



President's Message

Kyle McCafferty MLS(ASCP)^{CM}

As We Once Were

Think back to the time you had just finished your clinical internship, passed your board exam, and got your very first job offers as a Medical Laboratory Scientist (or Medical Technologist, depending on when you graduated). How amazing did it feel that all your hard work was finally paying off? How excited were you to tell your friend's and family that you are a SCIENTIST? No matter how long ago it was, I bet that we can all look back with a smile, remembering what that used to feel like.

Now think about present day... are you still as excited to come to work as you were on that first day, all those years ago? Are you still spouting off facts about microbacteria to your family as they are eating a delicious meal? Or perhaps, are you still pulling out that old textbook to find an answer to a question you had, just out of curiosity? Some days, me neither.

If not ourselves, we all know at least one person who seems miserable to just show up to the lab, does the bare minimum, and goes home. How draining is it to work with that person? The burnout in the last few years has been unbearable but working with someone who seems to have lost their passion for this job can burn you out thrice over. What can YOU do?

We need to remember why we wanted to be scientists in the first place: ***to make a positive impact in health care through leadership that will assure excellence in the practice of laboratory medicine.*** If those words sound familiar to you, it may be because it's the ASCLS Mission Statement. We were once motivated to go above and beyond to benefit the laboratory with the skills we learned and demonstrate our passion for biological sciences. It's time we rekindle that fire and be the leaders in our workplace. It's time we get back to as we once were.

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ASCLS-Michigan *Newslinks*

A bi-monthly publication of the American Society for Clinical Laboratory Science-Michigan. This newsletter is available on our [website](#), distributed via email link to members and posted on the ASCLS-Michigan Facebook page.

Intended Content

Member submissions: Articles focusing on the medical laboratory profession are encouraged, including case studies, workplace activities, district events, committee reports, technology developments, awards and any other relevant and necessary information.

Non-member submissions:

Educational Institutions: no fee for announcements, program descriptions or updates. Frequency limitation: 3 times per year.
Commercial Organizations: [Sponsors of Annual Meeting](#) will be recognized and may submit materials (up to half page size) for the editions before and after the April meeting.

Deadlines for articles are the 20th of Feb, Apr, Jun, Aug, Oct, & Dec. Articles must have name of author. Anonymous letters will not be published. The editor reserves the right to edit all materials submitted for publication. Articles appearing in *Newslinks* represent the opinion of the author and may not represent the opinion of the society.

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for a complete listing and contact information for all ASCLS-MI board members and a wealth of other information on the Society.

Clinical Laboratory Science

A focus on what is happening in our profession

Featuring articles from Scientific Assembly Chairs or Board Members.

Materials from all members are also welcomed. Submit to editor. See page 2 for details.



Case Study: Multiple cases of Pseudohyponatremia

– What Happened?

Paul Guthrie, Scientific Assembly

Recently, I was involved in troubleshooting an unusual occurrence. The lab work on four patients showed highly elevated sodium results, all in the critical range. All were drawn by the same phlebotomist, on the same unit on the same morning round. At right (Figure 1) are the values obtained on each of the Basic Metabolic Panels (BMP).

The pattern was consistent. Sodium significantly elevated, Chloride significantly decreased, Calcium decreased and other tests not particularly abnormal. The patients had no acute conditions that could explain these results. Their previous values were normal, all quality control values and instrument checks were within range on the analyzer and the samples were free of clots or bubbles that might cause interference. Sample contamination was suspected. However, these four samples did not resemble the sample contamination we most typically encounter:

- Drawing samples near IV's or through ports/lines: three of the patients did not have any lines. In most IV contamination cases Normal Saline "dilution" does not have the pattern of high sodium, low chloride and often many other tests in the chemistry panel are out of range.
- Order of draw to fill blood collection tubes: Specifically EDTA drawn first: In those cases, the potassium is often critically high and the calcium critically low. In three of these cases, only one tube was drawn.

We conferred with the nursing staff and the phlebotomist, who was a trainee. Nothing out of the ordinary that could explain the results was revealed. The patients were all redrawn and all of the results were normal. (Figure 2 on next page).

Patient	Test	Initial	Reference Range
#1	Na	162	135-145 mmol/L
	K	3.1	3.5-5.3 mmol/L
	Cl	76	98-108 mmol/L
	CO2	20	23-32 mmol/L
	Ca	7.9	8.6-10.3 mg/dL
	Bun	24	8-23 mg/dL
	Cre	0.73	0.60-1.30 mg/dL
	Gluc	77	70-99 mg/dL
#2	Na	162	135-145 mmol/L
	K	4.5	3.5-5.3 mmol/L
	Cl	85	98-108 mmol/L
	CO2	19	23-32 mmol/L
	Ca	7.5	8.6-10.3 mg/dL
	Bun	21	8-23 mg/dL
	Cre	0.85	0.60-1.30 mg/dL
	Gluc	67	70-99 mg/dL
#3	Na	156	135-145 mmol/L
	K	3.7	3.5-5.3 mmol/L
	Cl	79	98-108 mmol/L
	CO2	19	23-32 mmol/L
	Ca	7.7	8.6-10.3 mg/dL
	Bun	10	8-23 mg/dL
	Cre	0.72	0.60-1.30 mg/dL
	Gluc	93	70-99 mg/dL
#4	Na	163	135-145 mmol/L
	K	4.9	3.5-5.3 mmol/L
	Cl	81	98-108 mmol/L
	CO2	28.4	23-32 mmol/L
	Ca	7.0	8.6-10.3 mg/dL
	Bun	61.4	8-23 mg/dL
	Cre	1.07	0.60-1.30 mg/dL
	Gluc	91	70-99 mg/dL

Figure 1

We were perplexed as to what could cause the pattern of critically high sodium with decreased chloride and calcium. A Google search was performed and we found a very helpful article from a British laboratory with a case very similar to ours. They described a patient with no clinical history or reason for hypernatremia, but with a 162 sodium, and a low chloride and calcium.

[Recognising pseudohypernatraemia | The Biomedical Scientist Magazine of the IBMS](#)

The article is worth reading. It has a good discussion on hypernatremia and pseudo-hypernatremia. I won't restate all the contents here, other than noting they identified sodium citrate as a likely cause of the pattern observed in these cases. The sodium is elevated due to the sodium citrate solution. The chloride is decreased from both dilution and the "anion: cation dissociation of sodium chloride". The calcium is somewhat decreased because sodium citrate is a weak chelator of calcium. That is very much unlike EDTA (lavender top) contamination where calcium is strongly bound and samples will have little or no measurable calcium. In the web article's case the source of the sodium citrate was a product called Citra-Lock used to clear central venous catheters on patients receiving dialysis. In our instances, that product was not in use, and three of the patients had no lines of any kind.

Where did our apparent sodium citrate contamination come from? The most familiar product to laboratory and nursing staff would be light blue top tubes used for coagulation testing. They contain a 3.2% solution. However, coagulation testing was not ordered on these patients. Searching further, an intranet indicated sodium citrate is in many skin care products.

Patient	Test	Initial	Redraw	% Difference
#1	Na	162	139	117%
	K	3.1	3.7	84%
	Cl	76	97	78%
	CO2	20	29	69%
	Ca	7.9	9.7	81%
	Bun	24	24	100%
	Cre	0.73	0.76	96%
	Gluc	77	123	63%
#2	Na	162	139	117%
	K	4.5	4.1	sl hemolysis
	Cl	85	101	84%
	CO2	19	27	70%
	Ca	7.5	9.0	83%
	Bun	21	24	88%
	Cre	0.85	1.01	84%
	Gluc	67	87	77%
#3	Na	156	134	116%
	K	3.7	4.1	90%
	Cl	79	98	81%
	CO2	19	27	70%
	Ca	7.7	9.4	82%
	Bun	10	10	100%
	Cre	0.72	0.88	82%
	Gluc	93	112	83%
#4	Na	163	146	112%
	K	4.9	4.9	100%
	Cl	81	103	79%
	CO2	28.4	38.0	75%
	Ca	7.0	8.5	82%
	Bun	61.4	68.0	90%
	Cre	1.07	1.14	94%
	Gluc	91	103	88%

Figure 2

 The Derm Review
<https://thederreview.com/sodium-citrate>

Sodium Citrate: Sodium Citrate For Your Skin - The Derm ...



Web What Is Sodium Citrate? Sodium citrate is used in cosmetics and skincare products primarily to control the pH level of your product. It also helps to preserve formulations and prevent bacteria and microbial growth. Sodium citrate is the sodium salt of citric acid, a ...

In discussing this issue with other lab leaders, it was mentioned that several weeks earlier at Daily Check In (DCI-a multi-disciplinary hospital meeting to go over any issues for the day) it was mentioned that there could be possible confusion on two look alike products. One was the alcohol prep pad used to cleanse skin before venipuncture, and another was nail polish remover wipes used to remove polish on patients using finger pulse oximeters. The two items were the same size, had the same color scheme and appeared the same once opened.



To avoid confusion, the orange nail polish remover packet was replaced with a differently labelled product (pink color). Checking the ingredients of that, Sodium Citrate was listed on the back. Were some of the orange packets still around? Could they be the source of the contamination? It's difficult to envision any residual material in this product being at a high enough concentration on the skin to impact results. Yet we know that order of draw with an EDTA tube drawn before a chemistry tube can cause interference, so it was not beyond the realm of possibility.

We decided to perform a small study, spiking serum samples with varying amounts of the fluid from the nail polish remover (pink) packets. There was no increase in sodium. This was the opposite of what we saw in the affected patients.



Additive: Liquid from Ducal Remover to 1.0 ml Serum					
Test	None	5uL	10uL	20 uL	40 uL
Na	143	140	139	141	137
K	4.6	4.5	4.5	4.5	4.4
Cl	103	102	101	102	99
Ca	9.4	9.4	9.4	9.5	9.3

We no longer had the orange packets to test, but we able to confirm they had the same ingredients. We could not determine if they had the same concentrations. We obtained Safety Data Sheets (SDS) on the two nail polish remover products. The amount of sodium citrate was very small (0.01%) on one and not listed on the other.



Safety Data Sheet

Nail Polish Remover Pads

Section 1. Identification

Product Identifier Nail Polish Remover Pads

Section 3. Ingredients

CAS	Ingredient Name	Weight %
79-20-9	Methyl Acetate	40 %
112-34-5	Butoxydiglycol	20 %
2163-42-0	Methylpropanediol	1 %
68-04-2	Sodium Citrate	0.01 %
5734-33-6	Denatonium Benzoate	0.01 %
7695-91-2	Tocopheryl Acetate	0.005 %



SECTION 3: INFORMATION ON INGREDIENTS

Component Name	CAS #	Concentration	Other
Methyl Acetate	79 20 9	40%	N/A
Butoxydiglycol	17162 11 7	20%	N/A

OSHA Standard Format



SAFETY DATA SHEET

Given the values we obtained in our study, the skin/nail prep packets did not seem to be the cause of this problem. With the one known source of sodium citrate (the light blue top tubes), we were curious as to the effects of collecting a sample in that tube and pouring it into a heparinized plasma tube. We split a sample, and compared BMP test results on the contaminated and uncontaminated tubes. The percent change was almost identical to what we saw in those four patients.

Collection in Lt Blue top (3.2% Na Citrate) poured into PST tube.			
Test	PST, unaffected	Lt Blue into PST	% Change
Na	139	162	117%
K	3.8	3.2	84%
Cl	100	85	85%
CO2	27	16	59%
Ca	9.7	7.0	72%
Bun	24	15	63%
Cre	1.00	0.97	97%
Gluc	104	99	95%

While not proven through direct evidence or observation, we have concluded the most likely explanation for the inaccurate test results was an incorrect workflow involving light blue top tubes. This case-study was shared with staff for education and awareness in case anything like it crops up again.



Agar Night

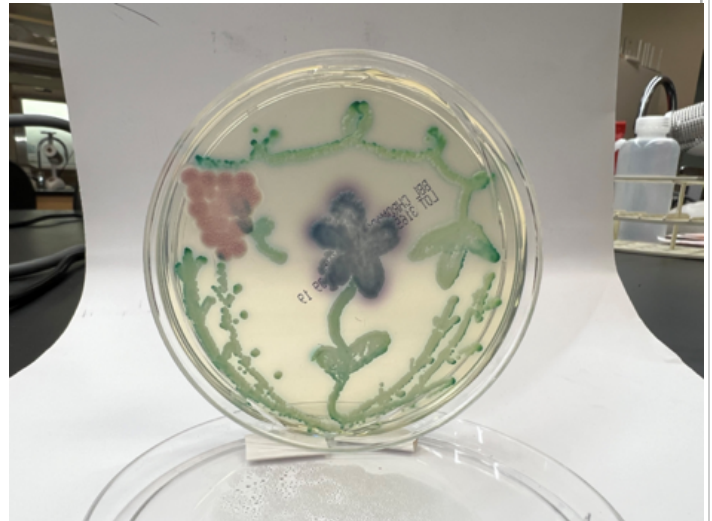
Mattie Brechbiel



For the third year in a row, ASCLS-MI District 1 hosted an agar art event in the medical laboratory science classrooms at Grand Valley State University. Twenty-four people participated and created designs ranging from spaceships to flowers. The event was open to both ASCLS-MI members as well as the public, which allowed for visibility of the MLS profession to those outside of the medical field. Using a variety of agars, attendees were able to design images that only became visible after incubation. Agars used included Mueller Hinton for organisms that naturally produce pigment, MacConkey agar for lactose positive and negative organisms, and Candida CHROM agar. Attendees spoke highly of the event, with some participants showing their peers what the MLS field encompasses by exploring the lab space together.



Participant uses pipette to create dot art on agar plate.



Art created on *Candida* CHROM agar



Participants prepare their designs prior to inoculating the plates.

ASCLS Legislative Symposium: The Importance of Being a #Labvocate

Caitlyn Madden

Have you ever watched a Sci-Fi show that involved traveling back in time? In all the instances that I have seen, the characters are told to be extremely careful because putting one thing out of place or engaging in a passing conversation with someone from the past could have extreme consequences on their own present-day. What's interesting about this scenario is that people believe that one small action in the past could have a huge ripple effect across time. But what if we took that same principle and instead of looking at the perspective of going back in time, we thought of our own small actions in the present having a big effect on the what is yet to come? Or, what if it was the singular actions of us as individuals combining into a force that could have an impact on our future? For me, this is what attending the Legislative Symposium feels like.

This meeting takes place every year in the fall and is a great way for passionate laboratorians to come together to learn how to advocate/how to be an advocate (or LABvocate) for or against legislature that would have an effect on our profession. Whether you are a first-timer or a seasoned labvocate, the Legislative Symposium offers valuable knowledge and tips to help anyone feel like they can approach

their representative or senators with confidence. And that's exactly what we do! We take this time to come together to meet with our legislators to ask them to push for or against legislature that directly affects us as laboratorians. And it's such an incredible feeling knowing that each of us in our own way is having an impact on the future of our profession.

This year, we focused on two very important pieces of legislature. The most prominent one we focused on was the Saving Access to Laboratory Services Act, or SALSA. If you're unfamiliar with why this act is important, let me give you a brief background and overview:

A prior piece of legislation, known as the Protecting Access to Medicare Act (PAMA) required "applicable laboratories" to report information to the Center for Medicare and Medicaid Services (CMS) about payments from private payors every 3 years.

Unfortunately, the definition of "applicable laboratories" excluded hospital outreach labs. Additionally, a very small number of laboratories reported information to CMS. The result was a



drastic reduction in Clinical Laboratory Fee Schedule (CLFS) rates.

This meant that due to inaccurate data reporting, laboratory reimbursement from CMS was severely reduced. Decreased reimbursement meant decreased laboratory funds.

Now, we are looking at potentially experiencing 15% reimbursement cuts for approximately 800 tests beginning January of 2024.

In previous years, ASCLS met during the Legislative Symposium to urge our legislators to delay additional PAMA cuts. SALSA was created to provide a long-term solution.

SALSA is a bipartisan, bicameral act (meaning that it has support from both Republicans and Democrats as well as multiple branches of government) that would prevent cuts in 2024 and put a cap on the cuts for the next two years. It would also prevent any excessive increases or decreases going forward. Lastly, it would change reporting methods to reduce paper record reporting and utilize statistical sampling to gather data that is more representative of all laboratories.

So, what did that mean for those of us visiting Capitol Hill? In some cases, it meant we were looking for senators and representatives to sponsor this act. If the legislator we met with was already a sponsor, it meant we were asking them to include this act in the year-end package to prevent those cuts that are due to occur in January. You don't have to be a scientist to figure out that a drastic reduction in reimbursements would mean a drastic reduction in laboratory funds.

The second focus we had was to garner support for Section 212 of the Bipartisan Primary Care and Health Workforce Act. This act would do several things. It would authorize funding for workforce grants within the Health Resources and Services Administration (HRSA) for community health centers and rural clinics to educate and train medical laboratory technicians and technologists. It would also allow for partnerships with high schools, community colleges, and other entities. This would be very beneficial to help more people learn about our profession at an earlier age. Additionally, this act would establish scholarships and loan repayment for those who would agree to work in underserved areas. Many people working in healthcare (nurses, physicians, mental and oral health providers) have a loan repayment option through the National Health Service Corp (NHSC) available to them, but currently laboratorians are not included in this program. This

act would rectify that by creating a similar program alongside the NHSC that focuses on laboratorians. Finally, it would allow for a federal grant program to assist allied health schools in order to recruit and retain clinical laboratory students which would allow programs to recruit faculty.

While my ASCLS-MI cohorts and I did not get to meet directly with our legislators, we did get to meet with representatives from each of their offices. Each of the people we met with were friendly and eager to learn more about our requests for action. I was able to follow up with them after returning home, and I plan on keeping in touch with them so they can expect me when I go again next year!

Overall the experience was not only educational, but really enjoyable. It's a great feeling knowing that doing something as small as reaching out to my legislator could have a profound effect on my future. But it doesn't have to stop with me. You too can make a difference by reaching out to your legislator. If you're unsure of who they are, it's become extremely easy to find the information online with a quick search of the web. And most of the time, finding a way to contact them is equally as simple. Just think, by taking one small action or a few moments from your day, you could have a hand in helping our profession.

If you'd like to learn more, you can visit ascls.org and check out the "Advocacy-Issues" tab. You'll find plenty of information not only about the Legislative Symposium, but about all of the current issues and legislature that surround our profession. And who knows? One small action may make a big enough ripple to change the future, no time travel required.



ASCLS-Michigan has a strong history of representing our profession at the nation's capitol. [Click here](#) to review stories from members Stephanie Mabry (Rink at the time), Linda Goossen and others.

ASCLS-Michigan 2024 Annual Conference



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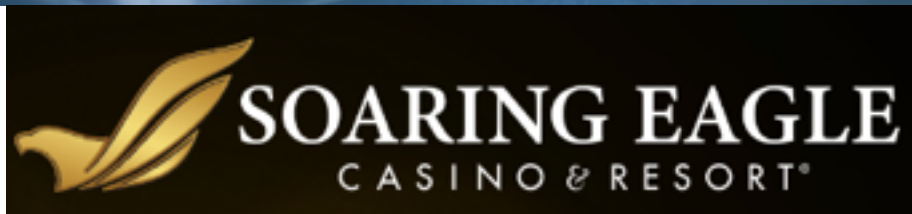


Mark your calendars for next year's annual conference. The ASCLS-MI Annual Conference is the largest state meeting for laboratory professionals, vendors, educators, and students in Michigan each year. Our next meeting will be in a new venue in the center of the state.

Click below to

- [Submit a session proposal or topic suggestion](#)
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We look forward to seeing you in 2024!



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