prize of \$500 by the ASCLS E&R Fund.

The submission deadline is April 1, 2014. Complete submission guidelines and instructions may be found at http://www.ascls.org/?page=Annual_Meeting. Any further questions can be directed to Elissa Passiment at: elissap@ascls.org.

Education and Research Fund 2014 Scholarships and Grants

The ASCLS E&R Fund provides scholarships for clinical laboratory technician (CLT) and science (CLS) undergraduates, and provides the only scholarships in the profession for students in graduate laboratory science programs. In addition to the *Edward C. Dolbey* scholarship program, three new CLS scholarships are funded for 2014, the *E&R Fund Memorial Scholarship* (first awarded in 2013), the *Daniel Southern Scholarship*, and the *Michele S. Kanuth Memorial Scholarship*.

CLT scholarships are **\$1000**; CLS, **\$1500**, and graduate scholarships are **\$3000**. To apply, navigate to the Alpha Mu Tau Fraternity web page, <http://www.ascls.org/student-center-ascls/107-about-us/celebrate/scholarships-and-awards2/alpha-mu-tau-fraternity1/71-alpha-mu-tau-fraternity>, and download the application form, or contact Alpha Mu Tau Fraternity executive secretary, **Joe Briden**, alphamutaujoe@yahoo.com. (Mr. Briden and the Alpha Mu Tau Fraternity manage the E&R Fund scholarship program.) Applications and supporting documentation must be completed and hard copies submitted to Mr. Briden by **April 1**.

The E&R Fund also provides the *I. Dean Spradling Graduate Research Grant*, **\$3000**, and the *ASCLS Member Research Grant*, \$5000, to support research by medical laboratory science graduate students or ASCLS members, respectively. For grant applications, navigate to the ASCLS E&R Fund page, <http://www.ascls.org/about-us/education-and-research-fund>, select the I. Dean Spradling or the Member grant and complete the application forms. Grant applications with supporting documentation are submitted electronically to **Executive Vice President Elissa Passiment**, elissap@ascls.org and are due **May 1**.

Please post these dates on your personal calendar: **Scholarships, April 1, Grants, May 1**. If you have any questions, please contact ASCLS E&R Fund trustees **George Fritsma**, gfritsma@charter.net, or **Mary Ann McLane**, mclane@udel.edu.

Best wishes from the E&R Fund as you pursue your education and career.

 <p>iPhone 5 Hard Case #30101 \$12.99</p>	 <h3>Here's Your Exclusive Peek!</h3> <p>Official 2014 Medical Laboratory Professionals Week logo & gifts!</p> <p>Get shopping early! Find these and many more fun products at http://shop.advanceweb.com/ascls-med-lab-week</p> <p>Provide this code when ordering ASCLSA</p> <p>Visit the ASCLS website - www.ascls.org/MLPWideas for tools and ideas to celebrate the week & promote the profession! Download the free Promotion and Planning Guide and many other items!</p>	 <p>Water Bottle #30279 \$12.99</p>
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The Importance of Bringing Medical Assistants and Phlebotomists into Professional Organizations - PART II

Len Finch, MS, MT(ASCP)

Much has changed in the last 50 years in the health care field. Hospitals now regularly hire phlebotomists to draw blood. Most doctors' offices employ 3 to 4 medical assistants per provider. Many medical assistants (MA) in doctor's clinics perform lab work; both waived and moderately complex lab tests even though they receive very little lab technique and theory training in their schools. Moreover, many MAs and phlebotomists perform numerous Point of Care analyses.

As much as organizations such as the ASCLS and AACC dislike the idea of MAs and phlebotomists performing tests, this is likely not going to change. The reason is economics. Physicians can hire an entry level MA or phlebotomist for half of the amount a MLT or MLS would command. In the author's consulting business, he educates and monitors over 125 MAs in several doctors' offices.

The beginning MA and phlebotomist have less knowledge of laboratory medicine and lack important skills such as pipetting, performing dilutions, following precise procedures, comprehension of lab results and correlation with patient illnesses, understanding the principles of calibration curves, quality control, and the theory and principles behind the procedure methodologies.

Many of today's instrumentations are quite easy to use--enter a patient's id and press one button and a complete blood count is produced. This is a moderately complex test. It is a simple test to produce; however, the complexity lies in understanding the concepts behind the test methodology in the instrument. Understanding the calibration curve, what the parameters mean, the importance of keeping the analyzer clean, knowledge of the reagents, how to troubleshoot the instrument, and anticipating the most likely things that might go wrong are some of the issues that must be comprehended for peak performance and accurate and precise testing.

Operators of lab equipment should know something about the parameters and values produced for the clinician. It is not just a number on a printout. The operator should know what each parameter measures

and if all of the parameters correlate with the other parameters and other lab tests performed in the laboratory. For example, the rule of three could be checked on the CBC (Hemoglobin X 3 equals the Hematocrit plus or minus 3); if the WBC is elevated or decreased, does it correlate with the proposed diagnosis or does the automated diff need to be examined manually by a medical laboratory scientist or reference lab to look for abnormal cells. Do the indices check, and are abnormal flags present on the printout such as a WBC correction needed for nucleated RBCs? Are early, abnormal cells present in the blood? Operators should be knowledgeable of hematologic conditions and if certain parameters correlate with the patient's condition or if the sample is satisfactory. Clots or micro clots maybe present in the CBC sample which mimic a pathological condition. All instruments are subject to error and samples may be compromised with hemolysis, inappropriate fill, or clots.

While medical assistants and phlebotomists do not have all of the knowledge and understanding needed, they are here to stay simply because of economics and the shortage of medical laboratory scientists and technicians. A recent education session at the ASCLS annual meeting reported that 46-68 per cent of lab errors occur pre-analytically, i.e. during collection of the sample and prior to analysis of the blood. Of these errors, 15 per cent are from mislabeling and 13 per cent are from improper identification of the patient. (The author knows the acute consequences of mislabeling. A few years ago a 43 year old patient in his large hospital, admitted for an elective heart valve replacement, died 30 days later from complications after mismatched blood was transfused based on a mislabeled specimen. The patient went into renal failure, was dialyzed, and eventually died. The hospital settled with a no contest law suit for slightly under fifty million dollar.)

Therefore, ASCLS, AACC, and other professional organizations must embrace, educate, and evaluate medical assistants and phlebotomists as part of our professional group so that we can help them realize that we all must own, protect, respect, and accurately analyze our patients' specimens from the very beginning to the very end of the testing process.

ASCLS Lifetime Achievement Award

ASCLS is proud to announce the creation of the ASCLS Lifetime Achievement Award. This award has been established to honor an ASCLS member who has “made a difference” in ASCLS and the profession of clinical laboratory science. ASCLS will use this award, instead of the Member of the Year Award, to recognize an individual who has:

- » provided dedicated and outstanding service at all levels of the organization over a sustained period of time
- » demonstrated outstanding career achievements in clinical laboratory science and
- » has significantly promoted the profession to the public and other health care professionals.

Nominees will be evaluated on the activities that have occurred over a 20 year time span of membership including:

- » ASCLS activities at the local, state, regional and national levels
 - Activity has increased with years of experience at each level
- » Participation in other organizations related to clinical laboratory science
 - Activities at all levels within the organization
- » Professional honors given for ASCLS activities
 - National, regional, state
- » Contributions to the profession such as:
 - Volunteer work for 5 or more years in the accreditation and/or certification arenas (NAACLS, NCA, BOC)
 - Volunteer positions with federal/state agencies on projects promoting the profession
- » Government and licensure activities on the state/national level
- » Recruitment into the profession (career days) or providing the “Face of the Profession” by participating in health fairs, science fairs or similar activities
- » Professional publications and presentations

An individual ASCLS member or a constituent society may nominate one individual for this award. If a constituent society is nominating, an individual such as the State President should assume the role of nominator. If you or your state society knows someone worthy of this honor, review the new criteria and select someone for this new award.

Our goal is to have a group of nominees who represent the epitome of service and professional activities within ASCLS and the Clinical Laboratory Science profession.

POSTMARK DEADLINE for nomination submissions is February 15, 2014. Guidelines and forms can be found at <http://www.ascls.org/?Awards>. If you need additional information or have questions, please contact the Awards Committee at awards@ascls.org.

ASCLS New Professional of the Year Award

Masih Shokrani, Ph.D., MT(ASCP), ASCLS Awards Committee

One of the newest awards from ASCLS is the ASCLS New Professional of the Year. The designation as a “new professional” was developed to encourage newly active ASCLS members to maintain their relationship with ASCLS and give input to ASCLS leaders about what is important in ASCLS membership to them. As we develop new members in each of our constituent societies, and they become more dedicated to ASCLS and the profession, we would like to recognize their commitment and their efforts. We can do this by nominating a dedicated new professional for this award. What better way to thank someone for all their hard work, and encourage them to continue to be the face of the profession!

Nominations and questions can be directed to awards@ascls.org. **The deadline for nomination is February 15, 2014.**

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Did You QC Your Attitude Today?

Wael H. Hassan, MSCLS, MLS(ASCP)^{CM}

Quality Control (QC) may be considered the most common words heard in all laboratories. I once counted how many times I said QC in a chemistry laboratory. I found that I said QC 23 times and each time I said it there was a lot of troubleshooting to be done. All I knew when I started working in Clinical Chemistry was, if the QC results are out, REPEAT the test. If it was still out, I changed reagents and REPEATED the test. I kept repeating and changing and repeating and calibrating and repeating and so on until I realized QC is the ominous accompaniment of being a Clinical Laboratory Scientist (CLS).

Although the title of this article has the word QC in it and I have mentioned QC nine times already, this article will have nothing to do with QC. This article will shed a light on the staff behind the scenes; those who run QC and all the other tests performed in the laboratory—the different human factors that affect staff performance and some of the reasons why a change in the laboratory environment and staffing structure is needed to avoid laboratory errors that can negatively impact patient care.

We all know licensed health practitioners depend on laboratory results to diagnose a case or prescribe a medication or even follow up on a treatment. In addition, the use of advanced technologies in the field of genetics and molecular diagnostics can predict health issues the patient may face in the future. The question we need to ask is "how accurate are the results"? What is the acceptable margin of error when we are reporting test results that may impact someone's life? Is a 1% error margin acceptable? Instrument manufacturers spend millions of dollars to ensure instrument results will be accurate and error free. Laboratory budgets include money for QC and proficiency testing to ensure the instruments are running adequately and the results are correct and safe to report. Managers forget about the human factors that can affect the test results. We are all humans, we feel bad, sad, annoyed, fatigued, angry and much more. These are some of the human factors that may contribute to a lab error. Here are some of these factors that can cause laboratory errors and what we can

do to prevent them from interfering with the quality of the test results.

Human error is defined as a human action that leads to unintended results. Factors that can lead to human errors in the laboratories can be one, some, or all of the following:

1- Instructions, training and repetition:

Poor instructions and training are the number one factors that can contribute to human error. Poor communication between staff members is a key human factor that can result in inaccurate results. Lack of knowledge and poorly designed competency assessment methods can result in catastrophic results that may cost the laboratory a lot of money or greatly impact patient care.

Complacency due to boring repetitive jobs is a factor that develops over time as the CLS gains knowledge of the procedures performed. The CLS may develop self-satisfaction or a false sense of confidence due to the repetition of the procedure. A repetitive task may be skipped or overlooked because the CLS has performed the task many times before with no errors.

[Designing better methods and materials to educate the staff will greatly improve performance in the laboratory and decrease the margin of error due to human factors. Assigning the CLS to different work stations or different duties may improve the staff performance and prevent complacency.](#)

2- Attitude, physical, and mental status:

Personal life problems can impact the CLS performance in the lab and his/her ability to focus on work. Fatigue due to long work hours reduces alertness that reduces the ability to focus on the task being done. Pressure caused by increasing workloads that require the CLS to do things faster and better without making mistakes. This kind of pressure may affect the CLS performance and cause stress.

Lack of assertiveness and not allowing the staff to express feelings and opinions about the laboratory environment and workload management may lead to catastrophic results.

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Tips on How to Successfully Enter the Field of CLS:

Lacey A. Campbell, First Year Professional Director
and NPC Vice-Chair

As a student, there are many ways to be successful in your classes and during your clinicals. Of course, being organized is key, but there are also numerous ways to use your time and the resources provided to you to the best of your ability. These are my opinions of the best ways to be prepared to enter the clinical laboratory science field during clinicals and after graduation:

Take notes in class! Obviously, every student knows taking notes is one of the best ways to remember the most essential parts of a professor's presentation and to reiterate the information in your head. With technology being a part of every lecture in today's classroom, it is so simple to just print out the professor's PowerPoint presentation and let your mind doze throughout class. However, if you take notes on your PowerPoint presentation as well as bring a voice recorder to class (if your professor does not already provide video recording) it will result in a much better understanding of the course material. Keep these notes and recordings either on paper or electronically and refer to them when you begin to study for your BOC examination and later on if you decide to obtain your specialty in a certain subject area.

Keep your books! It is truly important to keep the textbooks from which you first learned the clinical laboratory core material. Your textbooks become priceless when you are studying for clinicals and your certification examination, especially if you took extensive notes in your textbook while reading your coursework material. It may not be as essential to save your textbooks from your elective classes, but it is extremely important to save your books from Hematology, Clinical Chemistry, Microbiology, Blood Bank, Immunology, and Molecular Methods. Remembering photographs of cell morphology or microbiology cultures are much easier if you study from the original learning source!

Take notes in clinicals and keep your competency check sheets! I highly suggest bringing a pocket

sized spiral notebook (that will fit in your lab coat) to your very first day of clinicals to begin taking notes and continue throughout each clinical rotation. If you are hired at the hospital or clinic that you are assigned for your rotations, this book will become your training manual as a new hire. Also, when you are a student you may or may not receive a competency check-sheet from the lab supervisor in each department. If you do, I would suggest making a copy of these competency checksheets once they are completed and before you turn them in to your professor for your clinical grade. You will be surprised what you do not remember from the lab such as types of analyzers/instruments, names of reagents used for certain tests, key entries for the laboratory information system used in that particular lab, etc.

Buy/study atlases and books/websites with picture references! With the internet there is a tremendous amount of resources provided that you can look up and/or purchase online that shows picture references to memorize, especially for Hematology and Microbiology. There are also numerous other resources for other departments such as charts of donor and blood product requirements for Blood Bank and flowcharts for Chemistry objectives. To review Hematology cell morphology you can visit <http://www.cellavision.com/cellatlas> and get their app. To review microbiology plate cultures and stains you can visit www.microbiologyinpictures.com. There is also a website called MediaLab Inc. that allows you to constantly take practice tests out of a test bank that covers more than 3,000 questions. There is also a function where you can play games to see how many questions you can get correct in a row. You may review a few questions for free, but for full access to all quizzes and tests, you must purchase the access code for a one year subscription. The website for Media Lab Inc. is <http://www.medialabinc.net>. There are also many websites that provide online study notecards such as www.studystack.com.

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Surviving ACA: Hospital Laboratory Strategic Planning

Shellie Smith
Region IX Director

Hospitals in Alaska have many questions about how the passage of the Patient Protection and Affordable Care Act (ACA) will affect their operations, as well as those of service areas within these hospitals. To prosper under these new rules (and perhaps even to survive) they will have to make changes in methods for health care delivery as well as adapt to changes in financing for their health care delivery. So, what will all of this mean for laboratories?

Researching the answer to this question led me to a couple of articles: one from ARUP laboratories and another from Clinical Laboratory News that provided meaningful information to pass on to laboratories as they strategically align themselves in this new health care environment. ARUP Laboratories is a national reference laboratory recognized for its innovative laboratory research and development as well as a leading business model. The Clinical Laboratory News is a publication of American Association for Clinical Chemistry (AACC), an international society of medical professionals who are concerned about and want to give guidance on how to best position labs to maximize reimbursement as the race to cut laboratory fees speeds up with all the new changes.

Until the ACA, the traditional fee for service payment model was predominantly used in Medicare and this model rewarded volume of service. This led to an increase in health care costs without a corresponding improved outcome for the patient. Prior attempts to control health care costs focused on utilization payment models that relied on controlling unit costs for services. Utilization review as well as fee for service models by themselves, however, failed to stop the rise in health care costs.

The ACA has three fundamental goals: 1) decrease the cost of health care; 2) improve the quality; and 3) make health care more accessible to all. One of the main ways the ACA seeks to reduce health care costs is by encouraging doctors, hospitals and other health care providers to form networks to better coordinate care, which could keep costs down. As part of an Accountable Care Organization (ACO), hospitals no longer just provide episodic treatment for acute illnesses and return patients to health. They now have

to respond to the health needs of patients that have changed over the years. "Patients are living longer, but more patients are living with chronic conditions. Fifty percent of the population has been diagnosed with at least one chronic illness. Seventy-eight percent of all healthcare expenditures are directed toward patients with at least one chronic condition. Successful models for the treatment of chronic conditions require coordinated care and case management." (ARUP)

As physician groups and hospitals adopt the ACO model of managed care, there is a noticeable move toward outpatient care. With a shift from paying for the volume of care to the quality and outcomes of care, ACOs are highly motivated to keep patients healthy through primary care or case management services that keep them out of the hospital. Therefore, laboratory testing is becoming less inpatient and hospital-based focused and much of testing will be for outpatients. This will require a new management style from laboratories. (*Clin Lab News*)

Getting an early and accurate diagnosis is critical to high quality primary care. "It is known that at least 30 percent of all care is unnecessary for one reason or another. And somewhere between 25 and 45 percent of working diagnoses do not correlate with final diagnoses... Getting an early and accurate diagnosis is a primary function of labs. And for unnecessary care, it's getting the right information to the right person at the right moment, and that's what laboratories do best. In this regard laboratories have an opportunity to shine under accountable care." (*Clin Lab News*)

"Hospitals and health systems are investing heavily to create the components of healthcare delivery models that provide more cost-effective and efficient care and are structured to adapt to new reimbursement models. Primarily, these investments are in the purchase or employment of private physician practices and the information technologies necessary to connect these physicians to their health system's "Electronic Health Records (EHR)." (ARUP) Hospital laboratories will have "to establish their value in the model as clinical integrators by demonstrating the ability to disseminate critical clinical information to physicians across the continuum of care." (ARUP) The clinical laboratory will be a critical component by contributing connectivity to the infrastructure. "Through

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Evaluation From Page 5

RhIG is known to be entirely IgG whereas active immune anti-D is part IgM. Treatment of a patient's plasma with 2-mercaptoethanol (2-ME) or DTT would partially or totally inactivate the antibody if true anti-D was present. DTT treatment would not have any effect if the positive antibody screen was caused by RhIG administration.¹ It is known that titers of RhIG usually do not exceed 1:4 and the half life is usually 25 to 31 days^{1,2}. This half life may vary depending on the patient's immune response and may be present in maternal circulation for up to 6 months. Another important part of the identification of this antibody is that active immune anti-D usually reacts strongly at immediate spin tube method. The 3-4+ strength reaction is carried from the saline IS phase through 37°C and AHG. Passive anti-D, due to IgG characteristics, usually does not react at IS and 37°C by the tube method and repeating the patient's antibody screen using the tube method is helpful if the initial screen was performed using highly sensitive methods such as gel, solid phase or automation.

In 2013, a study was performed by Tiblad et al, where Rh negative women had a non-invasive fetal RHD screening performed by DNA extraction and PCR, to determine the fetus genotype regarding its Rh status. During the study, if an Rh negative mother is confirmed to be carrying an Rh positive fetus, she would receive RhIG 300ug at 28 weeks gestation^{1,2,5}. However, if the Rh negative mother was confirmed to be carrying an Rh negative fetus, she would not receive RHIG at 28 weeks.

In United States, the American

Academy of Obstetrician's current guidelines recommend one dose of RhIG be administered at 28 weeks of gestation regardless the fetus Rh status. According to the study performed in Sweden, (5, 6) Rh negative mothers carrying a Rh negative fetus would not receive 28 weeks RhIG.

It is believed that before RhIG was discovered in 1968, the risk of sensitization of Rh negative mothers to produce anti-D when pregnant with a Rh positive fetus was 16%. The risk decreases to 1-2% when RhIG is administered up to 72 hours after delivery and to 0.1% if the mother also receives an additional 300ug dose RhIG at 28 weeks of gestation, but many countries only administer RhIG postpartum.^{3,4}

In this particular case study, determining the Rh status of the fetus during the second pregnancy by the non-invasive method using a maternal EDTA blood sample would also have helped to conclude if the anti-D identified in the maternal circulation in the first trimester of the pregnancy could be residual passive anti-D, because the fetus from the second pregnancy could very well be Rh negative.

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Chicago From Page 1

which have been selected for this meeting: a "Career Options for MLS" panel, "Mastering the Managerial Balancing Act," "Most Challenging Joint Commission Laboratory Standards," and "Laboratory Utilization." We also have a number of new technology presentations, including "Mass Spectroscopy in Endocrinology," "The Male and Female Microbiome," and "Maldi-TOF." For molecular diagnostics, Dr. Kristin Landis Piwovar will be back with a new presentation, "Epigenetic Pathogenesis of Myeloproliferative Neoplasms." For CSI fans, how about "Utility of Bacteria Associated with Human Cadavers?" Other hot topics include Biofilms, Next Generation Sequencing, and Reticulated Platelets. All of the scientific sessions are either intermediate or advanced.

Once again, ASCP will be sponsoring two sessions at the meeting: "Designer Drugs," and "The Hematopathology Diagnostic Management Team at Vanderbilt University."

In addition to a very exciting program in Chicago, the annual meeting is your chance to explore

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Chicago From Page 13

the governance activities of ASCLS. From committee meetings to the House of Delegates, most meetings are open to all members. Join other members who share your interest in a particular laboratory discipline by attending the Scientific Assembly section meetings. This is networking at its best.

The Clinical Laboratory Exposition will be held at the McCormick Convention Center and is the largest trade show of laboratory equipment and services in the world. Shuttles will take you from the ASCLS host hotel, the Marriott, to the Convention Center. The Expo has become a truly international event with hundreds of laboratory diagnostic suppliers and corporations participating.

For the scientific sessions, governance and laboratory expo, it is time to start making plans for July 29th through August 2nd in Chicago.

President's Message From Page 1

you share, so in the name of Sharing Your Passion, take the time to share posts related to the medical laboratory. The more people who share that passion, the more people who will see it.

Twitter, of course, is all about sharing, either through posting original information (in 140 characters or less) or through retweeting tweets from individuals or groups that you follow. If you are also on Twitter you can follow ASCLS and other professional organizations and retweet information in which you think your own followers might be interested.

You can also create your own regional and state Facebook pages

and Twitter accounts, and share information related to your local societies through those. We have several ASCLS Regions and states that are doing just that. As always, please let me know what you have been doing to Share Your Passion for the medical laboratory profession by emailing me at jrc@rodricon.com. I look forward to hearing from you.

Service Learning From Page 3

For service learning, UTMB CLS students have participated in health fairs held in Southeast Texas and South America. The communities usually include underserved populations with little access to healthcare or healthy living choices. They can serve community businesses, church communities and the school community itself. The availability of Point of Care Testing (POCT) instruments allows us to provide simple screening tests such as glucose, lipid profiles, Hemoglobin A1C, and chemistry profiles using capillary specimen collection.

Our early health fairs were one dimensional involving only the CLS students doing testing and giving that information to the clients. We expanded our involvement by becoming a part of an interdisciplinary team of UTMB students holding large Healthy Living events. These events involved nursing students and faculty doing triage, education of women's issues, BMIs, & blood pressures; CLS students performing screening tests with interpretation of testing and other parameters done by Physician Assistants students (PA) and medical students with advisement from faculty. Clients with identified abnormalities can then be referred to specific community clinics serving the public.

Some events are devoted to home

visits in which Physical Therapists (PT) and Occupational Therapist (OT) students help homebound patients. CLS students can help by advising diabetic patients on how to use glucometers and reagents or controls effectively and advising OTs or PTs on what to look for or the right questions to ask concerning self-testing.

The UTMB CLS Department has made a commitment to work on a UTMB medical students' weekly service project, a free clinic held at St. Vincent's House, a community service organization helping the underserved population in Galveston. The medical students run the clinic 3 days a week, providing services to clients. Laboratory tests are ordered, collected, and processed by medical or PA students under the watchful eye of CLS students. We provide the expertise on phlebotomy, test ordering, and specimen processing. In turn, CLS students are encouraged to shadow the medical and PA students and faculty as they visit with the patients.

The campus has several student organizations devoted to planning the service learning experiences: Frontera de Salud and Students Together for Service. Students in all disciplines are encouraged to identify communities in need of these services and to organize the events. Financial help is available from the organizations and special grants.

Our place in the healthcare team is valuable but not always recognized by the community or by other healthcare disciplines. It's a good use of our skills and knowledge to go beyond the walls of the laboratory and interact with those who are the recipients of our service: the patient, medical staff, healthcare administration and communities in which we live and work. Our influence is wide and our experience needed!

Surviving ACA From Page 12

the deployment of a robust connectivity system, laboratories have the ability to streamline physician office work flow, receive test orders and return results to a variety of EHR systems in real time, and play an essential role in building physician relationships. Downstream benefits of enhanced lab order accuracy, complete patient and billing information, improved revenue collections, and better patient outcomes are critical differentiators in an era of quality improvement and cost reduction mandates. Decision support prior to selection of diagnostic tests to ensure the appropriate utilization of laboratory tests can create total savings in laboratory expenses 10 to 20 times greater than savings associated solely with unit costs." (ARUP)

With this in mind, "labs should focus on providing the best service they can to hospitals and physician groups, concentrating on communication and integration with EHRs to make ordering and receipt of lab results as seamless as possible." (*Clin Lab News*) Lab services will be directed to those labs that have a robust outreach program with clinical decision support software utilized to guide physicians in test selection, and are cooperative and clearly provide the best service.

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[suite/documents/ACO%20Lab%20Strategy_whitepaper.pdf](#)

Tips From Page 11

Buy study books that work for you! There are many options available to us as students for study material for the Board of Certification exam, but there are two textbooks I personally prefer more than the others: "BOC Study Guide: Clinical Laboratory Certification Examinations" published by ASCP and "Clinical Laboratory Science Review: A Bottom Line Approach, 3rd Edition" by Patsy Jarreau. As stated previously, there are many options out there, these just happen to be my personal favorites.

Study before you start training in each section of the laboratory!

Once you obtain a position in the clinical laboratory, don't stop studying! Take out those textbooks, PowerPoints and notes, clinical notebooks, recordings, etc. and study them before you start training in that specific department. Impress your supervisor with how much you remember from your clinicals and coursework. You never want to be stunned by someone training you when they ask you a simple question you should have remembered from class! If you want to be successful, you truly must be a student for life, constantly learning and sharpening your skills.

Take notes as you train! As a new hire, there is so much information thrown at you from day one. From learning the laboratory information system to the complex analyzers, there are so many details and exceptions you need to remember to be successful in that lab. Absorb all the information you can from the individuals you train with and keep a notebook to be able to go back to look something up over the

years you work in that lab. Also, make notes as you train with the different individuals to make sure you remember little tricks and tips they teach you that may differ from others.

Overall, obtaining and keeping all the information possible from your classes, clinicals, and training is the key to remembering pertinent information! As we all have learned the popular saying, "If you didn't document it, you didn't do it," the same applies, "If you don't write it down, you will forget it!" Take the time as a student and/or trainee to set up a successful future for the years to come!

Attitude From Page 10

Clinical psychology and Anthropometric sciences, the study of the dimensions and ability of the human body, can help us prevent errors that can arise due to attitude, as well as physical and mental status.

3- Environment:

Distractions due to loud noises, smelly fumes, and slippery floors can contribute to human errors in the lab. A CLS may skip over an important procedure detail that can lead to an incorrect result or a loss of a precious sample that cannot be recollected. Safety and engineering can help us with work environment issues.

Lack of team work may lead to laboratory errors. Activities that include all the laboratory staff can improve morale and encourage teamwork.

Awareness of the human factors can lead to reduction in error ratios, improved laboratory safety, and decreased work related injuries and reduction in major laboratory errors that can be tracked back to a human error.



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Professional From Page 9

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