Prescription Drug Abuse/Misuse: Part 1

By Michael R. O’Leary, M.D., CEO

Prescription drug abuse is the use of a medication without a prescription, in a way other than prescribed or for the experience or feelings elicited. According to several national surveys, prescription medications such as those used to treat pain, attention disorders and anxiety are being abused at a rate second only to marijuana among illicit drug users. The consequences of this abuse/misuse have been steadily worsening, which are reflected in increased treatment admissions, ER visits and overdose deaths.

The non-medical use and abuse of prescription drugs is a serious health problem in this country. Although most people use prescription medications responsibly, an estimated 52 million people have used prescription drugs for non-medical reasons at least once in their lifetime. Young people are strongly represented in this group. In fact, the National Institute on Drug Abuse’s “Monitoring the Future” survey (2010) found that one in 12 high school seniors reported past-year non-medical use of the prescription pain reliever Vicodin (hydrocodone) and one in 20 reported abusing OxyContin (oxycodone), making these two drugs among the most commonly abused by adolescents.

There are many reasons for the high prevalence of prescription drug abuse but greater availability plays a key role. The number of prescriptions for opioids for example has nearly quadrupled in 20 years to a record 140 million in 2010! More alarming is the fact that unintentional overdose deaths involving opioid pain relievers have quadrupled since 1999 and by 2007, outnumbered those involving heroin and cocaine.

What are opioids?

Opioids are medications that relieve pain by reducing the intensity of pain signals reaching the brain and alter those brain areas controlling emotions, which diminish the effects of a painful stimulus. Medications in this category include hydrocodone (e.g. Vicodin), oxycodone (e.g. Oxycontin), morphine and codeine.

Opioids may also produce drowsiness, mental confusion, nausea and depending on the amount of drug taken, can depress respiration. Some people experience a euphoric response to opioids since these drugs also affect the brain regions involved in reward. Those who abuse opioids may seek to intensify their experience by taking the drug in ways other than those prescribed. For example, OxyContin is an oral medication used to treat moderate to severe pain through a slow, steady release of the opioid. OxyContin abusers may snort or inject it, thereby increasing their risk for serious medical complications including overdose.

Diversion of prescription pain medications for non-medical use can be very profitable. The “street” price for a single OxyContin pill may be as high as $80!

Suggested further reading on this important topic may be found in the April 4, 2012, Journal of the American Medical Association (JAMA), page 1377. Copies of this article are available free of charge from Laboratory Alliance. Please call (315) 461-3008 to request a reprint.

Laboratory Alliance Recognized for Environmental Preservation Efforts

Laboratory Alliance was recognized by Cintas Document Management for its Partnership in Excellence in “Preservation of the Environment and in Document Security.” Materials Manager Dru Ellen Neis accepted the award on Feb. 29 from Carolyn Davis, account manager for Cintas.

In 2011, Laboratory Alliance saved
894 Trees
105 Barrels of Oil
368,270 Gallons of Water
158 Cubic Yards of Landfill

Each year, Cintas will continue to track Laboratory Alliance's environmental preservation efforts and report our contribution to this cause.

Welcome to our New Clients

Gentiva Health Services
Oswego, N.Y.

Marcellus Family Medicine
Marcellus, N.Y.

Mary Oot, FNP PC
East Syracuse, N.Y.

Neurological Care of CNY
Liverpool, N.Y.

Syracuse Surgery Center, LLC
Liverpool, N.Y.

Celebrating the New Pediatric Urgent Care at UUH at Community General

A ribbon cutting ceremony was held at the new after-hours pediatric urgent care at Upstate University Hospital at Community General in early March. About 70 guests attended the event including Laboratory Alliance’s CEO Dr. Michael R. O’Leary, Vice President of Operations Marilyn LeClair, and Vice President of Business Development and Marketing Anne Marie Mullin. Laboratory Alliance underwrote refreshments served at the event.

Center, SUNY Upstate University President Dr. David Smith, right, introduces Upstate University Hospital at Community General’s Chief Administrative Officer Meredith Price, center, and Dr. Alison McCrone, left, the pediatrician in charge of the Upstate Golisano After Hours Care, both accompanied by their young daughters.

Top right, Upstate University Hospital at Community General’s Chief Administrative Officer Meredith Price holds her daughter and helps her son cut the ribbon, while guests look on.

Right, SUNY Upstate University President Dr. Smith, left, helps Dr. McCrone and her children cut the ribbon while Dr. John McCabe, CEO of Upstate University Hospital, looks on.
Vitamin D Linked to Youth Bone Fractures

For several years we have been encouraging our readers to have their vitamin D levels tested because living north of the Mid-Atlantic States means we do not get enough vitamin D from the sunlight.

Research continues to prove that vitamin D is important to our health and a deficiency can lead to numerous health issues.

Last fall we reported on a Post-Standard article that said sunlight and food alone do not provide enough vitamin D. It addressed that vitamin D deficiency contributes to the development of osteoporosis and weakened immunities. Another report said that vitamin D plays a role in the prevention of age-related macular degeneration, a disease associated with aging that gradually destroys vision.

In March, The New York Times published "Childhood: Vitamin D Means Fewer Fractures for Girls" by Nicholas Bakalar. The article said that higher amounts of vitamin D in the diet are associated with a lower risk for bone fractures in teenage girls, according to a new study.

In the study, which was published online in Archives of Pediatrics & Adolescent Medicine, researchers studied stress fractures – the kind that occur with repeated rather than sudden stress to a bone – in 6,712 girls ages 9 to 15 over a seven-year period. They followed up with diet questionnaires and calculated the girls’ intake of calcium, vitamin D and dairy foods.

“This is an observational study only,” said the study’s lead author, Kendrin R. Sonneville, a research scientist at Children’s Hospital Boston. “But it can’t hurt, and it might help, to take the recommended or higher doses of vitamin D.”

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Many locations open on Saturdays • Most medical insurance plans accepted

We’re also in Baldwinsville, Camillus, Cicero, Fayetteville, Liverpool, Pulaski and 4 locations in Syracuse

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For directions to all of our Patient Service Centers, or for more information, visit www.laboratoryalliance.com

New Partnership Expands Health Care Options at OCC

By Kevin Tampone
CNY Business Journal

SYRACUSE — Onondaga Community College (OCC) and Broome Community College (BCC) are launching a new partnership involving three health care programs.

The initiative will allow Onondaga County students to earn a clinical laboratory technician associate’s degree, a histological technician certificate, or a computed tomography certificate without leaving the area. Students will take courses at OCC and then work with BCC to complete necessary clinical work in the Syracuse area.

Students will receive their degrees from BCC.

The programs prepare students for a range of careers in health care, including hematology, clinical chemistry, clinical microbiology, work with pathologists in aiding patient diagnosis, and medical imaging. The programs will be available beginning in this fall.

OCC recently hosted information sessions on the new partnership. To learn more, contact OCC at (315) 498-2000 or visit their website at occinfo@sunyocc.edu.
**Sentinel Antibiotic Susceptibility Prevalence Studies for Groups A and B Streptococci**

By Paul A. Granato, Ph.D., Director of Microbiology

Sentinel antibiotic susceptibility prevalence studies for groups A and B streptococci are performed biannually by our Microbiology Department to monitor the emergence of resistance to select antimicrobial agents, namely penicillin, erythromycin, and clindamycin. Group A and group B streptococcal isolates were collected from patient specimens from various physician practices and/or area hospitals throughout Onondaga County so that the results would not be biased by geographic location or physician practice specialty. The following highlights the results of these studies.

**Group A streptococcal study results**

From March 1 to March 31, 2011, 50 isolates of group A streptococci (GAS) recovered from adult and pediatric pharyngeal specimens were randomly selected for testing against penicillin, erythromycin, and clindamycin. As expected, all 50 isolates (100%) were susceptible to penicillin but, notably, the 50 GAS were also 100% susceptible to erythromycin and clindamycin.

Table 1 shows the comparative results for the sentinel studies that were performed in 2007, 2009, and 2011.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Penicillin</th>
<th>Erythromycin</th>
<th>Clindamycin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>100%</td>
<td>94%</td>
<td>98%</td>
</tr>
<tr>
<td>2009</td>
<td>100%</td>
<td>82%</td>
<td>84%</td>
</tr>
<tr>
<td>2011</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1. Comparative 2007, 2009 and 2011 Group A Streptococci Susceptibility Results

The 2011 susceptibility patterns for erythromycin and clindamycin represented a dramatic reversal in the previously observed increasing resistance trends that were detected for these antibiotics over the last two sentinel study periods of 2007 and 2009.

Although the reasons for this reversal are unknown, one prominent area infectious disease physician has suggested that the decreased incidence in erythromycin and clindamycin resistance may be due to the discontinuation of certain antibiotic promotions through pharmaceutical companies or discount retail stores and supermarket pharmacies that offered free prescription antibiotics.

Because erythromycin (azithromycin) and clindamycin were not part of the free antibiotic promotional plans, there may have been decreased use of these antibiotics, especially azithromycin, resulting in reversion of the GAS to its normal “wild-type” state because of lowered antibiotic selective pressure on the GAS to develop resistance.

The results of this limited sentinel study indicate that penicillin continues to be effective therapy for the treatment of GAS pharyngitis in the non-penicillin allergic patient and that erythromycin and clindamycin may be effective alternative therapeutic choices in the penicillin-allergic patient. This antibiotic susceptibility trend will be monitored and tracked by performing periodic sentinel studies.

**Group B streptococcal study results**

A similar antibiotic susceptibility prevalence study was performed on 55 randomly selected group B streptococci (GBS) recovered from vaginal specimens over a similar time period.

Table 2 shows the comparative results for the sentinel studies conducted in 2007, 2009 and 2011.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Penicillin</th>
<th>Erythromycin</th>
<th>Clindamycin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>100%</td>
<td>46%</td>
<td>54%</td>
</tr>
<tr>
<td>2009</td>
<td>100%</td>
<td>50%</td>
<td>64%</td>
</tr>
<tr>
<td>2011</td>
<td>100%</td>
<td>24%</td>
<td>38%</td>
</tr>
</tbody>
</table>

Table 2. Comparative GBS Sentinel Study for 2007, 2009 and 2011

As expected, all GBS isolates were susceptible to penicillin. However, an alarming and dramatic increased resistance to erythromycin and clindamycin was noted with only 24% and 38% of the GBS isolates tested susceptible to these respective antibiotics. Although erythromycin and clindamycin are the recommended antibiotics of choice for the treatment of GBS colonizations or infections in the penicillin-allergic patient, this astounding increase in resistance to erythromycin and clindamycin compared to the previous sentinel study of 2009 may be due to the increased use of these antibiotics to treat GBS colonized or infected patients who are not penicillin allergic. If treatment is indicated for GBS, penicillin remains the agent of choice for intrapartum antibiotic prophylaxis in the non-penicillin allergic patient. Ampicillin is an acceptable alternative but penicillin is preferred because it has a narrower spectrum of activity and is less likely to select for bacterial resistance. Importantly, physicians are reminded that confirmed GBS resistance to penicillin has not been reported to date and, as such, antimicrobial susceptibility testing against this agent is not performed.

For penicillin-allergic women at risk for anaphylaxis, cefazolin, clindamycin, and erythromycin are possible therapeutic options as recommended by the Centers for Disease Control. While there is no GBS reported resistance to cefazolin, the results of this sentinel study show that only 24% and 38% of the GBS isolates tested were susceptible to erythromycin and clindamycin respectively. Since antimicrobial susceptibility testing is not routinely performed on GBS isolates, physicians may specifically request such testing when considering erythromycin or clindamycin as therapeutic options.
Fecal Bacteriotherapy for Refractory Clostridium difficile Infections

By Paul A. Granato, Ph.D., Director of Microbiology

Clostridium difficile is a recognized cause of antibiotic-associated diarrhea and pseudomembranous colitis. The common symptoms of C. difficile infection (CDI) are a watery diarrhea several times a day with mild abdominal tenderness and cramping. In more severe cases, the colon becomes inflamed, causing a condition called pseudomembranous colitis, that is characterized by blood and pus in the stool and may be associated with more frequent diarrhea, abdominal cramping, and pain along with fever, nausea, dehydration, loss of appetite, and weight loss.

Over the last 15 years, the incidence of CDI in the United States has more than doubled with over 500,000 cases reported in 2010 resulting in an estimated 15,000 to 20,000 patient deaths. Despite the institution of vigorous infection prevention measures within hospitals and other healthcare facilities, the incidence of CDI continues to increase.

Contribute to the increased incidence is the emergence of a mutant, hypervirulent strain of C. difficile, called the 027/NAP1/BI strain, which produces excessive amounts of toxins that can cause more serious disease. In addition, some strains of C. difficile have developed resistance to certain antibiotics. The problem is further compounded by the fact that CDI is no longer restricted to hospitals and nursing homes. Individuals living in the community are now developing CDIs who have never been hospitalized but have received a course of antibiotic therapy that predisposes them to the development of infection.

Once CDI is diagnosed, it often responds to appropriate antimicrobial therapy. However, 15 to 25 percent of patients may develop relapses of infection, which usually are successfully treated with a second course of antibiotic therapy. Unfortunately, some of these patients may experience repeated relapses of infection because, for unknown reasons, their infection is refractory to antibiotic treatment. This chronic and persistent diarrhea affects the quality of one’s life and may eventually require bowel resection and colectomy. Severe cases may even result in the patient’s death.

Refractory CDIs have become an increasing problem of clinical concern and occurrence. Within recent years, fecal bacteriotherapy has been used to successfully treat patients who have recurrent or refractory CDI. Essentially, CDI results from the disruption of the bowel microflora that causes the overgrowth of C. difficile.

This condition usually results when certain types of antibiotics are used to treat other infections in the patient’s body. Normally, antibiotic therapy with metronidazole or vancomycin successfully eradicates the CDI and the bowel flora reestablishes itself restoring the patient to good health. In patients with refractory CDI, the microflora is unable to reestablish itself and the patient experiences a persistence of diarrhea along with the other symptoms of CDI.

Fecal transplant or fecal bacteriotherapy serves as an alternative approach for treating refractory CDI by reconstituting the patient’s bowel flora with a stool sample obtained from a healthy donor, usually a close family member. A stool specimen and sample of blood obtained from the donor are tested extensively by the clinical laboratory to insure that the donor is free of any potential microbial pathogens that could pose a serious infectious disease hazard to the recipient patient. Following that, the stool specimen undergoes a standardized processing protocol prior to the installation into the recipient patient.

Earlier reports evaluated the installation of the fecal transplant by nasogastric tube and colonoscopy, which are cumbersome and costly methods. More recently, fecal transplantation via retention enema has proven to be an inexpensive and easily performed alternative method that has a greater success rate. One recent study (Arch. Int. Med. 2012. 172:191-193) showed that 25 of 27 patients (93 percent) experienced clinical resolution of their CDI following fecal transplant using the retention enema procedure.

It is possible that the use of fecal bacteriotherapy will only increase as it establishes itself as a more universally accepted procedure for the successful therapy of refractory CDI. Although the use of such a treatment modality may be surprising and offensive to some, most patients with refractory CDI have benefitted from the procedure and give testimony to its medicinal use as their persistent infection has been cured and the quality of their life restored.

RFL Website Popular Spot for Information on Lab Testing

Remember the Results for Life website at www.labresultsforlife.org? About 4,000 unique visitors did last month – leading to about 75,000 hits. That reflects a growing trend in traffic in recent months. The RFL site usually draws about 3,000 visitors and 50,000 hits. Visit the site for the latest on RFL activities, and useful information on the value of lab tests for diabetes, cancer, lead poisoning, HIV and more.

... and in a New One-Pager for Capitol Hill

In April, Results for Life released a new “just-the-facts” one-pager on lab testing targeted at busy lawmakers. It shares key facts and figures in a single page, allowing Members of Congress and staff (and the media) to grasp the importance of lab testing value in a flash. Among the facts: lab test spending is only 1.6% of Medicare expenditures, but lab results are used in 70% of all health decisions; Pap tests have been key in the 75% drop in cervical cancer mortality; and an HbA1c test that costs about $13 can help prevent kidney failure and dialysis ($50K+ per year). Have a look, www.labresultsforlife.org
Karen Carter is Recognized for Commitment to HFMA

The Healthcare Financial Management Association (HFMA) of Central New York recently honored Karen Carter, vice president of finance and chief financial officer, with the Founders Medal of Honor Award, the highest level of recognition that a member can receive.

The award was presented Eric Fehrman, CPA, at the HFMA of CNY’s Annual Networking & Awards Night held Feb. 16. Karen will succeed Eric as president.

Receipt of this award requires a special nomination process and is only awarded to the most dedicated volunteers within the organization. Karen has been serving the local chapter in many different capacities over her years of service. She has chaired committees, served on the board and is currently serving as the president-elect. She will assume her role as president of the HFMA Central New York Chapter on June 1.

Nursing Students Learn About Laboratory Services

By Maria Dillon, Manager, RRL at St. Joseph’s Hospital Health Center

Medical Technologist Ashley Barzee, left, works with Guiseppina Domino, one of two St. Joseph’s College of Nursing (CON) students who participated in an interdisciplinary shadowing experience in the St. Joseph’s Hospital Rapid Response Laboratory for a week in April. This CON experience is designed to demonstrate and promote collaboration between and among nurses and other members of the healthcare team. The students rotated through anatomic pathology, central receiving, blood bank and the hematology/chemistry work cell, observing the role of the laboratory in patient care.

Laboratory Alliance

WSYR TV Channel 9’s Jeff Kulikowsky visited our Operations Center on April 25 and conducted an interview with Anne Marie Mullin for his segment on Central New York’s demand for trained workers in specific areas including laboratories and the health care industry in general. Here are some video clips from the segment that aired.
Over the last century, healthcare in the industrial countries evolved from being a home or family doctor-based service to one that increasingly provided care in centralized hospitals of various sizes and complexity. Clinical laboratory medicine followed a similar evolution from simple tests done bedside to increasingly complex testing performed on instrumentation in centralized on-site or off-site laboratories.

The ability to move laboratory testing closer to the patient, Point of Care Testing (POCT), has been available since the early 1990s with glucose testing. Continuing advances in technology have produced smaller, more sophisticated devices that are capable of performing an array of tests that have been traditionally performed in a centralized clinical laboratory facility. Today, demands for improved clinical, operational, and economic outcomes have contributed to expanded use of POC tests.

Processes to ensure quality management of testing outside of the laboratory are increasingly critical to accurate and timely test results. The individual responsible for POCT at an institution interacts with clinicians, nurses, laboratorians and other healthcare providers to ensure that existing clinical laboratory regulations and quality standards are applied systematically throughout the organization’s POCT program. Detailed knowledge of instrumentation, regulations, policies and procedures, education and training, quality management and communication are needed to develop and maintain a quality POCT program. To ensure a high level of skill in these areas the American Association of Clinical Chemistry (AACC) Critical and Point of Care Testing Division, one of the largest AACC divisions, developed a comprehensive online distance-learning program for healthcare professionals with responsibilities related to POCT.

Lori Post, CLT, Laboratory Alliance Point of Care Coordinator at St. Joseph’s Hospital Health Center, successfully completed the AACC Point of Care Specialist Certificate Program in March.

Lori has experienced the growth of POCT at SJHHC from 20 glucometers in 1993 to a program performing tests on 145 POC instruments in 59 locations including six dialysis centers, six off-site clinics, two surgery centers, and SJH sponsored health fairs. A mix of 2,556 licensed and non-licensed healthcare professionals perform POCT throughout the SJHHC network. The POCT Specialist Certification is a fitting acknowledgement of Lori’s longstanding dedication to quality patient care via POCT. Her many years of experience, augmented with new skills acquired through the AACC certificate program, position her to support, monitor, and develop the SJHHC POCT program through future growth and increased regulatory oversight. Congratulations Lori!
CALANDAR OF EVENTS

Friday, June 1
St. Joseph’s Hospital Health Center Foundation’s Gala at Turning Stone. Laboratory Alliance is a sponsor

Friday, June 15
Upstate University Hospital at Community General Foundation Pro-Am Golf Tournament at Shenendoah Golf Club at Turning Stone. Laboratory Alliance is a participant and a sponsor

Tuesday, June 19
JP Morgan Corporate Challenge at Onondaga Lake Park. Employees should register by Wednesday, May 23

Wednesday, June 20
Oneida Healthcare Foundation Golf Classic at Kanon Valley Country Club. Laboratory Alliance is a participant and a sponsor

Monday, July 16
Crouse Health Foundation Classic Golf Tournament at Bellevue Country Club. Laboratory Alliance is a sponsor

New York State to Model Expanded Laboratory Education Programs

The American Society for Clinical Pathology (ASCP) has joined the Clinton Global Initiative (CGI) as a member and has made a Commitment to Action to create more job opportunities in the medical laboratory field by expanding educational access to laboratory science programs.

Laboratory Alliance’s Medical Director and CEO Michael R. O’Leary, M.D. attended ASCPs annual meeting in Las Vegas at which former President Clinton was a speaker. Clinton spoke about the CGI with respect to expanding educational access to lab science programs.

A recent article on the ASCP website discusses plans to grow these programs in New York state. The longterm goal of the project is to create a model for New York that can be implemented in states across the country.

ASCP’s five-year commitment includes working with a coalition of clinical laboratory organizations, government agencies and industry partners to increase the number of graduating laboratory professionals in New York by 10 percent, the article states. ASCP currently partners with the University at Buffalo, Stony Brook University, and Upstate Medical University in Syracuse, all part of the State University of New York.

The plan will develop classrooms and distance learning curricula, create a coordinated network of clinical rotation sites, create an accelerated technician to technologist program, and develop an electronic instrumentation simulation laboratory, according to the article.

View the full Feb. 23 ASCP announcement online at www.ascp.org and search “Clinton Global Initiative.”

The ‘Lab Crew’ Plays the Field

Rachel Elder, M.D., (far right) the director of our Rapid Response Lab at Crouse Hospital and head of Pathology Associates of Syracuse, PC, is also a soccer star in her free time.

Her team, the “Lab Crew,” has been playing for several years. Laboratory Alliance sponsors the team’s T-shirts.

Join the Team! Sign Up for the Corporate Challenge

By Becky Reynolds, Microbiology Department

Once again Laboratory Alliance will be participating in the JPMorgan Chase Corporate Challenge at Onondaga Lake Park.

Hope you will reserve the evening of Tuesday, June 19, to join us in the 3.5 mile course on the Parkway. It doesn’t matter whether you jog, run or walk the distance – just have fun! Food will be provided after the race.

Last year the Corporate Challenge itself reached an all time record high for the number of companies and participants.

Laboratory Alliance also had one of its best turnouts. Let’s keep it up!

To sign up, go to www.jpmorganchasecc.com and click on “Syracuse” under Schedule and Registration. Then click on “Registration” under About Syracuse. Under “Online Registration” click on Register.

Find Laboratory Alliance and ‘Register For This Company.’ Make sure to fill in the bold fields on the form. When it asks for payment method, click on the circle for Pay Later (payment being covered by the Company Captain). Laboratory Alliance is paying the $32 entrance fee for each participant.

The website is very informative, however if you have a question, please call Becky Reynolds in the Microbiology Department at the Operations Center, 410-7067 (days).

Don’t forget to register by Wednesday, May 23. Hope to see you there!

The ‘Lab Crew’ Plays the Field

Rachel Elder, M.D., (far right) the director of our Rapid Response Lab at Crouse Hospital and head of Pathology Associates of Syracuse, PC, is also a soccer star in her free time.

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