

Robert A. Thom's painting, America's First Apothecary General, depicts Andrew Craigie.

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Letter from the SAFP President

2014 Annual Award Winners and Package Takeaways



Congratulations to the 2014 SAFP Annual Award Winners!!

Lt Col Forsythe

Civilian Technician of The Year: Ms. Samantha Garcia from Lackland AFB Senior Non-Commissioned Officer of The Year: MSgt Lisa Hill from Kirtland AFB Fred Coleman Company Grade Officer of The Year: Capt Rohin Kasudia from MacDill AFB Maxine Beatty Field Grade Officer of The Year: Maj Vanthy Pham from Nellis AFB Ed Zastawny Clinical Pharmacist of The Year:

Maj Emily Fletcher from Travis AFB

Award Package Takeaways

the crowd?

The primary thing that should stand out on your SAFP award package is impact, especially in the field of pharmacy. Submitting a package that just reflects your day to day job duties is not enough. Especially for the officers, the focus needs to be on leadership and the impact you have as a leader. You need to have bullets that demonstrate specifically what you did as a leader. As leaders you share the accomplishments of your team and your bullets need to show how your capturing our accomplishments. Ultimately, be sure to keep leadership helped the team to achieve success. Ask yourself impact, facts, leadership, and involvement outside your prithe "so what" question for each bullet.

Make sure your bullets are realistic and not overexaggerated. It's acceptable to round up numbers a bit but don't stretch things too much. If it looks like you are speeding on one bullet, it brings into question the rest of your package. You should always use hard facts/data to build your bullet. If you have to estimate a number in your bullet, make sure it is a logical extrapolation from hard facts. In addition, if a similar bullet is used by multiple members at the same

base, it is difficult to determine how much each member impacted the effort being discussed.

Strong award packages show leadership and involvement in areas other than your primary job. Look for ways to get involved (especially in a leadership role) in projects, events, organizations, etc. that have an impact on the Squadron, Group, Wing, Air Force, etc. Did something you led or accomplished get applied across your Squadron or Group, to other Air Force Pharmacies, or the AFMS as a whole? If so, make sure you show that in your bullet. If not, think about those possibilities when looking for things to lead and improve. Seek out leadership roles in organizations (especially military and professional) and make sure you demonstrate your level of impact in your award package. Anytime you have continuous involvement in projects, events, working groups, etc., the amount and level of impact will be greater.

Some of these takeaways can be helpful for performance reports as well. Pharmacy officers have traditionally competed well for promotion however; the active duty pharmacist promotion rate from O4 to O5, in the primary zone, has been below the Biomedical Sciences Corps (BSC) average rate the past two years. In 2013, the pharmacist rate was 22.2% (2 of 9 were selected) while the BSC rate was 58.1%. In 2014, the What can you do to make your award package stand out from pharmacist rate was 37.5% (3 of 8 were selected) while the BSC rate was 51.7%. Although, this data is not enough to identify a trend, it is important to note that pharmacists are competing against BSCs in other forums. For example, records are reviewed and scored at the BSC Development Team (DT) meetings for developmental education (IDE/SDE) and squadron command opportunities.

> We have outstanding pharmacy members out there consistently doing amazing things and we need to ensure we are mary job in mind when preparing your award packages for local quarterly/annual awards and other (ex. SAFP, AFMS, AF, etc.) awards.

> > Proud to be Your President, Stephanie Forsythe

Letter from the Associate Corps Chief for Pharmacy



Col Sprenger

Pharmacy Colleagues,

One of the things I enjoy most about my job as the Associate Corps Chief is getting to visit with Air Force Pharmacy professionals about their career goals. Although my 27 years of active duty experi-

thought at the very least.

In the year post AF Force Management, we've seen active duty AF pharmacy officer numbers decline from 118% macy had the potential to be the best job you'd ever have. I over authorizations to an anticipated 88% by calendar year also realize that military life just doesn't work in all life situaend. I certainly can understand and appreciate career longev- tions. Whether your career length is three years or thirty, as ity concerns from many pharmacy officers and technicians long as you serve with honor and do your very best, your sergiven the significant staffing shifts. Although my crystal ball vice is truly valued and appreciated. Additionally, I hope you interpretation skills aren't always exceptionally accurate and all appreciate your experiences while serving, perhaps even to never guaranteed, all indications now point towards building the level of "the best job you've ever had". back to sustained authorizations.

We expect to recruit seven fully qualified 43Ps and 10 HPSP pharmacists in FY2016. We have four funded and two

unfunded Pharmacy Practice Residency positions for the coming year. We have one PhD in Pharmacoeconomics AFIT position funded as well for 2016. Additionally we have 11 funded pharmacist positions dedicated to PCMH teams beginning the end of this year.

Do you have a future in Air Force Pharmacy? I think the ence don't cover all situations and circum- answer is absolutely yes. It's a fact that transitions have alstances that people face during career deci- ways been a part of any military career. But in addition to the sion milestones, I often recall similar sce- certainty of change, my experience has been one of new opnarios or know of someone who struggled with pretty much portunity in training, learning and leadership. What has althe same issues. Regardless, I usually have some story to tell ways remained constant is the amazing comradery and dedithat I hope gives another perspective and perhaps food for cation of the men and women working in Air Force Pharmacy to include active duty, civilian, contractors and volunteers.

I have always believed that a career in Air Force Phar-

Col Sprenger

AF Sig Group Updates: Technology

The TechSIG is here to assist you with your pharmacy dows XP. Purchase orders have been placed and Randolph is automation needs to include your pharmacy workflow the lead site for the Pyxis upgrades.

(Innovations), your automated medication dispensing machines (Pyxis), your queuing systems (Qmatic and Q-flow), and your will-call systems (GSL). Additionally, the TechSIG can assist with CHCS, AHLTA, Essentris, eRx, and various printing issues.

The TechSIG has recently improved our Kx footprint and will continue to improve the resources on the Kx. Currently, we are working the Pharmacy Automation Refresh to replace all pharmacy workflow systems and upgrade them off of Windows XP. Phase I, 17 MTFs, was awarded to Innovations and installation will begin as soon as July with Hill AFB as the lead site.

Additionally, the TechSIG is working on an enterprise refresh of Pyxis machines, again to upgrade them off Win-

Finally, an enterprise queueing system is in the works; however, the sites that had existing TIGERS packages will be receiving standalone queuing systems. We will be working to transform our queuing into an enterprise solution but it may take some time to transition.

If you have any questions, comments, or concerns regarding your technology and the TechSIG please do not hesitate to ask. The TechSIG leadership contact information can be found on the Kx.

> Thanks Major Justin Lusk

AF Sig Group Updates: Education & Training

interest group (SIG) is to assist in the initial skills and contin- being able to offer continuing education credits to both pharuing education training for Air Force pharmacists and techni- macists and technicians. We have recently attained accreditacians. Located here at the Medical Education and Training tion through the American Council for Pharmacy Education Campus (METC) we are closely involved with the initial (ACPE) as a provider of continuing pharmacy education. skills training of all of our technicians before they continue While still in its initial stages, we are hoping to eventually be on to phase II training locations at Lackland, Keesler, and able to sponsor and co-sponsor education programs for phar-Travis Air Force bases. We have recently increased the num- macy personnel throughout the Department of Defense. To ber of hours that our technicians spend at their phase II train- date, we have sponsored one education event in the San Antoing sites from 120 hours to 160 hours. This allows us to not nio area, and we are continually working with METC to alonly meet accreditation standards, but also better prepares our low us to expand our efforts elsewhere. technicians prior to arrival at their permanent duty stations.

The overall role of the education and training subject. One of the ways that we hope will help our career field is by

If you have questions or comments regarding the SIG, Another issue that we are making an effort to improve is please contact Major C.J. Anderson or MSgt Robert George. our assistance to the career field once they leave this campus.

AF Sig Group Updates: Readiness

and SSgt Stephen Iles. We are responsible for ensuring the Current working topics include intravenous operations/ 43Ps and 4Ps have the proper tools for readiness operations in techniques and Emergency/Trauma Response. the AOR and in garrison. Our main focus is preparation and education prior to your deployment, so when the time comes and you have the honor to deploy, you're ready for the fight.

While the high intensity deployments have decreased significantly, it is our mission to ensure we maintain/preserve the experience and knowledge gained during 10+ years of war. We are currently working on virtual interactive training

Your Readiness SIG leaders are Maj Anthony Dargush tools to help augment readiness skills training in garrison.

Additionally, we serve as a "go-to" resource for any questions you have regarding readiness operations, to include but not limited to RSVs, deployment logistics, POD Operations, and CBRNE questions.

Please contact us with any questions or if you are interested in participating with the Readiness SIG.

AF Sig Group Updates: Pharmacy Practice

macy.

Projects recently completed include the 2015 Pharmacy Practice Manual and the Standardized Pharmacy and Theraassistance to the career field, especially new flight commanders and flight chiefs. Another project recently updated is the tices" to share across the enterprise. Air Force Pharmacy Inspection Guide. A team of experts put together an incredible tool intended for use by pharmacy leaders to evaluate their compliance with regulations and en-

The Pharmacy Practice SIG has had a very busy and pro- sure they are prepared for inspections. Some older tools the ductive year. Please visit the Pharmacy Practice SIG portal on PPSIG has completed that I encourage you to look at are the the AFMS Knowledge Exchange for the most up-to-date doc- Pharmacy Transfer from MTF report, and the Pharmacy Nonuments to help standardize operations across Air Force Phar- Compliance Automated Program. Both of these tools significantly decrease time spent performing pharmacy transfers and returning items to stock within CHCS.

Subscribe to the Pharmacy Knowledge Exchange page peutics Minutes template. These documents provide valuable to ensure you stay up to date with the products produced by the PPSIG. Also, the PPSIG is always looking for "best prac-

> If you have an innovative practice or idea and would like to share, or get assistance in developing an idea please contact, Maj David Jarnot and MSgt Rosland Upshaw.

The New Electronic Health Record

By: Major David Jarnot



Maj Jarnot

Systems Modernization or DHMSM (pronounced dim-sum). This acquisition is a multi-billion dollar project, one of the largest in the DoD and congress has provide the mandate that the initial deployment of this new EHR begin by December 2016. With the compressed timeline the actions required to research, contract, develop, and test the new EHR are moving with lightning speed. Under the current timeline the EHR contract award is scheduled for Q3 of Fiscal Year 2015 with initial testing beginning in Q1 of Fiscal Year 2016. Eight sites have been chosen for deployment of the new EHR to demonstrate Initial Operational Capability. All the facilities are located in the Pacific Northwest with Fairchild Air Force Base leading the deployment for the Air Force.

Reliability Organization, or HRO. The SECDEF has directed portant endeavor.

After years of planning and failed that the MHS use the principles of HROs to move forward in attempts to update the aging AHLTA/ quality of care and patient safety. A leading HRO framework CHCS electronic health record systems, states: "Leadership commits to achieve zero harm, instills a the reality of a new Electronic Health Rec- culture of safety, and marries it to a robust performance imord (EHR) is now gaining steam. In May provement system. The result is an organization that celeof 2013 the DoD announced it would by an brates transparency and contributions from every individual off-the-shelf EHR to replace AHLTA/ regardless of their positions." A critical part of the MHS vi-CHCS. The office stood up to manage this sion to evolve into a HRO across the service and the DHA is endeavor is called the Defense Healthcare a successful deployment of this new EHR.

In order to establish a guide for transactions handled by the new EHR, several Tri-service Workflow Advisory Groups (TSWAGS) were formed to build enterprise wide business processes and decisions that will be used to guide the DHMSM implementation. Maj Justin Lusk from the Air Force was selected to lead the Pharmacy TSWAG. TSWAG groups met in March, April, and May to develop thousands of individual decision points. Air Force pharmacists and technicians were involved in these sessions to ensure input was given to guide the capabilities of the EHR. These decision points will be further developed once the EHR vendor is selected in June or July 2015. As the project moves forward I encourage everyone within the pharmacy career field to stay A buzzword around the rollout of the new EHR is High informed and educated to drive the success of this most im-

Who's On Your Team

By: MSgt Robert R. George

gether your team, be it The Dream Team, or The Bad News time has increased as a result of their gift to carry on conver-"players" tick, what their strengths are, and where they are the vault. You'll find they are almost always using a systemsonality, they will prefer immediate results and give direct have a time sensitive task, make sure they understand the defis a good person to have as the Patient Advocate, the techni- can further develop to align the right person to the right job. beginning of the duty day. They'll help calm the crowds, lis- tests and implement it during a training day. ten to concerns, and are natural counselors. Just don't leave

Knowing your people is an integral part of putting to- them at the window for too long; you may find that your wait Bears. You, as the "coach", need to find out what makes your sations. Your conscientious person is perfect for logistics or weak. You can tell a lot about somebody by their personality atic approach and constantly checking for accuracy. They profile type. If you have somebody that has a *dominating* per- may be a little too thorough with certain projects, so if you answers. This person will admittedly not enjoy patient inter- inition of a deadline. Also, don't worry if you don't have a action as much as being behind the scenes cranking out the clear distinction of all four types of personalities on your work. Somebody with an *influential* or *steadfast* personality team. Everybody possesses a little bit of each trait which you cian at the front window, or the person who opens up at the Furthermore, you may want to research personality profile

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Cont... This will help your team better understand each other, build relationships, and get your shop performing at higher levels.

The pharmacy's perceived competency levels, leadership skills, and overall credibility is on the line from the moment our patients walk through the front door, until the time they fill up their weekly medication trays. Most likely, your pharmacy team won't be the generic equivalent to the 1992 Olympic Dream Team with 14 NBA Basketball Hall of Famers. We don't get to pick our rosters, we don't have a pharmacy technician draft, and we don't have a say in who goes to what base. All we do is look around and put bodies where they

need to go. There's a very good possibility that our patients can tell when we don't have the right person starting in the right position. I know we can't help every situation, but we do have the ability to make every situation better. The question is, did you select the right player for that particular position? Or better yet, do you even know your people good enough to place them where their strengths are highlighted? Your traditional feedback sessions may not give you the winning play, but getting out from behind your desk and understanding the personality of your players will paint a much better picture. If your dream team is more like a nightmare, it's time to reevaluate your game plan in order to take home the gold.

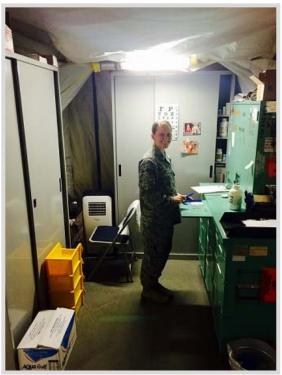
Thoughts From A Deployed Pharmacist

By: Capt Kellie Zentz

tions, counseling patients, and maintaining a collaborative most circumstances these deployed environments are found to practice with providers. Over the past decade, pharmacists be positioned at sustained locations; however pharmacy perhave been steadily making advances to increase their pres- sonnel are consistently being trained for the instance of an

ence in the medical field. Studies have shown a correlation between insufficient pharmacist manning and substantial direct and indirect costs to an organization and to its customers. These potential costs include failure to meet legal and regulatory requirements, increased medical errors, and reduced patient safety. Research has shown that pharmacists reduce medication errors and their associated costs. Specifically, the landmark Institute of Medicine report, "To Err is Human: Building a Safer Health System," cited the importance of pharmacists in reducing medication errors and recommended increased involvement of pharmacists in the pharmacy and patient care units.

A pharmacist's role is recognized as dispensing medica- technician must be prepared for the deployment setting. In



Expeditionary Medical Support (EMEDS) clinic, which is a rapidly deployable medical facility.

Air Force pharmacists and technicians complete regular training on how to operate in an EMEDS environment. The mission of an EMEDS package is to have the capability to quickly deploy and provide forward stabilization medical care to war fighters and civilians when authorized. There are three EMEDS packages, the EMEDS basic package, EMEDS +10, and EMEDS +25. The EMEDS Basic package provides acute intervention and primary care services to support a population at risk of 1500–3000 deployed personnel. The EMEDS Basic also provides the capabilities for medical command and control, preventive medicine, and trau-

at any given time 7 out of 459 pharmacists and 12 out of 1219 ability to increase services to the other two packages by addpharmacy technicians employed by the United States Air ing limited general and orthopedic surgery, critical care, pri-Force were working in a deployed environment. While this mary care, aeromedical evacuation coordination, urgent care, seems to be a small percentage of the number of pharmacists and dental capabilities. and pharmacy technicians employed, each pharmacist and

In 2014, the Society of Air Force Pharmacy reported that ma resuscitation and stabilization. The Basic package has the

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Cont... As a pharmacist currently deployed with the EMEDS Basic package I am able to speak to the benefits and challeng- management. In my scenario I deployed with only myself as es of being deployed in such a unique state. The obvious ben- the pharmacy team. Let's face it; we rely heavily on our pharefit is being given the opportunity to serve our troops on the macy technicians. They are a wealth of knowledge that we front line. Air Force pharmacists are given the opportunity get accustomed to working with daily. They tend to be given daily to care for airmen and their families, and to support a the task of managing our inventories at home stations and mission larger than ourselves. We are provided with the re- then we possibly deploy to a location where we are ordering sources to deliver the best care possible to our warriors and our own medication supply. And to add to this scenario, medtheir support systems. There is no exception when deploying ication orders in the deployed setting are received anywhere with an EMEDS team. The opportunity is the same; it is just from 2-4 weeks of the order being placed. So, drug utilization presented in a different environment.

From my experiences thus far, the challenges of deploy-

ing with an EMEDS team are most important to address. I don't intend to highlight them because I feel they are negative attributes to being deployed. I feel it is important to address them more so because by discussing the challenges we are able to improve upon them, and if unable to im-



prove upon them we are able to allow each other to better mentally prepare.

The main challenge faced in this environment is the lack of technology. Imagine daily tasks of filling prescriptions, consulting with providers, ordering medications, and ultimately dispensing to a patient without the use of a computer. Envision logging narcotic inventories and labeling medications to pass off to patients without the use of a printer. Technology is a commodity that we use so frequently throughout any given day that it is almost unfathomable to entertain the idea of not having it available to complete simple tasks. From my experience technology will find its way into the setting; however it is important to at least initially plan for not having it. In my own instance, preprinting the necessary forms was a lifesaver. Forms such as the AF 582, AF 579, and the blessed AF 781 are necessities to bring with you to a clinic in the process of building from the ground up. Bring a bundle of each and plan to make copies of the forms in the weeks to come upon arriving. Also, acquire some address labels and preprint prescription labels for patient baggies (baggies, not vials in this atmosphere). Prepare for worst case scenario, but realize that technology will find its way to you eventually even in the most basic environment.

The second major challenge I came across was inventory is to be determined, while also ensuring an on-hand supply of at least one month is being maintained. Speeding up the delivery is out of the question. However, begin anticipating

> medications that will most likely go fast. Plan to communicate with providers from the early stages of setting up to determine which medications they prefer to prescribe. And use all resources available. For instance, determine which military bases are nearby and establish relationships to

share supplies if necessary. Be proactive in collaborating with all military branches in this endeavor. We are all a part of the same military, the same team, regardless of branch.

The last recommendation I feel is helpful is not necessarily a challenge, but more so a piece of advice. Be willing to step out of comfort zones, ask questions, and have pride, but lose your sense of ego. Network whenever possible. Deploying in general is such a unique opportunity. Take the chance to learn about other career fields, but to especially gain knowledge on our own career field. Take advantage of opportunities that pharmacists would never be given at home station. Walk into a deployment with an open mind, and take the opportunity to leave a deployment as an improved Air Force Officer and medical provider.

REFERENCES

Institute of Medicine. "To Err is Human: Building a Safer 1. Health System." November 1999. http://www.nap.edu/ catalog.php?record id=9728#toc (accessed 18 May 2015).

Legal Capsules

By: Col (Ret.) David W. Bobb, RPh, Esq

tion profile? Not because you were legitimately filling a pre- control prescriptions filled during July or August 2009, but it scription for the patient, but perhaps you heard a rumor about is irrelevant to the outcome of the case. the patient, a disease he or she may have, or something similar? Let me give you 1.4 million reasons why this would not be a good idea. 1.4 million is the amount in dollars Walgreen Corporation and it's pharmacist were found jointly and severably liable for due to a HIPPA and Privacy Act breach when the pharmacist made an unauthorized inquiry of the plaintiff's medication profile and then shared that information with her spouse. The following comes from the Indiana case of Walgreen Co. v. Abigail E. Hinchy.

plaintiff, Abigail Hinchy had an on-and-off sexual relationship with Davion Peterson. Also during this time, Abigail had all of her prescriptions filled, including birth control pills, at a Walgreen pharmacy. The year 2009 becomes quite interesting for Davion Peterson. At some point in 2009, while still seeing Abigail, Davion also starts a relationship with Audra Withers, the pharmacist at the Walgreen pharmacy where Abigail gets her prescriptions filled. In August 2009, Abigail becomes pregnant with Davion's child, and to put the topper on Davion's banner year, he learns that he has contracted genital herpes. On May 22, 2010, Abigail gives birth to Davion's son and 4 days later, Davion sends a letter to Audra telling her he is the daddy of Abigail Hinchy's baby, and, oh by the way, he may have exposed her to genital herpes.

As you can imagine, Audra becomes frantic wondering if she has contracted genital herpes and looks up Abigail's medication profile in the Walgreen computer system to determine if she has been treated for genital herpes. The next day, she checks again while at work to make sure she had spelled Abigail's name correctly. Here, the accounts of the facts start to differ. Audra states she never shared Abigail's medication profile with anyone. However, on May 29, 2010, Davion sends a text message to Abigail, that essentially states he has a print out showing she did not get her birth control meds filled in July or August 2009, and essentially she "trapped" him into getting her pregnant. In response, Abigail sends Davion a text that says, "Print out. It's illegal for u to obtain any kind of information like that regarding me...". Davion then send another message back stating (among other things, "...it is not illegal for me to have it...I didn't break any laws

Have you ever been tempted to look up a patient's medica- myself'. It was in fact true that Abigail had not had any birth

Move ahead to March 2011. Davion sends his son a gift and Abigail doesn't recognize the return address. She does a little online research and finds out that the return address belongs to Audra Withers, the Walgreen pharmacist. Guess what? At some point in time Davion and Audra have gotten married and they are living in her home. Abigail now figures out that Audra is the pharmacist at the Walgreen pharmacy where she gets her prescriptions filled and makes the connection. Abigail contacts Walgreen's regional office with her For approximately a four-year period, 2006 – 2010, the concerns about release of her personal information, and over the next 3 weeks, Walgreen's conducts an investigation. At its conclusion, Walgreen's confirmed to Abigail that:

- 1. A HIPPA privacy violation had occurred
- 2. Audra Withers had viewed Abigail's prescription information without consent and for personal purposes, and
- 3. Walgreen's could not confirm that Audra had shared Abigail's information with a third party.

As punishment, Audra Withers received a written warning from Walgreen's management and was required to retake the company's HIPPA computer based training.

On August 1, 2011, Abigail Hinchy filed her suit against Audra Withers claiming negligence/professional malpractice, invasion of privacy/public disclosure of private facts, and invasion of privacy/intrusion. She also claimed liability against Walgreen Corporation for Audra's actions under the theory of respondeat superior as well as separate claims for negligent training, negligent supervision, negligent retention, and negligence/professional malpractice. For those unfamiliar with the term respondeat superior, it is a legal theory developed in England during medieval times when only noblemen and the rich owned anything of value and most common people owned nothing. Commoners worked for the nobleman and in return were afforded his protection. Literally translated, respondeat superior means "let the master speak". Therefore if a commoner caused injury or damage to another, the nobleman would be responsible for paying the damages since the commoner had nothing.

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Cont... A key element when deciding if an entity will be re- duct does fall within the scope of employment if it is inciemployer's business. For example, if I am a delivery driver the scope of employment when it is of the "same general nadriver cuts me off, I fly into an episode of road rage, pull out jury decided that Audra's inquiry of Abigail Hinchy's medimy gun, and start shooting other drivers, I am not acting with- cation profile was of the same general nature as that conduct in the scope of my employer's business. Even though I am which Walgreen pharmacy authorized. making deliveries, pulling out a gun and shooting others is not something Widgets International could comprehend as part of my job duties.

cumstances, such as when filling a prescription. Therefore, pay all or part of the \$1.4 million she was liable for. Walgreen Corporation argued, it should not be held liable for any damages derived from Audra's actions under the theory of respondeat superior. Abigail Hinchy's attorney countered however, that looking up patient profiles is within the scope of Audra's employment. In fact, Walgreen's trains it's pharmacists to look up patient medication profiles as a usual part of it's business. In fact, courts have determined that the con-

sponsible for damages due to the respondent superior theory dental to the conduct authorized by the employer or it furthers is that the employee must be acting within the scope of the the employer's business. Conduct is considered to be within for Widgets International, I'm out making deliveries, another ture" as that authorized or "incidental" to such conduct. The

The jury returned a \$1.8 million judgment for the plaintiff, Abigail Hinchy. \$1.4 million against Audra Withers and Walgreen Corporation jointly and severably, meaning each In our present case, from Walgreen's viewpoint, every- one is responsible for the entire amount or they can divide it thing hinged on the jury's determination of Audra Withers as they are able, and \$400,000 against Davion Peterson. Why acting within the scope of her employment as a Walgreen's Davion? There was some evidence that suggested he had told pharmacist. Walgreen's argued that she was not acting within Abigail's parents about her failure to take her birth control the scope of her employment because Walgreen's does not medications and that was why she became pregnant. Not long train, promote, or condone the practice of pharmacists look- after this case ended, Audra Withers declared bankruptcy to ing up patient's medication profiles outside of accepted cir- try and shield any assets she had from her responsibility to

> This case is an excellent example of what can occur legally when a single breach of the HIPPA standards or Privacy Act requirements happen, and serves as a perfect reminder to never access patient information unless authorized to do so, and definitely never share any patient information with an unauthorized third party. Until next time, practice safely!

Call for Future Articles

The Society of Air Force Pharmacy Executive Team is excited to have published its second issue of the SAFP Newsletter. We have received numerous submissions that has made this issue a success.

For our next newsletter issue, we identified the theme of "Improving the Air Force Pharmacy." We will be focusing on learning from the experiences our fellow Air Force Pharmacy Airmen.

As with any organization, we need your help to make the next issue a success! Please submit any article(s) focusing on this topic. If you have any questions, then please reach out to Maj Rohin Kasudia or Capt John Bouchard at JAFP.EditorInChief@Gmail.com.

The Editorial Team looks forward to your submissions!

Maj Rohin Kasudia Editor-In-Chief

Currently Accepting Articles for the 3nd Quarter Newsletter

Submission Deadline: 15 Sept 2015

Email Submissions to: JAFP.EditorInChief@Gmail.com

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Type of Activity

Application

Disclosure of Conflicts of Interest

Postgraduate Institute for Medicine (PIM) requires instructors, planners, managers and other individuals who are in a position to control the content of this activity to disclose any real or apparent conflict of interest (COI) they may have as related to the content of this activity. All identified COI are thoroughly vetted and resolved according to PIM policy. PIM is committed to providing its learners with high quality CME activities and related materials that promote improvements or quality in healthcare and not a specific proprietary business interest of a commercial interest.

The *faculty* reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

Name of Faculty or Presenter	Reported Financial Relationship		
Maj Joshua M. Elston, Pharm D., BCPS	None		

The *planners and managers* reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

Name of SAFP Manager	Reported Financial Relationship			
Maj Rohin Kasudia	None			

The following PIM planners and managers, Trace Hutchison, PharmD, Samantha Mattiucci, PharmD, CCMEP, and Jan Schultz, MSN, RN, CCMEP, hereby state that they or their spouse/life partner do not have any financial relationships or relationships to products or devices with any commercial interest related to the content of this activity of any amount during the past 12 months.

Method of Participation and Request for Credit

There are no fees for participating and receiving CME credit for this activity. During the period August 1, 2015 through August 31, 2016, participants must read the learning objectives and faculty disclosures and study the educational activity.

PIM supports Green CME by offering your Request for Credit online. If you wish to receive acknowledgment for completing this activity, please complete the post-test and evaluation on www.cmeuniversity.com. On the navigation menu, click on "Find Post-test/Evaluation by Course" and search by course ID 11012. Upon successfully completing the post-test with a score of 75% or better and the activity evaluation form, transcript information will be sent to the NABP CPE Monitor Service.

<u>Media</u>

Newsletter

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Learning Objectives

- 1) Describe the differences between the most common types of bariatric surgery.
- 2) Identify pharmacokinetic (PK) parameters affected as a result of bariatric surgery.
- 3) Discuss the role of the stomach and small intestine in drug absorption.
- 4) Deduce/predict the downstream effects of bariatric surgery on drug absorption based on drug specific characteristics.
- 5) Counsel bariatric surgery patients on drug specific information including what drugs to avoid and what dosage form to use.



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Jointly provided by Postgraduate Institute for Medicine and the Society of Air Force Pharmacy This activity has been designed to meet the educational needs of pharmacists involved in the care of patients with bariatric surgery.

Abstract

Bariatric surgery is becoming an increasingly popular solution to the obesity pandemic in the United States. A solid understanding of the different types of bariatric surgeries and their effects on medication absorption is needed to best care for this patient population. Currently, there is limited current data on this topic providing any drug specific information. However, by understanding the processes and variables associated in drug absorption, one can predict how bariatric surgery will affect medication absorption and, ultimately, our patients.

Introduction

As the incidence of Americans that are considered obese (>30)Body Mass Index (BMI)) sky rockets, the medical community is disease and stroke¹. Despite significant data showing the proven players. health benefits of even mild weight loss in mitigating long term health problems associated with obesity, few people are able to achieve ideal weight control without medical intervention- surgical or pharmacological.

Today in the United States, one in four adults are considered obese, while one in 20 adults are considered morbidly obese (BMI > 40).² The medical costs associated with the management of obesity and co-morbidities are even more staggering with estimates of health care costs up to \$100 billion annually.³ For the first time in more than a century, the average life expectancy of an American may decline as a result of the pandemic.⁴

Surgical intervention (bariatric surgery) on morbidly obese patients to induce weight loss has demonstrated significant, beneficial results including decreased mortality as shown in the Swedish Obese Subjects (SOS) study ending in 2007.⁵ This was a prospec-

tive, controlled, observational study including bariatric surgery patients who were followed for an average of 10.9 years against matched, non-surgical, control patients. In this trial, weight loss from bariatric surgery varied by surgery type, but averaged about 25% of total body weight at the 1-2 year mark.⁵ Other proven benefits of bariatric surgery and weight loss include two year cure rates of: 85% for diabetes, 66% for hypertension, and 85% for hyperlipidemia.⁶ Furthermore, Hemoglobin A1c (HbA1c) reductions range from 2% to 2.4%, and a 40% cure rate for sleep apnea.^{7,8}

As successful as bariatric surgery has become in promoting weight loss and reducing prevalence of obesity associated comorbidities, there are still several patient care areas that must be continually addressed even after successful surgery. Depression, which is common in obese patients before and after surgical intervention and nutritional deficiencies that arise as a result of bariatric surgery will need to be continually monitored and pharmacologically managed when necessary.^{18,19} It is reasonable to infer that such high cure rates of diabetes, hypertension and hyperlipidemia would decrease the medication burden of successfully managed bariatric surgery patients. Unfortunately, this is not always the case. In fact, a 2002 study from Nabro K, et al, showed that drug cost before and post bariatric surgery did not differ despite the proven health benefits discussed above. The study found that drug costs associated with treating diabetes and cardiovascular disease decreased significantly; however, medications used to treat gastrointestinal (GI) disorders and vitamin deficiencies increased proportionally.²³ This leaves a therapy niche where pharmacists can have significant impact on patient care.

A January 2011 Notice to Airmen (NOTAM) regarding anticoagulation management further highlights the relevance of this topic to active duty pharmacists.²⁶ The case summary notes, "a patient with a complicated medical history including gastric bypass, multiple laparotomies, two C-sections, venous thrombus, depression, nephrolithiasis, and gastrointestinal (GI) bleeding, succumbed to GI exsanguination caused by clotting factor deficiencies induced by medication and poor nutrition." The discussion section of the reaching for solutions to curtail the downstream effects of obesity- NOTAM emphasizes the need for collaboration of care in these hypertension, diabetes, hyperlipidemia, sleep apnea, coronary heart types of patients of which pharmacists are noted as integral team

> Bariatric surgery to promote weight loss is not new; however, there is limited drug specific data pertaining to drug absorption in this patient population. Most of the primary literature available citing specific drug information was conducted in patients that underwent a jejunoileal bypass- a procedure unfavored due to the high incidence of malnutrition. In a systematic review article by PadwalR et al, a literature search found only 26 articles that highlighted drug specific information from 1966 to October 2008.²² Furthermore, most of the articles found were either case reports or case series with only a few non-randomized controlled studies. Of these 26 articles, only five of the articles meeting inclusion criteria tested drug specific pharmacokinetic parameters in gastric bypass patients.

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Cont... Given the paucity of specific drug information, the purpose nism, another advantage of this procedure (See Figure 1, #1). of this article is to understand the physiologic and pharmacokinetic Sleeve gastrectomy is a more invasive restrictive bariatric procetritional care of these patients.

Types of Bariatric Surgery

Bariatric surgery is intended to reduce caloric intake by altering the gastrointestinal anatomy, thereby promoting weight loss. There are several types of bariatric surgery, but only three of the most common categories, based on the weight-loss promoting mechanism, are focused in this article: restrictive, malabsorptive, or a combination of restrictive and malabsorptive. Weight loss from bariatric surgery is often quantified in two different manners- reduction of TOTAL body weight or reduction of EXCESS body weight. Excess body weight is defined as total body weight minus

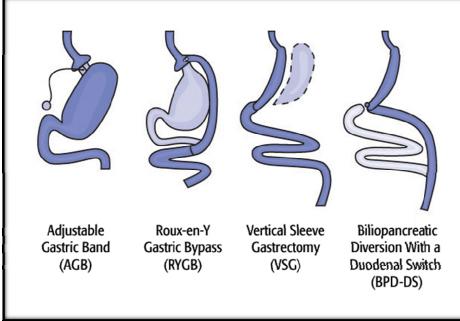
changes that occur as a result of bariatric surgery and apply the dure using surgical staples in lieu of a restrictive band to decrease available information to the pharmacological management and nu- the stomach volume (See Figure 1, #3). Weight loss with sleeve gastrectomy is increased compared to gastric banding with 25% total body weight loss after 1 to 2 years.⁵ The primary appeal of all these restrictive procedures is they are performed laparoscopically and decrease the risk of long term malnutrition since the anatomy remains intact.6

> The most common malabsorptive only bariatric surgery performed is biliopancreatic diversion. This procedure involves restricting the stomach volume to 200-500 mL dividing the small intestine into distal and proximal segments. The distal segment is attached to the new gastric pouch while the proximal segment is attached just proximal of the ileocecal valve. By limiting the length of the small intestine from stomach to large intestine, absorption is

ideal body weight. Advertisements for these surgeries invariably proclaim weight loss percentages in EXCESS body weight since the percentages always higher. are article This cites weight reductions figures in regards to TO-TAL body weight as these numbers are more clinically meaningful.

Restrictive procedures facilitate weight loss by simply decreasing the size of the gastric pouch while leaving the rest of the GI anatomy intact. Gas-

pling, or sleeve gastrectomies common are types of restrictive bari-



tric banding, gastric sta- Figure 1. Different Types of bariatric surgery.

Image Credit: Walter Pories, M.D. FACS, adapted.

atric surgeries. Gastric banding, also known as the "lap band", short for laparoscopic banding, is the most common of the restrictive procedures. Banding procedures are generally the least invasive of all the bariatric interventions which has the distinct advantage of lower post-surgery complications such as infection. Gastric banding creates a small pouch, usually 30 milliliters (mL), in the upper stomach by using a restrictive band leading to delayed gastric emptying and earlier onset of satiety. Both of these effects lead to decreased patient caloric intake.⁴ Gastric banding generally facilitates the least amount of total body weight loss of around 20% after 1 to 2 years when compared with the other types of bariatric surgeries. The tightness of the band can often be manipulated after surgery by non-invasive saline injection into a port or other mecha-

upper gastric pouch is isolated from the bulk of the stomach and stapled creating a 30mL sized pocket. The mid-jejunum is cut and anastomosed (attached) to the new gastric pouch, while the distal part of the stomach and proximal end of the small intestine is attached further down the jejunum (See Figure 1, #2). The procedure results in a smaller, upper stomach pouch, leading to decrease caloric intake- similar to the effects associated with simple gastric banding. In addition, the small intestine anatomical alteration leads to decreased nutrient absorption. The dual mechanism of this surgery on weight loss, restrictive and malabsorptive, explains why gastric bypass has consistently proven to induce the largest amount of weight loss, around 30-35% of total body weight.⁵

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impaired considerably.¹⁰

Short and long-term mal-

nutrition is a clear disad-

vantage of this procedure

in comparison with sole-

ly restrictive procedures

There are no long-term

recorded numbers on

biliopancreatic diversion

weight loss, but it is re-

ported to be more than

greater than 20% of total

body weight in 1-2 years

combination restrictive-

malabsorptive bariatric

procedure in the United

States is so named by the

surgical technique em-

ployed, Roux-en-Y, com-

monly referred to as "gastric bypass".⁹ A small,

The most common

(See Figure 1, #4).

banding.

described.

or.

previously

gastric

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Pharmacokinetic (PK) Variables and Changes

Understanding the common types of bariatric procedures is necessary to formulate hypotheses on the predicted affects each procedure will have on various PK parameters. This section reviews the basics of gastrointestinal function, how bariatric surgery can affect normal processes, and how various PK parameters are altered.

It is important to mention that the processes and variables associated with drug absorption, distribution, metabolism, and elimination are complex and innumerable. Figure 2 below is a simplified

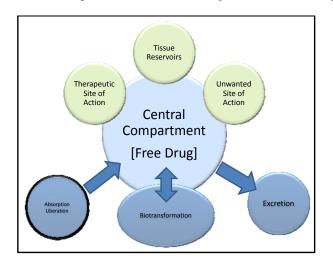


Figure 2. Overview of Drug Metabolism Process Image Credit: Goodman and Gilman's, adapted.¹²

version of the larger picture being discussed in this article. It is important to remember that the primary focal point of this article is limited only to the absorption part (marked with star in below graphic) of this complex equation and the downstream effects associated with altering it.

Role of the stomach and small intestine in drug absorption and metabolism

The stomach plays a minor role in the grand scheme of oral formulation drug absorption and metabolism, alternatively the small intestine is the primary site for oral drug absorption.¹⁶ The primary mechanism of drug absorption in either the stomach or small intesof energy. There are several variables that affect the rate (speed of absorption to site of action) and extent (amount of drug reaching the site of action) of passive diffusion drug absorption. Table 1 below Part of the reason that most drug absorption occurs in the small illustrates the vast array of variables involved in the drug absorption intestine is that most oral drugs on the market today are weak bases. process. Notable variables from Table 1 that will be discussed in In an acidic environment a weak acid drug remains neutral (bottom detail include: formulation and characteristics of drug product; pH of figure). However, that same acidic drug in a more basic environof the drug/pH of the lumen (lipid partition coefficient); gastric ment, like plasma, will remain in its ionic state unable to be abemptying time; and surface area of GI tract and motility.¹² Each of sorbed (shown at top of figure).¹² these variables will be discussed to help understand how bariatric surgery will alter these variables, and, therefore, alter oral drug ab-

sorption.

Formulation and characteristics of drug product**
Tablet disintegration time**
Drug concentration**
Dissolution time**
Stability in gastrointestinal tract**
pH of the drug**
Patient characteristics
pH of lumen**
Gastric emptying time**
Intestinal transit time**
Surface area of gastrointestinal tract and motility**
Gastrointestinal disease, Mesenteric blood flow
Presence of other substances in the gastrointestinal tract
Interaction with other drugs, ions
Exogenous substances (food)
Pharmacokinetic characteristics of the drug
Drug metabolism by gut bacteria and gut wall
Enterohepatic recycling
Effect of the lactobacilli
Acidification due to fermentative lactic acid production
Increased intestinal passage due to production of gaseous CO2
Effect of ethanol on intestinal epithelia
Deconjugation of primary cholic acid with decreased uptake of
Lipophilic compounds

Table 1. Variables Affecting Drug Absorption

** = Discussed Specifically in this Article

Image Credit: Severijnen, et al., adapted.¹³

The lipid partition coefficient is a drug characteristic describing the charged-state to neutral-state ratio of a drug in a solution at a certain pH. The value of this parameter determines the ability of the drug to passively diffuse across the membrane. In order for drug to diffuse across the GI tract membrane the molecule must be both non-polar and un-ionized.¹⁷ The neutral (non-ionic) drug is able to be absorbed across the lipid bilayer, whereas the charged (ionic) state of the drug remains in solution, unable to be absorbed. As noted above, the stomach's function in drug absorption and metabolism is minimal in the overall process of oral drug absorption. According to the lipid partition coefficient, drugs that are characterized as weak acids (e.g. aspirin, NSAIDs, penicillins) are better absorbed in an acidic environment like the stomach where the pH ranges from 1.5-2.15 As shown in Figure 3, a weak acid will be tine is simple passive diffusion. Passive diffusion is characterized neutral in the normally acidic environment of the stomach, and by drug absorption along a concentration gradient without the input therefore, will more readily transverse the membrane passively. On the other hand, in the more basic environment of the small intestine, pH range 4.9-7.4, basic drugs will be more completely absorbed.

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is imperative to understanding the consequences on bariatric sur-

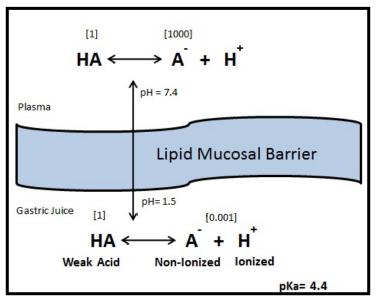


Figure 3. Effects of pH on drugs crossing the lipid bi-layer Image Credit: Goodman and Gilman's, adapted.¹²

Cont... Understanding the effect of solution pH on drug absorption bonate in Roux-en-Y gastric bypass patients. Calcium citrate resulted in statistically significant increase in serum calcium levels compared to calcium carbonate.²¹ Due to the higher gastric pH of bariatric surgery patients, it is recommended that patients use calcium citrate for supplementation instead of the more common calcium carbonate. Calcium carbonate requires a more acidic environment to promote complete absorption. A prospective trial also examined the effect of decreased acid production on vitamin B12 absorption. Results showed in patients that have undergone Roux-en-Y gastric bypass, there was a pronounced decrease of B12 absorption as the lack of acidity inhibited food bound cobalamin from being absorbed.24

> Membrane surface area is another variable that affects the absorption of drugs. In each of the three types of bariatric described, stomach surface area is dramatically decreased. However, stomach surface area is negligible in comparison to that of the small intestine, estimated to have a surface area of 200 m².¹² Only those bariatric procedures that decrease small intestine surface area will alter this parameter. Gastric banding, which only restricts the stomach size, leaving the small intestine intact will not change this parameter to a notable extent. However, in gastric bypass and bileopancreatic diversion, the small intestine surface area is truncated, leading to limited drug absorption. This information is illustrated in Figure 4.

All of the types of bariatric surgeries highlighted in this article

gery patients and oral medications. One common consequence of cause a delay in gastric emptying time. One of the beneficial asgastric bypass is hypochlorhydria, decreased acid production 16. pects of delayed gastric emptying time is early satiety. The patient

The acid producing parietal cells are located in the fundus portion of the stomach. As this acid producing part of the stomach becomes separated from the newly created pouch in bariatric surgery, increased stomach pH results.²² This effect pertains to all of the bariatric surgeries as shown in Figure 4. Based on this information, it is reasonable to conclude that weak acid drugs will have decreased stomach absorption in gastric bypass patients, ultimately decreasing the bioavailability of that drug. Another application of this concept is exhibited in calcium and vitamin domized, double blinded, cross-over trial compared citrate to calcium car-

1	Factors Influencing Absorption				
a0	A. Drug disintegration and dissolution	GB	SG	RYGB	BPD
VV V	Gastric Mixing	+	+	+	+
)	Gastric pH	٠	٠	+	+
	Gastric emptying	٠	٠	+	+
Bile salt solubilization and enteroperatic recirculation					+
10	B. Mucosal Exposure			+	+
Length of bypassed segment and transit time			٠	٠	
CIAT	Intestinal adaptation			•	+
C. Absorption across intestine					
2415	Efflux (P-gp)			+	+
	_				
Y					

B12 absorption. A ran- Figure 4. Effects of different bariatric surgeries on drug absorption Image Credit: Padwal, R. et al., adapted.²² the absorption of calcium Notes: GB= Gastric banding, SG= Sleeve Gastrectomy,

RYGB= Roux-en-Y gastric bypass, BPD= Biliopancreatic diversion

feels fuller faster and for a longer period thereby decreasing caloric intake. This aspect is a clear benefit of the surgery, promoting weight loss. However, the consequences on drug absorption must also be considered. As the upper small intestine plays the major role of drug absorption, altering this parameter alters the rate (onset of action) of drug absorption, but has not been shown to change the extent (the amount of drug) absorbed.22

The final, and perhaps most notable, variable for pharmacists to consider in this discussion is the drug dosage form.

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Cont... As shown in Table 1 there are several dosage form varia- achieve therapeutic plasma concentrations.²⁴ Even in cases where bles that affect PK parameters. First, is the disintegration and dis- there are well established therapeutic levels, managing these pasolution time of the drug. Extended, delayed, sustained release and tients can prove challenging and can result in harm when not coneven enteric coated medications are formulated to dissolve at a con-sidered. In a 2008 case a 71 year old female, currently taking war-

stant rate and get absorbed along the entire length of the small intes- farin for atrial fibrillation, underwent a completion gastrectomy and

tine.¹² In gastric bypass and bileopancreatic diversion the decreased length of the small intestine will inhibit complete absorption of these dosage forms decreasing the re-Therefore. sponse. recommend use of regular release tablets and suspensions as the primary oral dosage form over extended release products to your patients and when advising physicians. When possible, using alternative drug ad-

1. Avoid NSAID and bisphosphonates use when possible to avoid increased risk of gastric ulcers. Use acetaminophen for pain. 2. Use calcium citrate instead of calcium carbonate to replete calcium stores

- 3. Avoid extended/sustained/delayed release or enteric coated forms due to decreased absorption. Use regular release when possible. Counsel patients on compliance as changing to regular release forms of medications will surely increase dosing frequency.
- 4. Follow nutritional recommendations (small, frequent, low sugar meals), take a daily multivitamin complete with B vitamins, iron, and folate.
- 5. For females, consider depot, patch, Nuva-Ring, or non-hormonal forms of contraception as oral contraception can potentially have altered absorption 6. Monitor for signs and symptoms of decreased efficacy of current medications due to
- decreased absorption. 7. Monitor for decreased need of certain medications as weight loss continues over 1-2 years following surgery. The patient may no longer need the same medication

Roux-en-Y surgery for treatment of an adenocarcinoma. Her daily therapeutic warfarin dose prior to surgery historically ranged from 5-6mg. The patient was discharged from the hospital on an enoxaparin bridge and restarted on her standard dose of warfarin. Three months later she was admitted to the hospital with shortness of breath and diagnosed with a pulmonary embolus. Her INR on admission was sub-

ministration path- Table 2. Key counseling tips to give your bariatric surgery patients ways such as nasal,

regimen as they did prior to surgery.

injection, rectal, vaginal, and transdermal forms, are good options therapeutic at 1.3 despite a good compliance report from the patient. to recommend to bariatric surgery patients. A case report of high- During her admission she required daily warfarin doses up to 20mg lighting the importance of using alternate routes in these patients in order to achieve a therapeutic INR.²⁷ involved a 29 year old pregnant female with a history of gastric bypass. The patient was found to have a urinary tract infection at a routine prenatal care appointment. She subsequently received five rounds of oral antibiotics with known susceptibility against the organism without eradicating the infection. Finally, the infection was volved with bariatric surgery patients. As there is limited drug spesuccessfully treated with serial, once weekly, intramuscular ceftriaxone injections circumventing the need for oral medication absorption.25

Monitoring the therapeutic effects of drugs in bariatric surgery patients is central to their care. This needs to be over and above the usual monitoring parameters associated with most medications. For many medications used after bariatric surgery there will be no change in the monitoring parameters already recommended. For example, when using an ACE inhibitor for hypertension, monitor-2. ing blood pressure and kidney function will be just as pertinent before as after surgery in these patients. However, medications that do not have defined monitoring parameters such as oral antibiotics, oral contraceptives, and chemotherapy agents will require more diligent monitoring of patient response. A 2010 case series on tamoxifen malabsorption in three women with Roux-en-Y gastric 4. bypass were treated for breast cancer showed they were unable to achieve therapeutic plasma concentrations of tamoxifen on standard doses. Once the patients' weekly doses were increased dramatically, up to two times the standard daily dose, they were able to

Conclusion

A solid understanding of the theoretical effects that bariatric surgery can have on medications is paramount for pharmacists incific reference data to help pharmacists and physicians in their decision making, understanding the types of bariatric surgeries, GI physiology, and pharmacokinetic changes after bariatric surgery is the best methodology for caring for this patient population.

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