Name Game: How to Best Display Nursing Credentials

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Recommended Citation
Patient Engagement—So Many Questions...Do You Have the Answers?

Are you engaged? No, not engaged to be married. But, are you engaged with your patients, your profession and your community? As a nurse, you do not exist in isolation; neither do your patients or your peers. To “nurse,” is to “care for.” This implies at the minimum a 2 person interaction. To maximize the impact of the interaction, it mandates a 2 way engagement or connection. Are you engaged? Is your patient engaged? Have you taken the time and energy to assess your patient’s knowledge base? Is your patient not just listening, but processing what you are sharing? Are you truly engaged with your patient? Is your patient engaged with you? Are they at a coping point with their medical condition to be engaged? Well, just what can be done to enhance patient engagement?

Techniques to enhance patient engagement are not complex, but even simple interventions take time, energy and flexibility that are frequently at a minimum in the nurse’s busy daily schedule. Techniques that readily come to mind are: getting down to the patient’s eye level, eye contact, touch, speaking slowly, asking the patient to restate what you’ve said, repeatedly going over the instructions, asking the patient to demonstrate, calling the patient post-discharge and providing written instructions. All are simple, but all take time. Time is not always available in today’s healthcare environment.

This leads us to the question of whether our current health care delivery model enhances or inhibits patient engagement. For example, a patient having a minor outpatient procedure within a 3 hour period will interact potentially with 4 different RNs and multiple other healthcare providers. Considering the stress of the procedure, the unfamiliar environment and the multiple providers, is it realistic to expect true patient engagement let alone the retention of discharge instructions? Is it past time to explore alternative delivery models?

By staying engaged in the profession of nursing, one stays current on how his/her peers are addressing patient care challenges. Research findings presented at conferences and in journals can readily be critiqued and incorporated into practice. Professional forums allow for joint problem solving. Nurses should always be open for evidence based practice improvements. All nurses should have a continual inquiry mindset and approach to their practice.

Being engaged in the community enables the nurse to know and utilize the resources available to enhance his/her patient’s care. Community engagement enables the RN to impact population health. What are the resources within a 5 mile or a 10 mile radius of your community or your patient’s community? To name a few: Is public transportation available? What are the local diabetes resources? How readily available is OT/PT? What smoking cessation programs are within your county? What can you as a lone RN do to impact the population health of your neighbors? Better yet, what can we (the collective we of 100,000 Indiana licensed RNs) do to improve population health in our state?

Become engaged with your patients, your profession and your community!
I first thought about attaining professional certification while I was working in the acute psychiatric care setting in 2013. I had been a nurse for 2 years and was encouraged by my manager and educator to reach for this milestone. I have been fortunate to work for an organization that not only encourages certification as a professional goal; but also offered small study groups to help prepare for the exam. Several educators, our medical director and even some local professors were all so willing to help us learn. I was so nervous to take the exam that I would not even tell my manager when it was scheduled. However, I could not wait to turn in my passing results for the exam that was approved by the ANCC.

As I continued to grow throughout the next three years, I returned to school for my MSN in psychiatric-mental health nursing certification. My experience and certification in mental health has been invaluable in navigating many patient situations in the emergency setting. However, I made a professional promise to myself and my patients that I would become certified in emergency nursing as well. With some experience under my belt, I felt more confident studying for this exam on my own; and, I achieved Certification in Emergency Nursing from the BCEN in July 2016.

One of my leaders told me that “certification is not simply some letters to put behind your name or a bump in pay at work; but rather an investment for continued growth in knowledge and practice that ensures delivery of the best quality care that you can provide.” I will always remember this throughout my career, wherever it may lead me.

Lauren M. Quandt, BSN, RN-BC, CEN

Thanks, Lauren, for sharing your experience and your leader’s comment with us. Your experience truly exemplifies how certification ensures that patients receive the best professional nursing care! Hopefully other nurses will follow you into certification!

Do you want to share your certification story with your colleagues? It may encourage them to join you! Please contact me at suejohn126@comcast.net to share your experiences!
CEO Note

Indiana Nurses Crafting Indiana Nursing

Not long ago ISNA held our annual Convention in Kokomo, at the IU Kokomo campus. I would like to thank Dr. Linda Wallace for hosting and making us feel so welcome. I would also like to thank Dr. Angie Heckman for making it happen. For the first time in a very long, long time the convention sold out. We had to tell nurses that we could not let them attend. That was heart breaking. More than 200 nurses and nursing students came together to hear the latest in Indiana nursing and to discuss the future of Indiana nursing. Every voice was welcomed and heard. Next year the venue will be larger so we can include more nurses and students.

As we the nursing community move into the future, ISNA is working to make that future the reality that Indiana nurses craft. All voices are needed, including yours so get involved by participating in your professional organization, ISNA. The law makers, lawyers, farmers, business men and women are getting ready to look at scopes of practice, do you want to be involved? Do you want nursing scopes to be changed with or without the advice of nurses? Do you want to practice at the level of your education and training? Have you thought about it? Today is the day to start working on the future. I look forward to hearing from you, if you are not a member join and get involved. If you are a member get involved. You can reach me at gingy@IndianaNurses.org

Next year’s Convention will revolve around Healthy Nurse/Healthy Nation, I hope to see you there.

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ISNA Welcomes Our New and Reinstated Members

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South Bend, IN

Alexandra Baker
New Castle, IN

Celeste Beauty
Indiana, IN

Suzanne Borse
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Becky Bottroff
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Mary Brand
Whiteland, IN

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Lafayette, IN

Denise Brooks
Clarksville, IN

Lori Bumps
Greenwood, IN

Abby Bushnell
Indiana, IN

Diana Carlson
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The Electronic Dues Payment Plan (EDPP) provides for convenient monthly payment of dues through automatic monthly electronic transfer from your checking account. To authorize this method of monthly payment of dues, please read and sign the authorization below, and enclose a check for the first month (full reduced $12.38).

The amount to be withdrawn is $__________ each month. ANA is authorized to charge the specified service fee of $0.50 each month from your checking account. This authorizes ANA to withdraw 1/12 of your annual dues and the specified service fee of $0.50 each month from your checking account. It is to be submitted on or after the 15th day of each month. The checking account designated and maintained is as shown on the enclosed check.

To cancel the authorization, I will provide ANA written notification thirty (30) days prior to the deduction date.

Brianne Proper
255 E 86th St
Indianapolis, IN 46220
Many nurses face the question of how to display their professional credentials when signing their name or documenting credentials. Professional credentials include educational preparation, licensure, and certification. Unfortunately, credential documentation has become more complex, requiring nurses to link both educationally and professionally. Currently, nurses can earn over 200 legal and professional credentials.

Some nurses have played the “Name Game” with listing credentials after their name for years. Originally written and performed by Shirley Ellis, “The Name Game” is a popular song from the 1960’s in which new names are created by adding and subtracting letters forming variations on a person’s name. This process ends with the original name, but in the middle, there are multiple modifications. Nurses have been playing this “Name Game” with initials for many years. Each verse begins and ends with a person’s name. Each verse adds or even health care consumers to understand what the credentials signify? This “Name Game” affects both nurses and policymakers is crucial to the advancement of nursing. As stated by Mary Smolenski (2002), “If you put the Right letters, in the Right order, at the Right time, for the Right reason, and they mean something to the Right person you can win the game” (p. 5).

The future of the nursing profession is dependent upon nurses proceeding in a united manner. By clearly communicating the importance of displaying credentials and understanding which credentials mean something to other nurses, health professionals, policy makers, and consumers, the credibility and professionalism of nursing can be improved. As stated by Mary Smolenski (2002), “If you put the Right letters, in the Right order, at the Right time, for the Right reason, and they mean something to the Right person you can win the game” (p. 5).

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The changing landscape of professional nursing has become more complex, requiring nurses to link both educationally and professionally. Currently, nurses can earn over 200 legal and professional credentials.

There are multiple certifications/certificates, it may be difficult to decide what order. A good rule is to list in order of relevance to practice or the order in which they were obtained. It is important to list non-nursing designations last. Keep in mind, too many letters can be confusing to other health care professionals and consumers. Nevertheless to say this also promotes the “Name Game.”

The recommended standard credential order must be consistently followed. To promote this standard, it is essential to communicate this order to all practicing nurses, new graduates, publishers, and those who achieve new credentials. A marketing strategy that includes a well-crafted message will assist the nursing profession in making this cultural change. Preparing publications for dissemination and persuading professional organizations to clearly articulate and post the standard recommendations are needed.

Credentia lity is a way of identifying achievements, expertise, and credibility. The ability to clearly display educational preparation, professional organizations to clearly articulate and promote the standard "Name Game" music can stop.

nurses can have a consistent "name" and the "Name Game" can only be taken away under rare circumstances.

E llen M. Alversoo, DNP, RN, FNP-BCC, CNE, Associate Professor \nValparaiso University \nCollege of Nursing and Health Professions

References
American Nurses Credentialing Center (ANCC, 2013) clearly display guideline information and recommend the same sequencing: list the most permanent to the least permanent certification. Crawford and partners (2016) states that many nurses list the most permanent to the least permanent certification. This method is still used, however, nurses list any completed education and/or certification first (i.e. BSN, RN). 

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The 2017 Indiana General Assembly session is just around the corner. Over 1,000 bills will be introduced the first week of January. Your next issue of this Bulletin in February will include a rundown of healthcare-related bills. Members of ISNA will receive weekly updates throughout the legislative session. ISNA is currently working with the Interim Study Committee on Fiscal Policy to complete the 2017 budget process, which includes a bill to join the compact, but modified the language from the national model. In both cases, Indiana was not accepted into the compact. At the end of the hearing, the committee members unanimously voted not to recommend moving forward with the Nurse Licensure Compact in Indiana at this time. ISNA has supported the proposal each time, and I participated in the October hearing, which also included a letter of support from the Indiana Center for Nursing (ICN) and the ICN Diversity and Inclusiveness Initiative. The hope is that the proposal will be accepted into the compact, and the process is focused on the scope of the problem and did not adequately address the underlying causes that lead to disease outbreaks. The committee did not need to know more about this issue to feel comfortable moving a bill forward in the upcoming session. In addition to the legislative study committees, there are multiple advisory councils that make healthcare policy recommendations to the government year-round. For this year, ISNA has advocated for the implementation of a program to improve the provider audit process by making it more provider-friendly. As a precursor to the legislative sessions, but has not passed. The committee’s preliminary report states that “a more robust discussion is needed of the economic challenges that food providers must overcome in order to serve underserved areas.” Committee discussion was focused on the scope of the problem and did not adequately address the underlying causes that lead to disease outbreaks. The committee did not need to know more about this issue to feel comfortable moving a bill forward in the upcoming session.

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Regional Health Clinic is a Federally Qualified Health Center (FQHC), with two locations in Richmond, IN, and one location in East Chicago, IN. Our goal is to provide the community with affordable, accessible healthcare. We offer primary health care and dental care to women, men, and children. We provide care to patients of all ages. We are looking for a Family Nurse Practitioner to join our team.

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Blayne Miley, JD
Director of Policy & Advocacy
bmiley@indiananurses.org
Confessions of a (formerly) Quiet Constituent

Leah Scalf RN, MSN, NE-BC

Are you aware hundreds of bills are initially proposed to be heard during each Indiana legislative session? In an interview with Cindy Kirchhofer, State Representative for District 89 and Chair of the House Public Health Committee, she stated it is not unheard of to have 1,000 proposed bills submitted in the hope of being heard during session. Of those, she estimated that approximately 200 are related to issues important to healthcare providers. Of those 200, around 50 proposed bills will be moved on for further review and potential presentation during the legislative session, if only 10% of those make it through the legislative process of both the House and Senate and are signed into law, that could result in 5 new bills potentially affecting nurses in Indiana. Representative Kirchhofer elaborated on this stating that she individually can make a huge impact. Representative Kirchhofer went on to state that in terms of commenting on new legislation, nurses are also one of the “quietest” groups. As a graduate student earning my Doctorate in Nursing Practice (DNP), I have seen this as well. During a policy course, we heard directly from multiple legislators their desire to hear from nurses. Representative Kirchhofer spoke on this topic during the recent Inaugural Health Policy Advocacy Day this past September. She stressed the importance of building a relationship with your legislators. This can be as simple as introducing yourself when you see them out in public and thanking them for their service. More importantly, I take that as the voice of the whole when that mark represents our collective voice at all. Our individual opinions are important to them. She went on to add “I was surprised at how quiet nursing’s voice was and how much our voice matters. If someone is speaking on behalf of nursing, the representatives and senators will take that as the voice of the profession when that mark represents nursing’s collective voice at all.” The voice is that in front of them can influence their decision and vote. As a constituent, I don’t have to go to the chair of a committee such as Public Health to make my opinion heard. I can go directly to my legislator and they will represent my voice.

I confess that I used to believe that policy advocacy involved a nurse expert testifying before the General Assembly utilizing volumes of data and elaborate graphs to support testimony. What I have learned during the process is that legislators do not want to have my opinion as a healthcare expert even if it is just sitting down and talking to them on the phone for 5 minutes or sending them a personal email giving my view of an upcoming bill. Even though we lead very busy lives, becoming health policy advocates is important not only to promote our profession but is critical because it impacts us at an individual level in the work that we do each day. There are several resources to help us become health policy advocates. Most of our professional organizations have resources devoted to health policy. For ISNA, one such resource is the ISNAble (http://isnanurses.org/policy/isnaable), the weekly e-newsletter sent to all ISNA members. Another is ISNA’s Policy Conference during the legislative session. There is also the Indiana General Assembly website (iga.in.gov) which can help us stay informed regarding legislation to be heard in the General Assembly relating to nursing. Many sessions can be viewed on-line. I now understand the importance of providing my voice and experience as a nurse to help promote my profession. I recognize the significance of protecting nursing’s interest regarding future bills coming before the General Assembly and understand how little it takes to make a big impact. This has really opened my eyes and given me the inspiration to become involved in the process. It is that inspiration that I want to pass along to my colleagues in nursing. You can get started now by going to this website: https://iga.in.gov/legislative/find-legislators/ to find your legislators and send them a quick email to introduce yourself and thank them for the work that they do in supporting health policy.

References
Kaiser Family Foundation. (2016). Total number of professionally active nurses. Retrieved from http://kff.org/other/state-indicator/total-registered-nurses/?currentTimeframe=0&sortMethod desc=.asc&sortMethod asc%22%7D=22%22%7D&location=52%22%22sortMethod asc%22%7D=22%22%7D&state=6%22%7D=57

Novembre, December 2016, January 2017

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Interpreting Common Lab Values

This independent study has been developed to enhance the ability to interpret four common lab tests as well as blood gas findings. 1.05 contact hour will be awarded.

The Ohio Nurses Association (OBN-001-91) is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation. (Expires 1/2018).

DIRECTIONS:

1. Please read carefully the attached article entitled “Interpreting Common Lab Values,” and answer the post-test questions.
2. Return the following to the Indiana State Nurses Association, 2915 N. High School Road, Indianapolis, IN 46224:
   – The post-test;
   – completed registration form;
   – and evaluation form.

The post-test will be reviewed. If a score of 70 percent or better is achieved, a certificate will be sent to you.

If a score of 70 percent is not achieved, a certificate will not be issued. A letter of notification of the final score and a second post-test will be sent to you. We recommend that this independent study be reviewed prior to taking the second post-test. If a score of 70 percent is achieved on the second post-test, a certificate will be issued.

If you have any questions, please feel free to call Marla Holbrook at 317-299-4575 or mholbrook@indiananurses.org.

The author of this study is Barbara Walton, MS, RN. The author and planning committee members have declared no conflict of interest.

Outcome: Enhance the ability to interpret four common lab tests as well as blood gas finding.

Disclaimer: Information in this study is intended for educational purposes only. It is not intended to provide legal and/or medical advice.

DIRECTIONS: Read the following case studies. Answer the questions regarding each case study and then review the correct answer and its explanation. At the end of the program, complete the post-test by circling the one correct answer for each multiple-choice question.

HEMATOLOGIC LAB STUDIES
Mrs. J. has brought her 4 year old son, Todd, to the office with complaints of persistent nose bleeds. She states he has a nose bleed at least once a day and has noticed that he seems to have more bruises on his arms than usual. Your physical exam reveals several ecchymotic areas on both arms in various stages of healing. He denies any trauma to the areas, stating that they “just happen.” His last nose bleed was yesterday around noon. He denies nose picking or other trauma. He states, in fact, that he was just “watching TV” when his nose began to bleed yesterday. His mother states the bleeding is always profuse, usually from both sides of the nose and it generally takes about 15 minutes to get it stopped. His vital signs are: T 98.6, B/P 80/60, HR 100, R 22. Ht 42 inches, and wt 45 lbs.

1. In light of your findings and the patient’s history, what blood studies would you expect the physician or APN to order?

Discussion

If you answered CBC with diff, PT, PTT, and platelets you are right on target! Let’s take a look at why these tests would be ordered.

By definition, epistaxis is bleeding from the nose caused by trauma, irritation, coagulation disorders, or chronic infection. The history obtained from the patient and his mother rules out trauma and irritation, leaving coagulation disorder and infection as strong possibilities. He also has several bruises which may hint at some hematologic problem. His lab results are:

<table>
<thead>
<tr>
<th>CBC</th>
<th>RBC</th>
<th>4.0 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCV</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>MCH</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Hgb</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>Hct</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>Platelets</td>
<td>80,000</td>
<td></td>
</tr>
<tr>
<td>WBC</td>
<td>75,000</td>
<td></td>
</tr>
</tbody>
</table>

Differential: Neutrophils 63%; Lymphocytes 32%; Monocytes 3%; Eosinophils 3%; Basophils .5%

2. Identify which of the above lab values are normal or abnormal by placing an N or an A next to each result.

Discussion

Let us now review your answers about whether or not these are normal lab values.

RBC: 4.0 million

This is a low normal value for a child 4 years of age. Normal value is 4.5-5.2 million, although values for all lab findings may vary slightly from lab to lab.

MCV: 80

The mean corpuscular volume of the red blood cell determines the size and volume of each red blood cell. The normal for this patient would be 80. If you marked it normal you were right!

MCH: 27

This is the mean corpuscular hemoglobin and determines the hemoglobin content in RBCs. (Hemoglobin of 100 ml of RBCs). Todd’s value is normal.

These corpuscular tests are helpful when diagnosing certain types of anemias, hepatic disease, iron deficiency, malaria and many other disorders that affect the hematologic system.

Hgb: 9.4

This determines the amount of hemoglobin in a given volume of blood. A four year old child should run between 6.4 and 15.5. Todd is on the low side of normal.

Hct: 31%

The hematocrit determines the percentage of blood composed of RBCs. Todd should fall between 31% and 44%. Again, our patient is on the low end of normal.
Platelets: 80,000
The platelet count determines the number of platelets in 1 mm3 of blood. Normal platelet count would be about 250,000. Did you mark this test result as abnormal? Since platelets play a significant role in coagulation, this may be part of the reason for Todd’s bruises and his frequent epistaxis.

WBC: 75,000
The WBC gives us the number of white blood cells in 1 mm3 of blood. Normal for Todd should be 5700-13,000. His WBC is extremely elevated, more than would be expected if he just had an infection. Our next step is to look at the differential to see if it will tell us more about Todd’s problem.

Neutrophils: 65%
In a WBC differential, 100 or more white cells are classified into two major types of leukocytes: granulocytes (neutrophils, eosinophils, basophils) and nongranulocytes (lymphocytes and monocytes). Neutrophils play an important role in fighting bacterial infection in the body. Large numbers of neutrophils can be produced by the bone marrow in response to infection. Soon, however, our body runs out of mature neutrophils and begins pushing immature ones into our system. Immature neutrophils (called blasts, bands, or stabs) are not as effective as mature neutrophils. An increase in the immature neutrophils is called a “shift to the left.” Normal neutrophil count for Todd would be about 50-60. His is elevated, indicating either a ferocious infection or a problem with the white cells themselves.

Eosinophils: 3%
Eosinophils elevate in times of allergic reaction. Normal is 1-3% of the WBC. Todd is normal here.

Basophils: .5%
Basophils work in hypersensitivity reactions and enhance the inflammatory response. Normal value is 0-0.75%. Todd falls within normal limits.

Lymphocytes: 32%
Usually about 30% of the total white blood cell count is lymphocytes. They play a major role in cell-mediated and humoral immunity and are divided into T-cell and B-cells. This is an abnormal elevation for Todd.

Now let us put all this information together. Todd has a grossly elevated WBC with a pronounced “shift to the left.” The lymphocyte count stands out as well. His platelet count is decreased and his H/H is borderline low. All of this data may indicate that Todd is experiencing acute leukemia and that is the reason for his frequent epistaxis and many bruises. However, further testing would be indicated, especially a blood smear which would show numerous blast (immature) cells. A bone marrow biopsy might also be scheduled and would also reveal massive blast cells.

BLOOD CHEMISTRIES
Ms. S. is a 24 year old female who presents to the office with complaints of severe diarrhea. She states she has been having at least ten bowel movements per day. She describes them as watery brown, somewhat mucousy and in large amounts. She also states she has severe cramping with them. She claims she has never experienced this in the past. Your physical examination reveals a very thin, pale woman with dry mucous membranes and poor skin turgor. She is 5’7” tall and weighs 105 pounds. She states this is ten pounds below her usual weight. She is on no medications and states she thought she had just the “flu” but became concerned when it did not clear up in a few days. Vital signs are T 99, HR 100, RR 24, B/P 90/60 in the upright position.

1. Given this information, what blood chemistries would you expect to be ordered?

Discussion
Most of you would agree that the physician or APN would probably order at least serum electrolytes, BUN and creatinine in addition to a stool culture. Todd has a grossly elevated WBC with a pronounced “shift to the left.” The lymphocyte count stands out as well. His platelet count is decreased and his H/H is borderline low. All of this data may indicate that Todd is experiencing acute leukemia and that is the reason for his frequent epistaxis and many bruises. However, further testing would be indicated, especially a blood smear which would show numerous blast (immature) cells. A bone marrow biopsy might also be scheduled and would also reveal massive blast cells.

Now let us now take a look at each value and see what information it gives us.

Na: 130
If you labeled this as abnormal, you are right. Normal serum sodium for adults is about 135-145. Again, it is important for you to familiarize yourself with the values used at your lab since they may vary slightly from lab to lab.

CO2: 22
This is abnormally low. The normal range is 97-107.

Cr: 1.0
A normal creatinine is 0.5-1.1.

BUN: 20
This is an elevated level since the normal is about 5-18.

You probably had no problem recognizing the abnormal values with this patient. Now let us put all the values together so that we can draw some conclusions about Ms. S’s problem.

Ms. S’s blood chemistries were:

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na</td>
<td>130</td>
</tr>
<tr>
<td>Cl</td>
<td>92</td>
</tr>
<tr>
<td>K</td>
<td>3.0</td>
</tr>
<tr>
<td>CO2</td>
<td>22</td>
</tr>
<tr>
<td>Cr</td>
<td>1.0</td>
</tr>
<tr>
<td>BUN</td>
<td>20</td>
</tr>
</tbody>
</table>

1. Take a moment now to write N for normal or A for abnormal next to each of the values.

Independent Study continued on page 10
Independent Study continued from page 9

electrolyte imbalances: dehydration, NA deficit, and K deficit. The body has compensatory mechanisms such as fluid shifts, aldosterone and ADH secretion which attempt to deal with the fluid and electrolyte disturbances caused by diarrheas. In this patient’s case, these mechanisms were not enough to correct her problems.

Our initial lab values show dehydration, hyponatremia, hypochloremia, and hypokalemia. These are the results of the patient’s problem but do not give us the full picture. More information is needed to further identify the cause of her diarrheas. She may be suffering from her first episode of ulcerative colitis. In the meantime, you could expect the physician or APN to treat the fluid and electrolyte disturbances because further depletion could result in severe complications such as cardiac dysrhythmias and renal failure.

ARTERIAL BLOOD GAS VALUES

Mr. M. is a 59 year old male who has been under the care of your physician group for several years. He has a long history of emphysema, having been a 50 pack/yr smoker. During the last year he has been hospitalized twice for respiratory failure, the last time resulting in a two week stay in the intensive care unit on a ventilator. For the last two months, Mr. M. has been relatively well. He has presented himself to the office for a routine check-up. He is 5’9” and weighs 180 pounds. Vital signs are T 98, HR 100, RR 38, B/P 150/90. He denies shortness of breath but appears to be working hard at his breathing, using all of his accessory muscles.

His lips and nailbeds are slightly cyanotic. The breathing, using all of his accessory muscles. He reports difficulty sleeping at night to go to the bathroom because the pain awakens her. During the day she states she has to go to the bathroom ten or fifteen times. She awakens her. During the day she states she has to try to alleviate the problem but believes that it has just gotten worse. She claims to have had this problem for about two weeks. As you would expect, the physician orders a urinalysis and urine culture and sensitivity. Here are the results of those tests:

Urine C/S reveals more than 100,000/ml bacterial colonies

Urinalysis:
- Color: Dark Yellow
- Appearance: Clear
- pH: 6.6
- Ketones: Negative
- Glucose: Negative
- Protein: 1+
- Leukocytes: 2
- Erythrocytes: 1
- Epithelium: 4
- Casts: Moderate
- Bacteria: Small amount
- Parasites: None

Here are the answers:
- a) metabolic acidosis
- b) metabolic acidosis
- c) respiratory acidosis
- d) respiratory alkalosis

Note that the PaO2 does not play a role in determining acid-base imbalance. However, it is an important indicator of oxygenation and should be evaluated within the context of the acid-base balance.

2. Interpret the following blood gases.

<table>
<thead>
<tr>
<th>pH</th>
<th>PaCO2</th>
<th>HCO3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.35</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>7.46</td>
<td>30</td>
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</tr>
<tr>
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<td>20</td>
<td>28</td>
</tr>
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</table>

Here are the answers:
- a) metabolic acidosis
- b) metabolic acidosis
- c) respiratory acidosis
- d) respiratory alkalosis

Of course, blood gas interpretation is not always so easy since the body has compensatory mechanisms which try to return the body to a normal pH. These mechanisms do not always work, especially in patients who have been in chronic acid-base imbalance.

Let us go back now and look at Mr. M. Did you interpret his blood gases as respiratory acidosis? If you did, you were correct. Patients with emphysema have lost their gas-exchange surface because of the loss of the elastic recoil of the alveoli. The result is air-trapping and destruction of the alveolar wall. These patients usually compensate over time for the CO2 retention that takes place and they become members of what is often called the 50/50 club. This means that their bodies adjust to a 50 PaO2 and a 50 PaCO2. It is when the PaCO2 begins to rise above the PaO2 that respiratory failure ensues. Even though Mr. M. is denying any shortness of breath, his ABGs indicate that some respiratory status will degenerate. He requires immediate intervention such as low flow oxygen therapy and breathing treatments which will help him blow off some of this excess CO2.

URINE STUDIES

Mrs. H. is a 50 year old owner of a small business. She presents at the office with complaints of a burning, stabbing pain in her lower pelvis that is only relieved when she urinates. She states that she gets up frequently at night to go to the bathroom because the pain awakens her. During the day she states she has to go to the bathroom ten or fifteen times. She has decreased the amount of fluids she drinks to try to alleviate the problem but believes that it has just gotten worse. She claims to have had this problem for about two weeks.

As you would expect, the physician orders a urinalysis and urine culture and sensitivity. Here are the results of those tests:

Urine C/S reveals more than 100,000/ml bacterial colonies

Urine C/S reveals more than 100,000/ml bacterial colonies


d. I/Atinos

c. Bacteria

Here are the answers:

1. Next to each finding, place an N for normal or an A for abnormal.

Discussion

Now let’s take a look and see how many you marked correctly.

Urine C/S reveals more than 100,000/ml bacterial colonies

It is always important to carefully analyze each finding and determine the significance of the results. This allows the physician to make accurate diagnoses and provide appropriate treatment.

These are the results of the patient’s problem but do not give us the full picture. More information is needed to further identify the cause of her diarrheas. She may be suffering from her first episode of ulcerative colitis. In the meantime, you could expect the physician or APN to treat the fluid and electrolyte disturbances because further depletion could result in severe complications such as cardiac dysrhythmias and renal failure.

Discussion

There are four major acid-base disorders: respiratory acidosis, respiratory alkalosis, metabolic acidosis and metabolic alkalosis. Typically the interpretation of blood gases is a simple process. The chart below gives you a “quick look” method:

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Here are the answers:

1. a. Abdominal pain
2. b. Gallbladder imaging
3. c. Cholecystectomy

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Interpreting Common Lab Values

Post-Test and Evaluation Form

DIRECTIONS: Please complete the post-test and evaluation form. There is only one answer per question. The evaluation questions must be completed and returned with the post-test to receive a certificate.

Name: ____________________________  Date: ____________  Final Score: ______

Please circle one answer.

1. Which of the following sets of lab tests would be ordered when trying to identify a bleeding problem?
   a. Na, Cl, CO2  
   b. K, Ca, BUN  
   c. PT, PTT, platelets  
   d. MCV, MCH, MCHC

2. Which of the following sets of lab tests would be ordered when a patient has been experiencing fluid loss through diarrhea or vomiting?
   a. PT, PTT, platelets  
   b. Na, Cl, K, BUN  
   c. arterial blood gases  
   d. SGOT, SGPT, LDH

3. The presence of many immature neutrophils in a WBC differential is called:
   a. a shift to the right  
   b. thrombocytopenia  
   c. a shift to the left  
   d. leukocytopenia

4. A normal serum sodium (Na) for an adult is:
   a. 135-145  
   b. 5,000-10,000  
   c. 2-5  
   d. 20-60

5. An elevation in the BUN without an elevation in the serum creatinine can indicate:
   a. kidney disease  
   b. cardiac dysfunction  
   c. protein breakdown  
   d. hypervolemia

6. Which of the following blood gas values indicate respiratory acidosis?
   a. pH 7.40, PaCO2 40, HCO3 24  
   b. pH 7.48, PaCO2 28, HCO3 16  
   c. pH 7.32, PaCO2 46, HCO3 16  
   d. pH 7.30, PaCO2 50, HCO3 23

7. Which of the following blood gas values indicate metabolic acidosis?
   a. pH 7.40, PaCO2 40, HCO3 24  
   b. pH 7.48, PaCO2 28, HCO3 16  
   c. pH 7.32, PaCO2 46, HCO3 16  
   d. pH 7.30, PaCO2 50, HCO3 23

8. In a random urinalysis, which of the following values is considered normal?
   a. trace of albumin  
   b. positive for nitrates  
   c. specific gravity of 1.020  
   d. positive for ketones

9. The presence of leukocytes in the urine may indicate:
   a. urinary tract infection  
   b. poor glomerular filtration  
   c. inadequate fluid intake  
   d. dysfunction of the bone marrow

10. A urine culture and sensitivity indicates clinically significant bacteriuria when there are how many bacterial colonies grown?
    a. 20,000/ml  
    b. 50,000/ml  
    c. 75,000/ml  
    d. 100,000/ml

Evaluation

1. What one strategy will you be able to use in your work setting?
   Yes  No

2. Was this independent study an effective method of learning?
   Yes  No

3. How long did it take you to complete the study, the post-test, and the evaluation form?

4. What other topics would you like to see addressed in an independent study?

Registration Form

Name: ____________________________  (Please print clearly)

Address: ____________________________  Street: ____________  City/State/Zip: ____________

Daytime phone number: ____________  RN: ____________  Email address: ____________________________

Fee: $80  

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Date Received: ____________  Amount: ____________

Check No. ____________

IN YOUR WORK SETTING?

IN AN INDEPENDENT STUDY?

How long did it take you to complete the study, the post-test, and the evaluation form?

If no, please comment: ____________________________

MAKE CHECK PAYABLE TO THE INDIANA STATE NURSES ASSOCIATION (ISNA)

Enclose this form with the post-test, your check, and the evaluation and send to:

Indiana State Nurses Association
2915 N. High School Road
Indianapolis, IN 46224

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Parkview Mirro Center for Research and Innovation
10622 Parkview Plaza Drive, Fort Wayne, IN 46845

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