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IMMUNE GLOBULIN COMMUNITY

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February-March 2009

Education

Advocacy

3 Years!

Communication

IG MANUFACTURING:

Up Close and Personal

PATIENT SAFETY UPDATE:

What's Happening With the PDMA?

U.S. \$3.00

Our mission is to support the IG community through education, communication and advocacy

A community service from FFF Enterprises, Inc.

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About *IG Living*

IG Living is the only magazine dedicated to bringing comprehensive healthcare information, immune globulin information, community and reimbursement news, and resources for successful living directly to immune globulin consumers and their healthcare providers.

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Join an IGL Readers Group or Teleforum

We hear from many, many patient and family member readers who would like to connect with others to share their experiences living with chronic diseases, or maybe just to share a cup of coffee with folks who understand. *IG Living* can help you connect with others in two ways.

First, we can help you determine if there's a patient organization support group in your area or help you start an IGL Readers Group. To join a group or start one in your area, visit www.IGLiving.com and click on IGL Readers Groups.

Second, we can add you to our email invitation list for our IGL Readers Group teleforums. Every month, *IG Living* will send email invitations to readers who let us know they are interested in participating in hosted toll-free teleforums to discuss topics relevant to the IG community. Each moderated, hour-long call—there will be two each month—will be filled on a first-come, first-served basis and will be limited to 15 readers.

To let us know that you want to receive the teleforum email invitations, please email kmcfalls@IGLiving.com or call (888) 433-3888 x1349.



Happy Birthday, *IG Living!*

Sometimes readers do my work for me. And that's exactly what happened as I was thinking about my editorial for this issue—our third anniversary edition. Specifically, I wanted something to symbolize the community created through *IG Living*. Mark, a reader from Florida whose letter appears on Page 5, hit it perfectly when he wrote: "One important element I am finding that *IG Living* provides to its readers is the 'close-knit community' (kind of like a patchwork quilt) relationship it establishes between each of us." I couldn't agree more.

While doing research on quilts, I came across the following. First, quilting can be traced back to ancient Egypt and China, where three layers of fabrics (top, batting and backing) were stitched together. Second, in the 11th century, quilting was used to hold together the layers of padding under armor.

When it comes to *IG Living*, I like both of these facts. Regarding the first, I think it fits our mission statement perfectly, as I see the layers of a quilt as symbolizing education, communication and advocacy. All are crucial to not only creating community, but also to empowering readers. And in that regard, I especially like fact number two, which refers to armor. While I know none of you is a medieval warrior, I do know that many of you display an uncommon fortitude, especially in terms of spirit. Dealing with chronic conditions is not easy, and as I've said before, the strength in this community is astounding.

So, with that in mind, I'd like to thank not just Mark, but all of you. Every one of you plays a part in making this magazine—and this community—as special as it is.

Revisiting Patient Safety

I think it's fitting that this issue features an update on patient safety and the Prescription Drug Marketing Act (PDMA). The very first issue of *IG Living* highlighted this important subject, which has also been revisited in the magazine several times since. As I was researching the article, I came across two other relevant points regarding patient safety that fall outside of the purview of the story but which I'd still like to share. The first concerns online pharmacies, while the second involves drugs (though unrelated to immune globulin) that are still available to consumers despite their never being approved by the Food and Drug Administration (FDA).

First, buying drugs through online pharmacies can be quite a dangerous venture. According to Roger Bate,

author of "Making a Killing: The Deadly Implications of the Counterfeit Drug Trade," medicine obtained through this source, which is often counterfeit, usually comes from unregulated or unproven distributors. In 2007, online fraud expert MarkMonitor did a report that found that only four of the 3,160 online pharmacies it studied had attained the Verified Internet Pharmacy Practice Sites seal, the industry's quality control standard.¹ As you may have already suspected, getting medication online is never a good idea.

The second point, though not related directly to immune globulin, is still something consumers should be aware of. According to an Associated Press (AP) analysis, some Medicaid recipients as well as private patients are taking medications that have not been reviewed by the FDA.²

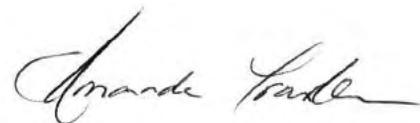
According to the analysis, the medications—many of which are for conditions such as colds and pain—date back to before 1962, which is when the FDA clamped down on reviewing drugs. Though thousands of drugs on the market were supposed to be evaluated at that time, some manufacturers claimed that their medications were grandfathered under earlier laws. Though the FDA is trying to eliminate these drugs from the market, some continue to slip through the cracks.

According to estimates, these drugs account for about 72 million prescriptions a year and include: Carbofed, for colds and flu; Hylira, a dry skin ointment; and Andehist, a decongestant. To learn more, visit <http://tinyurl.com/4tv2sb>.³

Conference News

Registration has begun for the Immune Deficiency Foundation's 2009 conference, which will be from June 18–20 at Disney's Contemporary Resort in Lake Buena Vista, Fla. To register, visit www.primaryimmune.org.

As usual, I hope you enjoy this issue. Please send any feedback you have to editor@IGLiving.com. ■



Amanda M. Traxler, Editor

¹ Bate, R. "Abuse of Medical System by Lawyers Hurts Patients," www.ajc.com/services/content/printedition/2008/12/08/bateed.html, Dec. 8, 2008.

² Alonso-Zaldivar, R. and Bass, F. "Government Pays for Risky Unapproved Drugs," Nov. 24, 2008, www.sfgate.com/cgi-bin/article.cgi?f=/n/a/2008/11/23/national/w053222592.DTL.

³ Ibid.

Readers Write

Your feedback, opinions, suggestions and anything else you'd like to share are important! Email us at editor@IGLiving.com or visit www.IGLiving.com and go to the Contact Us page to send your comments.

Dear Editor,

I was grateful to read a positive article on using complementary therapies in the Aug.-Sept. issue of *IG Living*. As a practicing hypnotherapist and someone with CVID, I was especially relieved to read how balanced the article was.

Personally, I use self-hypnosis to control both the symptoms of my illness and the side effects of IVIG therapy. Professionally, my practice specializes in assisting people with chronic illnesses. My clients are referred by their physicians since they have not responded well enough to conventional medicine to actually feel better. We work as a team to improve the patient's life and health. If it helps the patient feel better and be more functional, then it should be considered as beneficial for that patient. Patients should be honest with their physicians about their use of CAM [complementary and alternative medicine] but should also be firm if the physician does not have a positive attitude.

Thank you for such a wonderful article. I hope to see more articles on the ways complementary therapies are benefiting people with immune system dysfunctions.

—Melissa, Alabama

I just recently saw your publication. My home healthcare nurse brought me one this weekend and it was full of important and helpful information many of us need, but rarely get or don't have a source to acquire. It's spectacular. Thank you.

—Nancy, California

I have written several email messages in the past to other organizations (mostly commercial companies) and had lost faith in ever seeing a response from a single one of them. I had started to believe that all those emails people send simply fell into file "G" somewhere.

But Kris McFalls has caused me to regain faith in organ-

izational email communications. I think I actually sat back in my desk chair holding my mouth open in joyful shock at such a quick response. Wow! Thank you!

One important element I am finding that *IG Living* provides to its readers is the "close-knit community" (kind of like a patchwork quilt) relationship it establishes between each of us. After reading your (sewn portion of patchwork quilt) message, you are no longer simply an email address named Kris. Your identity has taken on a "human" personality, exposing your hopes, dreams, and real-life feelings. I really cannot say I "know" you, yet I already feel as though I can call you a friend.

—Mark, Florida

In 1998, I read an article about a New York patient who (at the time) had consistently been receiving the same brand of IVIG for 12 years. Because of some changes to his medical insurance, he was switched to another brand name of IVIG product, which was devastating to his health.

When I questioned my neurologist about this, he likened it to different brands of aspirin, stating that they all have the same ingredients, thus there would be no difference. I personally think even that is debatable. I never really accepted that answer.

After all these years of suffering with post-infusion headaches, it was just about a year ago that my nurse informed me that slowing down the infusion rate would eliminate them. And guess what? I passed that information on to my new nurse, Barb, and there has been great improvement. My sister-in-law then told me about this new magazine and an article she had just read regarding this very topic because she was aware of my headache history. I am looking forward to receiving the magazine. I appreciate all the help and information I can get.

Thank you for everything!

—Pamela, Ohio

I.G. LIVING!

IMMUNE GLOBULIN COMMUNITY

turns

3

*We're proud to have reached this milestone,
and we couldn't have done it without you!*



"I read it cover to cover, and it is truly my lifeline to a special group of people who are dealing with the same or similar issues. When I reach the last page, I find myself a bit sad, because it is like saying goodbye to a really close friend..."

— Chrystal Byrd, Philadelphia

News Round-up

Neuropathy Action Foundation Receives a LEAD Grant

CSL Behring, a manufacturer of plasma-protein biotherapies, has awarded five grants totaling more than \$65,000 to patient advocacy organizations through its Local Empowerment for Advocacy Development (LEAD) program. Among the five recipients is the Neuropathy Action Foundation (NAF), whose mission is to empower, educate and inform patients and physicians about neuropathy.

LEAD grants support grass-roots advocacy efforts by organizations committed to helping people who use plasma-derived and recombinant therapies to manage their health conditions. The five grants represent the second round of semiannual awards in CSL Behring's LEAD program.¹

Aside from NAF, the following organizations received grants:

Hemophilia Federation of America; Nebraska Chapter of the National Hemophilia Foundation (NHF); United Virginia Chapter of NHF; and the Delaware Valley Chapter of NHF.

Pennsylvania University to Disclose Doctors' Drug Ties

In the interest of transparency, the University of Pennsylvania School of Medicine and its health system, known as Penn Medicine, is planning a website that will contain searchable information on all outside activities of its doctors and scientists. Through such a site, patients affiliated with that system will be able to learn whether their doctors are compensated by pharmaceutical firms or medical-implant makers.

By publicly disclosing ties between medical staff and industry, Penn would be at the forefront of a trend emerging in response to concerns about medical conflicts of interest.

In 2008, U.S. Sen. Chuck Grassley, R-Iowa, revealed that three Harvard doctors, including renowned child psychiatrist Joseph Biederman, had received millions from drug makers that they did not disclose, which goes against university and National Institutes of Health requirements.

Grassley and U.S. Sen. Herb Kohl, D-Wis., are pushing legislation that would establish a national database available to the public that lists industry payments to doctors of more than \$500. Several major drug makers, including Eli Lilly and Merck, have said they would begin disclosing payments to doctors this year.²

Economy Could Worsen Medicare Woes

According to federal health officials, the struggling economy will speed up the exhaustion of the Medicare trust fund covering hospital and nursing home care by one to three years.³

In March 2008, trustees for the Social Security and Medicare programs warned that the trust fund for Medicare Part A would become insolvent in 2019. But last December, the chief actuary for Medicare said that the economy would probably generate less revenue through payroll taxes than what had been projected. The federal government will continue to pay for hospital care and other services once the trust fund is exhausted, but it initially would have only enough money coming in to cover 78 percent of estimated costs.

Once a year, trustees issue a report on the financial conditions for Social Security and Medicare. Each fall, an update compares current conditions to what the trustees' latest projection indicated. In the latest update, a deterioration in Medicare's finances was predicted. "Right now, we know that we're in the start of the recession. We don't yet know how severe it might be," Richard Foster, chief actuary for the Centers for Medicare and Medicaid Services, said in an interview.⁴

The new estimate would place the exhaustion of the Part A trust fund between 2016 and 2018.

According to Foster, higher unemployment, as well as smaller wage increases, were responsible for the projected drop in revenue for Medicare Part A. Services covered through the Part A trust fund include inpatient hospital care, nursing home care, hospice and home health.⁵

New Advocacy Program

On Dec. 11, 2008, CSL Behring launched its Voice2Voice™ Vivaglobin® Advocacy Program for new patients and caregivers to support those transitioning onto the subcutaneous therapy. The consumer-outreach program will offer assistance exclusively to new patients as they begin at-home use of Vivaglobin®. New patients can register for Voice2Voice by contacting the Vivaglobin Resource Center at 1-877-VIVAGLOBIN. ■

¹ MarketWatch, www.marketwatch.com/news/story/CSL-Behring-Awards-Second-Round/story.aspx?guid=%7B7167E45F-DFBA-4EEE-88AC8974107C6BF6%7D.

² Philly.com, www.philly.com/philly/hp/news_update/20081205_Penn_Medicine_to_disclose_doctors_drug_ties.html.

³ Boston.com, www.boston.com/news/health/articles/2008/12/02/economy_could_add_to_medicare_woes.

⁴ Ibid.

⁵ Ibid.

A Bad Case of Block

By Cheryl L. Haggard



My circle of comedic opportunity has expanded. My original subject matter (rearing children with primary immune deficiency) is still ripe for the picking. But recently I realized I also have another source of material: me.

I am battling a rare autoimmune disease called ankylosing spondylitis (a painful, degenerative arthritis that primarily

affects the spine and sacroiliac joints). I don't know what's more painful: the disease itself or pronouncing what I have!

You'd think that between me and my kids' constant doctoring I'd have ample ammunition for my articles. And usually, that's the case. But this time, I struggled with my column. Writer's block became increasingly painful as my deadline loomed. But hey, at least this condition has nothing

to do with the immune system.

I was so desperate I was about to call Kris McFalls to ask her to do something uncharacteristically crackbrained, or beg the editor to publish a “Best of...” column. Then all of a sudden, just like that, someone made magic happen for me!

It began while my husband, Mark, and I were in Chicago seeking a third opinion from a brilliant spine surgeon. After a tedious appointment, during which I received a voicemail from one of my physicians back home, Mark and I decided the deliciousness of authentic Chicago deep-dish pizza was calling our potato-land palates.

After a quick ride on the el train, Mark and I found our faces immersed in stringy mozzarella, juicy pepperoni and tangy tomato sauce. We munched through layers of Italian goodness, coming up for air to keep us alive long enough for the next slice. Then, the familiar chime of my cell phone interrupted us. Mark shot me a look of frustration as he fumbled for my phone, lost in the “Big Empty” known as my purse. Mark’s frustration quickly turned to anger as the chore of finding my phone came between him and pizza pie perfection.

“It’s Dr. Roan,” Mark announced. “I’ll bet she’s got your test results.”

“She can leave a message,” I said. Then I took a long drag from my straw, savoring the creamy-sweet Brown Cow root beer that filled my mouth.

Briiing, briiing, briiing. Again, Dr. Roan’s number flashed on my cell phone.

“It must be really important if she’s calling me for the third time,” I said, motioning Mark to hand over my phone.

“Cheryl?” Sue, Dr. Roan’s assistant, asked. “Are you still in Chicago?”

“Yes. We’ll be getting back tomorrow.”

Growing nervous, I began talking before my brain was engaged.

“Mark and I are staring at the Sears Tower eating deep-dish pizza.”

Thankfully, Sue interrupted my anxious chatter.

“Cheryl, I have a real weird question. Did you send a gift to Dr. Roan?”

“What? Are you kidding me?” I asked. “Is that what all

these calls are about? There is no emergency? I’m not going to die, you just want to know if I sent you an ultra-expensive box of orange and pear chutney from Harry & David?”

I laughed with a sigh of relief.

Come to find out, Dr. Roan received a gift from another patient also named Cheryl—who forgot to sign her full name to the card. I resisted the urge to make fun of her as a small voice whispered something about pots calling kettles black.

On our way back home, I began to wonder about doctor-patient gift protocol.

Am I gonna have to pony up and buy Dr. Roan and Sue something? Will I look like a schmuck now that this other Cheryl has one-upped me? I’m no Miss Manners, but this is going a bit too far!

I told myself to forget about the gift, but it wasn’t that easy. I mean, what about the other doctors in our lives? With all the medical visits our family regularly has, this gift thing could get way out of control.

At my next appointment, I found myself blurting out: “Dr. Roan, are you now expecting something from me? Am I supposed to be giving you gifts?”

Dr. Roan paused, taken aback, before realizing what I was talking about.

“Well, you could give me something nobody else can,” Dr. Roan whispered, as if about to tell me a secret.

“You could never write about me.”

Classic, I thought, as right then I remembered a good friend’s recent query about how to avoid being a subject in my column. “Just don’t do anything foolish or get diagnosed with something I can’t pronounce,” I’d told her matter-of-factly.

Not ready to answer the good doctor, I realized my circle of comedic opportunity is far bigger than I’d thought. It goes beyond my kids. It even goes beyond me. As if it were another slice of deep-dish, I found myself relishing the power of the pen. I especially liked the idea that I may be able to knock writer’s block off my list of conditions.

Don’t mess with me. I’ve got a column and I’m not afraid to use it!

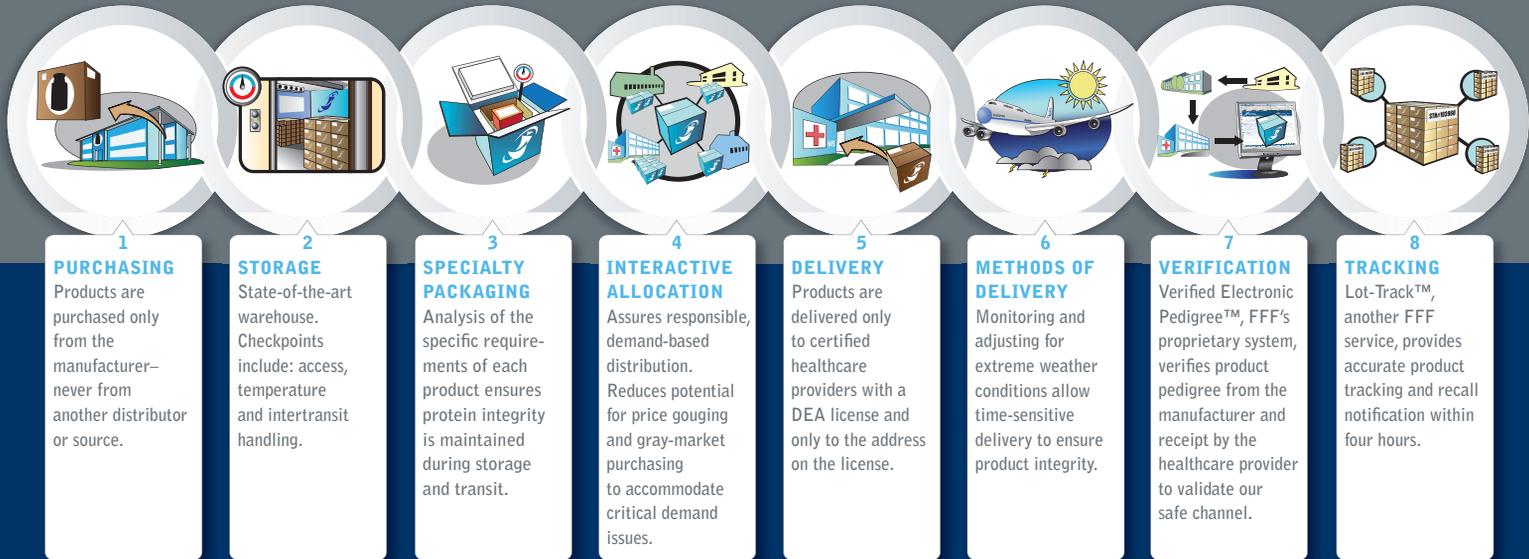
Still waiting for an answer, Dr. Roan looked at me expectantly.

“Well, Doctor,” I responded slowly, “I’ll think about it.” ■

Do you know where your products have been?

When they come from FFF,
you can be sure you do!

ONE CLEAR PATH - NO GRAY IN BETWEEN



The 8 Critical Steps to Guaranteed Channel Integrity™

FFF Enterprises has made the uncompromising decision to purchase only from the manufacturer and sell only to licensed healthcare providers, shortening the supply chain to avoid secondary distribution channels that open the door to counterfeiters.

The 8 Critical Steps to Guaranteed Channel Integrity™ assure that patient safety, product efficacy and fair pricing are maintained throughout our safe channel. From purchasing to storage and delivery, these best practices maintain the strength of each link in the chain, with patient welfare at the center of every decision.





PATIENT SAFETY UPDATE:

What's Happening With the PDMA?

By Amanda M. Traxler

As *IG Living* reported in October-November 2007, the federal drug pedigree requirement that was first introduced as part of the Prescription Drug Marketing Act (PDMA) in November of 1988, and that was most recently to be implemented in December 2006, was once again put on hold due to a court challenge to its constitutionality. Had it been put into effect, the PDMA would have mandated a pharmaceuticals distributor to document every entity that has had possession of a vial or bottle of medication the distributor handles. As noted in the earlier article, a common belief is that requiring a pedigree—documenting a product's path from manufacturer to the patient—is the most effective way to regulate responsible distribution practices and secure the pharmaceutical supply chain. These practices would deter drugs from entering secondary distribution channels, where they are at risk of diversion into the gray, or secondary, market.

On July 10, 2008, the U.S. Court of Appeals for the Second Circuit affirmed the preliminary injunction issued by a federal district court in the Eastern District of New York on Dec. 8, 2006. Due to the fact that the court upheld the preliminary injunction, the Food and Drug Administration (FDA) "does not intend to initiate any enforcement actions against any wholesaler solely for:

- Failing to include lot numbers, dosage, container size, or number of containers on a pedigree; or
- Failing to provide a pedigree that goes back to the manufacturer so long as the pedigree otherwise identifies the last authorized distributor of record that handled the drugs."¹

Where does that leave us? Much in the same place as before. Given that the preliminary injunction was upheld in July 2008, securing the pharmaceutical supply chain through the PDMA will likely not be happening anytime soon.

"It's going to remain status quo for quite a long time," said Patrick M. Schmidt, CEO of FFF Enterprises, Inc., a biopharmaceuticals distributor based in Temecula, Calif., and also the publisher of *IG Living*. "I think we will need to be prepared for continuous delays."

But that doesn't mean that everyone is sitting idly by. For many industry players, working to guarantee safety for the patient and the distribution channel is a top priority. For example, FFF has been voluntarily providing pedigrees for its customers since 2004, with its own proprietary Verified Electronic Pedigree™ system.

However, the fact remains that there is still work to be done. And, an important concept for consumers to grasp is that they shoulder part of this responsibility. Many patients do not realize, for example, >

that they can ask for a product's pedigree. As stewards of their own health, patients should remember to maintain a partnership with their healthcare providers and request what is essential to their health and safety—especially when it comes to ensuring that their immune globulin (IG) is not compromised at its final stop in the distribution channel, with a healthcare provider.

While outside of the scope of the PDMA (which solely deals with distributors and pedigrees), IG can still be vulnerable to re-entering the secondary market once it has reached a healthcare provider if that provider resells it and does not follow the "own use" policy, which means that it's not allowed to be sold or exchanged again.

“ Instead, it's much more common for a counterfeit drug to slip into the system when someone buys from an unreliable secondary source or intentionally counterfeits or compromises an authentic medicine. ”

Adam Fein, PhD

The Importance of a Safe Channel

According to Chris Ground, senior vice president of national accounts for FFF, the distribution channel for IG must be secure for three reasons: to maintain the efficacy of the product by handling it properly; to avoid possible counterfeiting; and to avoid inappropriate pricing, or price gouging, during times of short supply.

All are necessary to making sure, Ground says, that "the manufacturer's intent, which is maintaining product efficacy, is followed in the supply chain."

To Schmidt, the solution of securing the supply chain lies in not engaging in secondary distribution.

In other words, IG should move only from a manufacturer to an authorized distributor of record (ADR) to a licensed healthcare provider, and that's it. When a product follows this path, it is in the primary distribution market. When one distributor resells product to another, the secondary distribution market enters the picture. Other examples of being diverted to the gray market include when hospitals and physician offices sell overstocked drugs back into the marketplace or when wholesalers and distributors see a chance to make a quick buck and sell product to each other.

Adam Fein, PhD, an expert on pharmacy economics and the pharmaceutical supply chain, recognizes the large role that the secondary market has in drug counterfeiting—especially during times of short supply—and would no doubt appreciate Schmidt's solution.

"Legislators should recognize that the Heparin situation does not represent the most common way in which a counterfeit drug could enter your neighborhood pharmacy," Fein has written in his blog about supply channels. (The Heparin situation refers to batches of the blood thinner that were contaminated during manufacturing and that caused hundreds of allergic reactions, many of which were fatal.)

"Instead, it's much more common for a counterfeit drug to slip into the system when someone buys from an unreliable secondary source or intentionally counterfeits or compromises an authentic medicine," Fein wrote. "This process has been the entry point for almost every case investigated by the FDA in which a counterfeit or adulterated drug ended up in your local pharmacy. We cannot be complacent."²

During times of shortage, all drugs are vulnerable to entering the secondary market. According to Fein: "Even legitimate pharmacists sometimes purchase in the secondary market. For example, a 2004 study found that two-thirds of hospital pharmacy directors use secondary wholesalers as a resource to obtain needed supplies during a product shortage."³

That includes IG. According to a February 2007 study titled "Analysis of Supply, Distribution, Demand and Access Issues Associated With Immune Globulin Intravenous," which was done by the Office of the Assistant Secretary of Planning and Evaluation: "Distribution of IGIV [aka IVIG] occurs through an authorized and a secondary channel. The IGIV marketplace has struggled with channel integrity and includes a significant secondary market outside of the authorized distribution channels. The secondary market is characterized by fluctuating prices and product availability. While the size of the secondary market is unknown, our analysis shows that it likely exceeds 10 percent of the total grams available for distribution."⁴

In other words, the gray market is perpetuated by both bad guys and good guys, all of whom engage in purchasing practices that directly create opportunities for counterfeiting, tampering, drug diversion and theft of drugs.

"When drugs are diverted into the gray market, they are no longer safe," Schmidt said. "In the shadowy landscape of the gray market, these drugs are now vulnerable to mishandling, tampering, counterfeiting, and unfair pricing. Worse, they put patients' lives at risk."

The Manufacturer Perspective

While no manufacturer intends for a product to be compromised anywhere along its supply chain, IG manufacturers especially don't want that to happen.

According to Ground, the care put into the manufacture of all IG products is noteworthy.

"I've been to most of the fractionation plants [where IG is made], and I've talked to most of the people who give the tours, the scientists and the PhDs," Ground said. "Then I've talked to the engineers who built the technology, and it's striking to me to listen to the scientist or the engineer who has worked so tirelessly. They talk with such reverence about the product. They're so respectful of that protein and what they've done to maintain the integrity of it throughout a rigorous and complex manufacturing process."

When it comes to making plasma products, safety is of ultimate concern from the get-go.

Take, for example, PediGri® On Line, a tracking program of Grifols, a plasma product manufacturer based in Barcelona, Spain. Launched in the United States in September 2008, PediGri® On Line allows registered healthcare providers to access specific quality and safety information about the individual plasma sources that contributed to each vial.

Once IG leaves a plant, though, a manufacturer has no control over it.

"Manufacturers end up with this bottle of product," Ground said, "and they have to trust who they're giving that product to so it will get to a patient. When they put it in the distribution channel, they lose control. That's why they should be so very careful about choosing a distribution channel that will afford the same respect for that vial of protein as they do."

Taking another safety measure, Grifols laser etches each vial of Flebogamma® 5% DIF with a unique identifier that includes the lot number and a filling sequence production number. Even if the label is missing, the laser etching is permanent and legible. A deterrent to tampering, it also allows Grifols to reference a video of a particular vial being filled while also allowing easier tracking of individual vials.

In practice, most manufacturers ship IG only to ADRs. According to Ground: "Most manufacturers authorize only four or maybe five distributors."

For example, Octapharma, a biopharmaceuticals company based in Switzerland, reduced the number of its ADRs to five in an effort to secure its supply channel since entering the U.S. market in 2004. Further, Octapharma's direct-distribution requirements also indicate that its products are not for resale. If, for example, Octapharma learns that Octagam® has been resold by a healthcare provider, it asks its distributor to not sell to that provider again.

The Distributor Perspective

Manufacturers aren't alone in their concerns about product safety. With its 8 Steps to Guaranteed Channel Integrity™, FFF has instituted industry best practices to secure its supply channel for IG and the

other products it distributes.

Schmidt explains: "This standard is simple. My company calls it the 'Responsible Distribution Channel.' Drugs in this channel move only from the manufacturer to a sole distributor to a sole customer—with no gray in between. This guarantees channel integrity."

First and foremost, FFF's distribution channel provides a secure chain of custody that ensures biopharmaceutical products move only from the manufacturer through a single distributor to a healthcare provider licensed by the Drug Enforcement Administration (DEA).

"We sell only to DEA-licensed facilities," Ground said. "They take on the responsibility to ensure it gets to the patient appropriately."

Further, once IG is sold, it's supposed to be for "own use." According to Ground, any facility that violates this by reselling the IG will not be allowed to order product again from FFF.

Additionally, six other critical steps are taken to maintain the safety of the products. One step already mentioned is providing pedigrees. Regarding these, Schmidt says that no entity should be exempt, including manufacturers as well as ADRs.

With its commitment to safety, Schmidt considers FFF more than just a distributor.

"We're not just distributors," Schmidt said. "We're in the management of these critical-care pharmaceuticals."

That distinction is what makes the FFF business model unique.

“This standard is simple. My company calls it the ‘Responsible Distribution Channel.’ Drugs in this channel move only from the manufacturer to a sole distributor to a sole customer—with no gray in between. This guarantees channel integrity.”

Patrick M. Schmidt, CEO, FFF Enterprises

Especially during challenging, short-market conditions, another of the eight steps—interactive allocation—assures responsible, demand-based distribution of critical-care products. By ensuring product goes where the need is greatest, healthcare providers aren't forced to resort to secondary-market purchasing to accommodate critical demand. This is what FFF refers to as "Interactive Allocation," its term for responsible, patient-focused distribution of critical-care products. ➤

"If we had 1 million grams and one of our competitors had 1 million grams," Schmidt said, "we could treat more patients than they could."

Based on their strong relationships and regular interaction with their customers that helps them gauge and meet demand, FFF salespersons, whom Schmidt calls "service providers," help ensure that patients receive needed products during times of short supply. Just as important, FFF's practices help deter IG re-entering the supply chain in the secondary market.

“Manufacturers end up with this bottle of product, and they have to trust who they're giving that product to so it will get to a patient. When they put it in the distribution channel, they lose control.”

*Chris Ground,
V.P., National Accounts, FFF Enterprises*

Focusing on a Solution

Fein agrees that the ability to validate pedigrees is a fundamental requirement in order for pedigrees to make the supply chain safer. In fact, he lists that as his first rule of three that he considers key to supply-chain safety. Altogether, Fein says that anyone licensed to purchase drugs (such as a physician or a pharmacist) must:

- Demand pedigree documents (electronic or paper) from wholesalers and be able to validate the authenticity of these documents;
- Purchase only from wholesale distributors in the "Normal Distribution Channel" or wholesale distributors that are willing and able to supply pedigree.

Fein's third rule places an important duty on patients:

- Consumers must (a) refuse to do business with any pharmacy that does not adhere to the preceding two rules, and (b) be able to validate a pharmacy's compliance with these rules.

Fein contends that consumers and political representatives seem intent on ignoring the third rule.⁵ Further, he contends that many industry websites about drug safety fail to address this issue.

"The industry sites do not help consumers identify legitimate pharmacies nor do they provide a way to validate that a pharmacy

is behaving ethically in its sourcing practices. 'End-to-end' visibility is a long way off, so we in the industry must confront the pharmacy buyer problem sooner or later, regardless of the endless appeals that are likely to dog the FDA's attempts to implement the PDMA."⁶

While Fein's first two rules focus on the vulnerabilities to IG while it moves from manufacturers to distributors, Fein's third rule focuses on another distinct area of vulnerability: the last stop in the channel, which is when IG has already landed at a pharmacy or at an infusion clinic. If every pharmacy were following "own use" policy, then there would be no reason for concern at this point.

The Last Stop

Denise Hasenstab knows about the importance of Fein's third rule. Her situation, which was reported in the December-January 2007 *IG Living*, demonstrates that IG can even be vulnerable when in the hands of the healthcare provider. In "Is Your Infusion Clinic One of the Good Guys," *IG Living* detailed the Orange County, Calif., resident's civil lawsuit against her infusion clinic for altering or replacing her IG injections with saline solution for seven years. Hasenstab—who is now healthy—was awarded \$300,000 in a civil suit. The clinic, which is still open, admitted only to faulty record-keeping.

Though what truly happened has yet to be determined, the criminal side of the case is not closed. In December 2008, Hasenstab told *IG Living* that the San Diego district attorney is currently looking into the clinic. Further, the medical board has filed several complaints against the doctor.

"The medical board team turned it over to the district attorney of San Diego. I received a letter from them, and I was pretty surprised because I had written it off because I had reported this a couple of years ago," Hasenstab said.

According to Hasenstab, if the case moves ahead, the district attorney may be able to prosecute on criminal charges.

"I just don't want to get my hopes up too high," Hasenstab said, "but I am certainly happy to help in any way to bring awareness to other people because I would hate for anybody to go through what I went through."

As a consumer who is also a nurse, Hasenstab counsels that consumers can—and must—be proactive about verifying their IG has not been compromised.

What Patients Can Do

Where patients ultimately receive their IG, then, is the last stop of the distribution channel. With this in mind, patients must be aware that they can do the following to verify their IG:

- Ask your healthcare provider for the product's pedigree;
- Know the brand name of your IG, as well as what it looks like (bottle, shape, color, size);
- Monitor your own therapy in a diary in which you verify and log what product you receive at each infusion;
- If you receive infusions at a clinic, verify that your doctor is board-certified;
- Talk with your healthcare providers about where they buy their drugs and whether they follow "own use" policy;
- Ask your pharmacist if the pharmacy has a policy of not dealing in the secondary wholesale market;
- Be conscious of new or different side effects from those you've had previously or that are disclosed with the drug's packaging;
- If the drug is ineffective from the start or stops being effective, take it back to the pharmacy;
- Look at the packaging: Is it clear, clean and sealed? Look particularly at the quality and preciseness of the labeling;
- Be sure to keep samples of your medicine for evidence and comparison;
- Observe your symptoms and monitor your own levels; if your numbers are not what they should be, check with your physician;
- Check for warnings and announcements from the FDA and from state pharmacy boards and boards of health. Also explore the pharmacy's website;
- If you or your doctor suspect a medicine is bad, you or your doctor should submit a report to the FDA on its MedWatch site. Forms can be found at www.fda.gov/medwatch/report/consumer/consumer.htm.

Ensuring the safety of the supply chain will require more than the PDMA. Ultimately, it will take the cooperation of healthcare consumers, providers, distributors and manufacturers to secure a safe channel. While industry initiatives are key to continuing progress, another part, no doubt, is raising patient and provider awareness. If, as the old adage goes, knowledge is power, then patients and their providers should not hesitate in becoming proactive about this important issue. ■

Are State Efforts Worthwhile?

With federal requirements stagnant, many states have attempted to deal with the issue on a state level by enacting pedigree legislation. According to the Healthcare Distribution Management Association website, as of Nov. 20, 2008:⁷

- Eight states have enacted legislation;
- Ten states have enacted legislation, with rules pending;
- Twenty-one states have no legislation or regulations;
- Ten states have adopted final rules;
- One state has rules pending, but no legislation;
- Zero states have vetoed legislation;
- Zero states have proposed legislation.

According to Adam Fein, PhD, an expert on pharmacy economics and the pharmaceutical supply chain, "This approach has created a disparate patchwork of inconsistent regulations for tracking pharmaceuticals in the U.S. supply chain."⁸ These systems, which are often incompatible, merely raise costs, reduce product availability, and lower safety, says Fein.

"We urgently need to replace these well-intentioned but disorganized, uncoordinated, and underfunded state-level mandates... Complying with a grab bag of state laws does little more than add unnecessary costs without an equivalent increase in safety."⁹

¹ Backgrounder re: RxUSA Wholesalers, Inc. vs. HHS, www.fda.gov/CDER/regulatory/PDMA/PDMA_backgrounder.pdf.

² Fein, A. Securing America's Pharmaceutical Supply Chain, www.pharmalot.com/2008/05/the-op-ed-securing-the-supply-chain.

³ Fein, A. Drug Channels, Dec. 10, 2006, www.drugchannels.net/2006/12/thank-you-for-buying-counterfeits.html.

⁴ U.S. Department of Health and Human Services, Office of the Assistant Secretary of Planning and Evaluation (ASPE), Analysis of Supply, Distribution, Demand and Access Issues Associated With Immune Globulin Intravenous, (IGIV), February 2007, www.aspe.hhs.gov/sp/reports/2007/IGIV/index.htm.

⁵ Ibid.

⁶ Ibid.

⁷ Distributor Licensing and Pedigree Requirements by State, HDMA website, www.healthcaredistribution.org/gov_affairs/.state/state_legis-static.asp.

⁸ Fein, A. Securing America's Pharmaceutical Supply Chain, www.pharmalot.com/2008/05/the-op-ed-securing-the-supply-chain.

⁹ Ibid.

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By Amanda M. Traxler

CaringBridge[®]

Connecting Families and Friends

Before she even had diagnoses for her four children's unexplained illnesses, Kristin Smith had a CaringBridge website to update family and friends about their health. According to Kristin, a friend set up the family's free site on the nonprofit website, www.caringbridge.org.

"For the first couple of years we had it," Kristin said, "it was 'We don't know what the heck is going on with our kids but someone is sick all the time.' "

Today, with her children's diagnoses established (all four have a complement deficiency) and one bone-marrow ➤

“*Very early on in 1998
a woman called me
and said CaringBridge
literally saved her
husband’s life.*”

— *Sona Mehring, CaringBridge founder*

transplant later, the Smith kids’ CaringBridge site has received more than 420,000 hits. When at the site, many visitors have taken advantage of the chance to leave supportive messages.

For the Smiths, that support has been crucial, especially during son Conner’s hospitalization after a bone-marrow transplant in August 2007 to treat a NEMO (nuclear factor kappa B essential modulator) protein deficiency.

“It definitely felt like all those people reading the site were cheering us on and were rooting for us,” Kristin said. “They were always posting either inspirational things or really uplifting messages, and it really did make a difference because it felt like we weren’t alone.”

The site didn’t just help the Smiths’ nuclear family. For family members and friends eager for news about Conner’s health, it was also invaluable.

“I can only imagine what it was like for them to not be at the hospital and not really know what was going on,” Kristin said. “I’d get an email saying ‘Where’s the update for today?’ So I know people were waiting on them.”

That sentiment probably wouldn’t surprise Steve Fecske, father of *IG Living*



Columnist Ever Fecske has a CaringBridge site.

columnist Ever Fecske, who said that CaringBridge makes it possible to stay close “when a loved one has to be separated from you because of their search to find answers to get well.”

Recently, Ever’s condition necessitated traveling from her home in Valencia, Calif., to see specialists in Denver. Steve was able to accompany his daughter for only part of the time.

“The first time she went I was able to go for the first three days,” Steve said. “Then I had to get back home because of my other kids and responsibilities. This last time I wasn’t able to be there, but I was checking her CaringBridge site and replying every day.”

Even when geography isn’t an obstacle, face-to-face visits sometimes simply aren’t an option.

“There was a period of time where we weren’t allowed to have any visitors,” Kristin said of Conner’s three-month hospitalization after the transplant.

During that time, CaringBridge was key in helping the Lafayette, Ind., mother communicate with the large number of people who waited for news.

“We have family members all over the country, so that really was our only way to keep everybody updated,” Kristin said. “I can’t imagine making phone calls and sending out emails to keep everyone updated on a daily basis. It was even really difficult to get phone calls a lot of times. It would have been a nightmare.”

Helping Patients

For Conner—who is now doing well—the notes he received via his CaringBridge site were wonderful.

“He liked to read the messages that people left,” Kristin said. “That was fun for him—to know that people hadn’t forgotten about him and were still thinking of him. And if he was too sick to read them, a lot of times I would just read them to him.”

According to Ever, kind messages from family and friends made her day.

“To take the time to let someone you love know that you are thinking about them can change the tone of any sour note,” Ever said.

And for some, according to CaringBridge founder Sona Mehring, the site has truly been a lifesaver.

“Very early on in 1998 a woman called me and said CaringBridge literally saved her husband’s life,” Sona said. “He was spiraling down and withdrawn and not caring.

She had a CaringBridge site that was really helping her as the main caregiver.”

One night, said Sona, as the woman was writing, she realized how much strength she got from the site.

“She brought her husband down to the computer,” Sona said, “and he pored over that site for the next three to four hours.”

Once the husband became involved in the site, Sona said, despair turned into hope.

“We hear it over and over again—not only for the patient, but for the caregiver, and even that group of friends and family—how much it helps them.”

The Story of CaringBridge

Established in 1997, CaringBridge is the largest charitable nonprofit website in the world. CaringBridge websites, which have received more than 750 million visits, offer different user-selected privacy levels. Always free (nearly 90 percent of all funding comes from donations from those who use the service), CaringBridge sites can be used as long as families want—during a health condition, hospitalization, recovery and beyond.

Sona, of Eagan, Minn., created the first site to keep friends and families informed about a friend’s life-threatening pregnancy. Having the site meant Sona knew she would not disturb the mother’s need for rest or place additional demands on the hospital staff. When Baby Brighid was born almost three months premature,

the family posted news and updates about mother and baby. Visitors to the website were also able to leave encouraging messages on the guestbook.

Sadly, Baby Brighid did not survive. A memorial fund in her honor enabled Children’s Hospital in St. Paul, Minn., to dedicate a computer and Internet access

for patients and families to create their own online communities. With that, CaringBridge—whose name was selected to honor Baby Brighid—was born.

“We really thought about her name and wanted to incorporate that as almost part of her legacy,” Sona said, “and having that idea that it’s a very caring way to be able to bridge people together over the Internet. They don’t have to physically be there, but they can still be there by creating a caring bridge. It has really worked out well to have Brighid invoked in that name as well.”

A computer science major who has always been passionate about technology, Sona recognized the potential for her site early on.

“It started with a very personal story,” Sona said. “And seeing what a difference it made, I knew this could really help anybody going through a medical situation. Everybody at some point in life might need a site or might know a co-worker or a friend who has a site.”

Easy to Use

According to Sona, a CaringBridge website can be put together in five minutes.

“In the time it would take to make a phone call, you could make a CaringBridge site,” Sona said. “There are lots of quick defaults, and you don’t have to make a lot of decisions when you’re creating a site. You really have to give the basic information and provide just a few things.” ➤



Sona Mehring, CaringBridge founder

“It definitely felt like all those people reading the site were cheering us on and were rooting for us.”

— Kristin Smith

“To take the time to let someone you love know that you are thinking about them can change the tone of any sour note.”

— IG Living columnist Ever Fecske

Easy setup was important, said Sona, because CaringBridge websites are often created during stressful circumstances.

“A lot of people, the first time they create it, take the quick path,” Sona said. “Usually they’re somewhat stressed. They just learned a diagnosis or there’s information that they need to share.”

But once a site has been established, users can return to personalize it. That makes every site unique, Sona said, with users able to choose their level of privacy, what photos to share, and even how to tell their story.

For Ever, creating a site was more leisurely.

“I set up my CaringBridge site when I found out that I was going to have to go to Denver to see specialists for about two weeks,” Ever said. “It only took about an hour to set up my site, and I had so much fun doing it. You can upload pictures, pick your own backgrounds, and write your whole medical life and story.”

While setting up a site is simple, Sona is committed to increasing ways for users to engage on the site. One recent modification allows notifications to be sent when a journal is updated. Upcoming features include additional ways of putting in resource information, as well as instant messaging.

For Sona, though, user-friendliness will always be the foundation of CaringBridge.

“The most important thing is that everyone can use it and make that connection. And that connection is most powerful by the simple tools that are at the heart of CaringBridge.”

For Acute and Chronic Conditions

CaringBridge is used for a variety of medical situations.

“I could rattle off probably a whole medical journal. Of course, we started with a premature birth, so there are lots of premature births,” Sona said. “Cancer is probably half our sites right now ... it’s one of those shocking diagnoses with long-term treatment.”

Other situations, according to Sona, include childhood diseases, chronic conditions, surgeries, end-of-life, automobile accidents, and even wounded soldiers.

“It helps their brothers on the front line continue to know what’s happening for that soldier who’s going home,” Sona said.

Though acute situations were more common early on in the site’s history, Sona said that chronic conditions lend themselves to the CaringBridge concept.

“For chronic conditions, you don’t always want to talk about it every day, but people need to know about it,”



Sona said. "So here's a place where that kind of information can be communicated."

That's something Steve can relate to.

"I also check it [Ever's site] when she's home to see how she's doing," Steve said. "Sometimes she's more likely to say what she's going through on the site even though I talk to her. The site makes it easier for her to relate her experiences every day, not just when she's away, and I love to read her thoughts."

According to Kristin, writing on the site is therapeutic.

"Just the act of getting that information out," Kristin said, "that's a cathartic type of thing to do anyway, just to get all of your thoughts and feelings written down."

From his perspective, Steve also sees great benefit for Ever.

"It's great therapy for Ever not only to write about her experience, but also to know that she is passing on her experience to others who very likely can benefit," Steve said.

And that includes himself.

"I know I'm her father," Steve said, "but Ever is a very special person who has taught me so much about life."

Compassion Technology

As someone who has always been passionate about technology's ability to connect people, Sona coined a special term—compassion technology—to counter the idea that technology is coldhearted.

"Even today, a certain segment of the population really feels that technology is a cold, hard evil type of thing that pulls people apart," Sona said. "But something like CaringBridge really turns that 180 degrees around; it's not thought of as coldhearted or impersonal."

And good old-fashioned word of mouth is crucial to the use of the site.

"The biggest thing for CaringBridge is that people know about this," Sona said. "Being in your magazine is huge to get our name and our idea out there. But our top way that people find out about CaringBridge is that it's recommended by someone else."

With that in mind, Sona always advises people familiar with CaringBridge to think about anyone in their life who could use a site, too.

"It's a gift that people can give that is easy," Sona said, "and it can make a significant difference." ■

CaringBridge Fast Facts

- CaringBridge® is a nonprofit charitable organization providing the first, largest and most widely used free online service to connect family and friends facing a serious health condition, treatment and recovery.
- According to Nielsen/NetRatings' traffic analysis, CaringBridge is the largest charitable nonprofit (.org) website in the world.
- Personal CaringBridge websites can be used as long as families want—during a health condition, hospitalization, recovery and beyond.
- CaringBridge is always free—there are no ads or banners, and no spam.
- CaringBridge websites are private (with different user-selected privacy levels) and are not searchable by search engines.
- Nearly 750 million visits have been made to CaringBridge websites.
- CaringBridge visitors have left nearly 20 million messages of support and encouragement for patients and their families.
- The CaringBridge community includes authors, visitors and/or donors in all 50 states and more than 190 countries around the world.
- Every 10 minutes a new CaringBridge website is created.
- Every minute three new users register to be part of the CaringBridge experience.
- Nearly 150,000 personal and private CaringBridge websites have been created so family members and friends can stay connected, informed and show their love and support regardless of geographic distance.
- Nearly 10 percent of CaringBridge websites are created in a country other than the United States.
- More than 20 million families are connected through CaringBridge each year.



IG MANUFACTURING: UP CLOSE AND PERSONAL

By Kris McFalls

Editor's note: While the following is a personal account of a tour that Kris McFalls took last fall at Talecris Biotherapeutics, please keep in mind that all manufacturers must follow the same stringent FDA guidelines for sterility and safety. According to Kris, "Taking this tour gave me comfort seeing firsthand the care and pride put into manufacturing the lifesaving medication that so many of our readers rely on."

Last September, I visited Talecris Biotherapeutics' manufacturing plant in Clayton, N.C., for its third annual Up Close and Personal Patient Open House event—a plant tour that Talecris sponsors each year to give patients (even those who use competitors' products) a chance to see how and where Talecris' intravenous immune globulin (IVIG) and other plasma products are made. Altogether, there were about 50 of us visitors. During our two days there, we saw various parts of the manufacturing process up close, as tour participants were able to choose from one of five available tours (see the sidebar on Page 27 for an overview of the other tours). What follows is an account of my tour through the sterile filling facility, which provides final container filling, freeze-drying and pasteurization as appropriate for each product.

THE LOCKER ROOMS

My tour began with a trip to the women's locker room, as viewing the sterile filling stations required donning freshly cleaned scrubs that were ready and waiting, individually packaged neatly in plastic wrapping. Each bin of wrapped scrubs was labeled small, medium and large, but there was no tall or short. As a consequence, with my 5-foot-9-inch



frame, my scrubs barely reached my ankles. My friend, Gail Moore, a Talecris patient advocate who stands at least 6 feet tall, looked as if she was wearing capri pants, if not long shorts. Donned in scrubs and shoe covers, we were ready to enter the handwash room.

In the handwash room, we rejoined the men of our tour. Everyone was asked to wash hands and directed to grab a set of clean, individually packaged green coveralls. From there we entered a smaller empty room that functioned as a transition area called an airlock. By definition, an airlock is a compartment connecting two different environments that enables personnel to pass from one environment to another. Before opening the next door, the first door had to be completely shut or an alarm would sound.

Leaving the airlock, we entered another locker room, which gave me flashbacks of an operating room due to the sterile smell, the stainless steel environment and the cold temperatures. As I was imagining the next step to be an anesthesiologist with needles and a gas mask, we were asked to slip on hair netting, the green coveralls we were given, and gloves. A stainless steel bench marked a boundary

that, once crossed, was considered "the clean area." Before stepping over the boundary, we sat on the bench and covered our feet with yet another layer of packaged booties. With every inch of skin from our neck down covered, it was time to address the face. Our eyes were covered with goggles, our mouths with surgical masks. The last step before entering the door to the sterile bottling area was to rub our gloved hands with antibacterial foam.

Once through the next door, everyone looked the same—green-clad androids. Some were taller, some were wider, but those were the only distinctions. I imagine working in that kind of environment would make you very good at reading another's eyes, as that is all you could see.

THE BOTTLING AREA

Loaded on pallets, the bottles come into this area by the thousands. Each bottle is placed in automated machinery that thoroughly washes and sterilizes it. After this, the bottles are lined up in a single line, like soldiers on a conveyor belt, ready for inspection. Each bottle passes through an inspection hood where any flaw is magnified, making it easy for the sergeant, uh, I mean, inspector, to identify any that need to be weeded out from the ranks. Each glass



bottle is automatically spun around to make sure every millimeter of its surface is examined. To ensure acuity and attention, the inspector—another green-clad body sitting with his or her head resting about a foot behind the magnified viewing glass—is rotated out every 30 minutes. ➤



THE FILLING AREA

The filling area consists of more rooms built with stainless steel walls and viewing areas that are enclosed in glass. As far as I could tell, the air in these rooms is about as clean as you can find. Only employees who work in these rooms can enter them. And when they do, they look like astronauts walking on the moon or investigators dressed in hazmat clothes at a crime scene. From their moon boots to their head covering, face shields and goggles, every inch of skin is covered. The sterile bubble-like work environment sparked memories of David Vetter, the boy with severe combined immune deficiency syndrome (SCIDS) who was raised in a bubble to protect his very fragile immune system. Apparently I was not the only one feeling this way, as Gail remarked, "They work in a bubble so we don't have to live in one." Another patient asked about the employees' needs for breaks. We were told

every time a break is needed, the employee has to go through the entire gowning process from the start. Our tour guide reported this could happen several times a day.

I observed one worker in the bubble taking culture samples on every surface imaginable. Each sample was meticulously documented. Samples were taken multiple times throughout the day, seven days a week, 24 hours a day. I would imagine if you were an immune-deficient patient, this would be the safest place in the world to work.

Along the lines of safety precautions, if an employee reports to work with even an inkling of being sick (or having been exposed to a contagious agent), he or she must first report to the health center to be cleared to work in any

of the sterile or clean environments. If there is any question, the worker will be re-assigned to another area until deemed healthy.

After touring the sterile filling and bottling area, we reversed the process of gowning so we could get back into our street clothes. Having become so acutely aware of the clean and sterile environment, I felt as if I needed to treat my street clothes



with antibacterial spray before putting them back on.

Our tour over, our group was guided into the large company cafeteria. There waiting, as if a celebrity were about to grace their presence, were hundreds of Talecris employees who eagerly wanted to hear from us how what they do affected our lives. They listened intently as Tyler from Chico, Calif., told them how much of his first two years of life was spent in a hospital with multiple bouts of pneumonia. Tyler went on to say that because of the love and support of his mom, as well as his IG therapy, he not only survived the near-death experiences, but also

thrived. Today, he awaits acceptance into medical school. Another gentleman got up and thanked the employees for allowing him to be bored and eat cottage cheese. Before his diagnosis of alpha-1 antitrypsin deficiency (genetic emphysema), he was near death, unable to eat or breathe unaided.

After absorbing all the patient testimonials, many employees thanked us for showing them how important their jobs are. As the meeting concluded, the many hugs exchanged were not unlike those seen at the end of a family reunion. ■

OPEN HOUSE PLANT TOURS

The following five tours are available at the Open House¹

IVIG-C Facility

This manufacturing facility is solely dedicated to the production of Talecris' intravenous immune globulin therapy. (The C refers to caprylate/chromatography purified.) The completely closed and highly automated production process involves a series of pathogen reduction and product purification steps. The facility includes two identical production lines, called "trains," that can process two batches of IGIV-C independently. The tour is conducted in a corridor adjacent to the manufacturing area and includes a detailed description of the facility and the production process as well as an opportunity to watch as employees utilize various stainless steel vessels, filter presses, chromatography columns and ultra-filtration systems to manufacture IGIV-C.

Packaging and Shipping Facilities

Tour participants watch as the packaging team handles the incubation, cold storage, staging, inspection, label development and packaging of all products. They will then follow the products to the shipping facility to view product shipments, which are packed in special shippers that control product temperature and maintain product integrity. Talecris' innovative packaging and shipping solutions provide the final link in ensuring product safety.

Alpha-1 MP Facility

The Alpha-1 Modified Process (MP) facility is dedicated to the production of Talecris' next-generation Alpha-1 therapy, which is currently in the clinical trial phase, for Alpha-1 Antitrypsin Deficiency (genetic emphysema). The brand-new facility incorporates technology changes into the current manufacturing process. The modified

process also includes additional viral inactivation/removal steps, such as nanofiltration. A tour of this facility includes a detailed description of the facility and the production process as well as an opportunity to see the purification columns, ultrafiltration skids, vessels and computer control systems that are used together to produce Alpha-1 MP.

Sterile Filling Facility

The sterile filling facility is dedicated to aseptic, contamination-free bottle filling and provides final container filling, freeze-drying and pasteurization as appropriate for each Talecris product. Anything that could potentially affect product sterility must be strictly controlled during the filling process. Therefore, every detail of the facility is designed to eliminate points of potential contamination. Tour participants will watch as primary aseptic filling occurs on four filling lines that represent the highest clean room standards. These lines handle glass vials ranging from three to 250 milliliters.

Fractionation Facility

Fractionation is the complex process of extracting delicate proteins from human blood plasma for the manufacture of a variety of intravenous and intramuscular therapeutic biological products. Multiple steps using controlled agitation, temperature, ethanol concentration and variation in pH are involved in isolating the proteins into fractions. Tour participants will watch as frozen blood plasma is removed from containers using an automated bottle opener; combined and thawed in large vessels; and processed using Sharples centrifuges, Schenk filter presses, 6000-liter tanks and acetone drying.

¹ The following descriptions were taken from informational brochures about the Open House and were printed with the permission of Talecris.

Let's Talk!

By Shirley German Vulpe, EdD



In this column of the "Let's Talk!" series I interviewed Jeanette Weaver, an extraordinary mother whose two children both have health challenges. Her son, who is now 3, was born with multiple heart defects and had heart surgery before his first birthday. Her 5-year-old daughter, Grace, has juvenile dermatomyositis (JDM), a rare autoimmune disease whose primary symptoms are a skin rash and weak muscles.

Shirley | Thank you for the interview. When was your daughter diagnosed, and can you tell me about the diagnostic process?

Jeanette | My daughter was diagnosed in August 2007. It was a long process. In December of 2006 she had

a cold. She developed a cough and wheeze that did not go away. She saw an allergist and no allergies were found. She was started on Flovent and that helped her breathing. Then in April 2007 she developed a facial rash. We went to our pediatrician. He referred us to a pediatric dermatologist. She said not to worry. The rash will be gone in four weeks or less. However, when we went for our follow-up visit, her skin was much worse. She now had a rash on her elbows, knees and knuckles. The dermatologist started to do some muscle testing similar to that done to diagnose multiple sclerosis. I asked why. She said, "Oh Mama, let me finish, don't get upset." However, the doctor was obviously concerned and referred me to Seattle Children's Hospital. Three days later, Grace was seen by a pediatric rheumatologist who asked if I had noticed any problems with her muscles. I recalled that she had fallen a couple of times but had attributed it to her flip-flop sandals. However, the problems increased before her diagnosis was confirmed. She was having trouble getting out of bed and off the floor without using her hands to compensate for her leg weakness. The specialists said they thought Grace had JDM but would

If your life depends on immune globulin, this column is for you! It is an opportunity to network and share our experiences, because it behooves us to learn as much as possible about all of the ramifications of our illnesses, and this column allows us to learn from one another.

If you have a story you'd like to share, please email it to us at editor@igliving.com.

require several tests to confirm the diagnosis. Several blood tests were done. Her diagnosis was confirmed when the CPK (a muscle enzyme that is elevated when muscles are inflamed) was slightly elevated. Then they did an MRI of her neck, body core muscles and lower body as well as a CT of her lungs. They found diffuse muscle inflammation in her pelvis, buttocks and thighs. Much more inflammation was found than was expected with her low CPK count. They recommended that she receive intravenous immune globulin (IVIG) starting immediately. Grace was admitted to the hospital for this. On the first day of admission she received her first dose of IVIG. She also received methylprednisolone infusions each of the three days she was hospitalized.

Shirley | Have you had any problems receiving or paying for the IVIG?

Jeanette | No, none at all. Our local HMO has been wonderful about it. They have paid for IVIG and for a second opinion with no problems.

Shirley | Has she had any other treatments?

Jeanette | Yes. She is on oral prednisone (a steroid) daily to decrease inflammation. She also receives weekly injections of methotrexate and is now down to monthly infusions of Solu-Medrol. She also has had aquatic therapy and attended an athletic camp this summer. Both help build and maintain muscle strength, and they are a great deal of fun. Unfortunately, she has also had to see a psychiatrist and go to play therapy because she became traumatized by multiple failed needle procedures to place her IVs.

Shirley | **Has IVIG helped?**

Jeanette | Immediately! Her skin improved within 24 hours of her first IVIG infusion. In October of 2007 she was much improved, and they wanted to taper her meds as they thought she was in remission. I was concerned and asked for a second opinion. I looked up on the Internet that there was a specialist at Chicago Children's Memorial Hospital. She said not to taper her IVIG, Solu-Medrol or oral prednisone.

Shirley | **Have you received any support?**

Jeanette | Yes! My husband, Doug, is wonderful! When my son was ill, we became involved in a support group for parents with children who had cardiac disease and had found that immensely helpful. So I looked for one for JDM. There is an association called CureJM Foundation, but no parent group per se, as this is a very rare condition. So through CureJM Foundation I was connected to other parents with children with JDM. They are very helpful. The Internet has been a great source of information for me.

Grace's physicians have been accepting of my high degree of

involvement as this is a very rare condition. I have done a great deal of research. I print out relevant information I find and ask the physicians to read it and tell me if they think the information I found applies to Grace. I am now actively exploring some solutions to the bowel issues Grace has developed. I have often asked each physician what they would do if Grace was their daughter. They have been very accepting of my attitude and encouraged me to continue as I do. Grace's pediatrician is now helping me get Grace a non-invasive evaluation for bowel vasculitis. This is a condition associated with JDM that may be causing Grace's current bowel problems. After being told that a noninvasive procedure did not exist to evaluate vasculitis in Grace's colon, I researched until I found a doctor who had developed a technique that would in fact do this. I want Grace's problems solved but want to avoid more trauma for her if at all possible.

Shirley | **What was the best advice you've received?**

Jeanette | To give Grace IVIG. When I asked my pediatrician, who has had a lot of experience using IVIG with infants, about it, he said that if it was his daughter he would try IVIG. So we did, and it has helped her immensely.

Shirley | **Have you any final message for those who read this column?**

Jeanette | Don't wholly rely on others, even physicians. Parents are their child's best advocate. Learn as much as you can, every way you can. Find experienced specialists. Question everything. Speak up! Medical insurance usually has second-opinion coverage: Use it! Be relentless! It is a never-ending job. Specifically, ask physicians, "What objective data do you have for this decision?" You should ask this question about every decision made about your child's condition. Make sure all decisions related to your child's health condition are supported by evidence-based science. Ask physicians to provide copies of scholarly literature that support their decisions as well as articles that support valid medical alternatives to their recommendations for your child. 📌

Resources

1. Juvenile myositis (JM), including juvenile dermatomyositis (JDM), amyopathic dermatomyositis (AMD) and juvenile polymyositis (JPM), affects 5,000 children in the U.S. More information can be found at the CureJM Foundation website, www.curejm.com.
2. Solu-Medrol (Methylprednisolone) is in a class of drugs called corticosteroids. Methylprednisolone, which relieves inflammation, is used to treat allergic disorders, skin conditions, ulcerative colitis, arthritis, lupus, psoriasis and breathing disorders. For more information, check out www.nlm.nih.gov/medlineplus/druginfo/meds/a601157.html.

What You Need to Know About Lifetime Caps

By Jim Trageser

A million is a pretty big number, but put a dollar sign in front of it, and it seems even more significant.

Unless that's the lifetime cap on your health insurance and you have a family member with a chronic medical condition or even a single serious episode with hospitalization.

In that case, a million dollars can disappear pretty darn quickly. And when the lifetime cap is reached, a family can find itself with no way of paying medical bills.

Most of us who have a choice of healthcare plans are pretty good about doing the math on annual costs: monthly premium plus copays, deductibles and other out-of-pocket expenses.

But not everyone pays attention to lifetime caps, or how they should figure into your insurance-buying or selecting process.

A lifetime cap is the amount of money an insurance plan will pay over the lifetime of a covered individual. So if you have a \$1 million lifetime cap, that means that the insurance company will pay up to \$1 million in allowable medical expenses over the course of a patient's life span—but no more.

A long hospital stay or lengthy rehabilitation—or cutting-edge new treatment or drug—can cut through a million dollars pretty quickly. And treatments like IG can add up over a decade or more for those with chronic conditions.

Earlier this year, The Associated Press reported on the Wusterbarth family of Wake Forest, N.C. When their 20-month-old daughter contracted a viral heart infection and needed a transplant, their insurance plan's \$1 million cap was expended before their daughter's immediate treatment was even complete. Out of insurance, her parents continue to struggle to pay for her ongoing anti-rejection medications and other expenses.

Now, not every plan has a lifetime cap as low as \$1 million. In fact, according to news reports on a study by the Henry J. Kaiser Family Foundation, only 1 percent of health plans have caps that low. Some plans don't have lifetime caps at all, so it's important to know the details of your health plan.

And with that Kaiser study showing that nearly a quarter (22 percent) of plans feature a lifetime cap of \$2 million or less, the reality is that more and more families—particularly those with chronic conditions that require ongoing treatment—are going to find themselves with their health benefits exhausted.

With few insurers willing to take on new patients with pre-existing conditions, a family whose lifetime cap has been exhausted faces very few options. If the family's income is low enough, the family may qualify for Medicare or state medical benefits. If not, and they can't purchase health insurance on the open market, fundraisers may be the only option to getting the treatments needed by a family member.

Why Caps?

Why do insurers have lifetime caps on their insurance plans?

Insurers say it's to control costs. A lifetime cap limits risk, allowing insurance companies to offer lower monthly premiums, lower copays or both.

Many large employers are self-insured—hiring a health insurance company to manage their claims, but paying qualifying expenses out of their own profits. They do this because this is often cheaper for a large company than simply buying health policies from an insurance company, but it also exposes the employer to significant financial risk if too many of its employees develop serious health problems.

But while lifetime caps undoubtedly make good sense to those responsible for keeping their companies profitable, patient advocates point out that in many cases these caps are never adjusted for inflation. With the cost for modern medical care continuing to rise faster than inflation, a lifetime cap of \$1 million is obviously going to be worth less in 2018 than it is in 2008, or was in 1998 or 1988.

Worth pointing out is the reality that the effectiveness of medical care in 2008 is greater than it was even just a decade earlier. There are treatments for cancer and other deadly diseases available today that simply didn't exist previously, and ongoing research into new drugs and other treatments is responsible for much of the annual increase in the cost of medical care and insurance.

But for a family member with a life-threatening disease, knowing a treatment is available may seem more like cruelty than progress if an insurance plan puts that new treatment out of reach financially.

Families' Experiences

It's not just too-low lifetime caps that can cause families heartache; there is also the fact that at least some insurance companies are apparently tracking people their entire lives and not resetting the lifetime cap even if an individual changes employers.

One *IG Living* reader, who requested her name not be used for this story, told *IG Living* that she was recently offered a new job at a different company. When she inquired about benefits—as she has a child on an expensive therapy—she learned that the new company’s health insurance was with the same insurer as her current employer. And she also found out that her family’s lifetime cap would not be reset even if she changed jobs, which obviously meant she was changing policies. An employee with a different insurance company, who also requested anonymity, confirmed that this is an increasingly common practice in the insurance industry.

Even when there isn’t a conscious effort to control costs by tracking people, oftentimes insurers impose conditions that can inadvertently have a negative impact on an individual’s lifetime cap.

Another *IG Living* reader reported that her family’s insurance is through a labor union—self-insured similar to that of many large employers, with an insurance company managing claims. When her teenage daughter was diagnosed with juvenile dermatomyositis, she was put on IVIG therapy, which her doctor initially ordered to be performed at the hospital, where she could be monitored for side effects. After a few months, her insurance company representative recommended home IVIG administration—and the doctor agreed.

When our reader explored the details of her family’s insurance company, she discovered their policy had a lifetime cap not only on expenditures, but on how many days could be spent in the hospital. So, at first blush, the home treatment for IVIG seemed to make the most sense (especially as it cost less than being at the hospital).

But while discussing this with the union representative who handled insurance issues, she learned that home treatment would use up their lifetime cap on expenditures quicker than the outpatient hospital treatments, which, it turned out, didn’t even count as hospital stays after all.

Though it actually increases costs to the union, this East Coast family is continuing their daughter’s IG infusions in a hospital outpatient environment because it will extend their daughter’s benefits significantly.

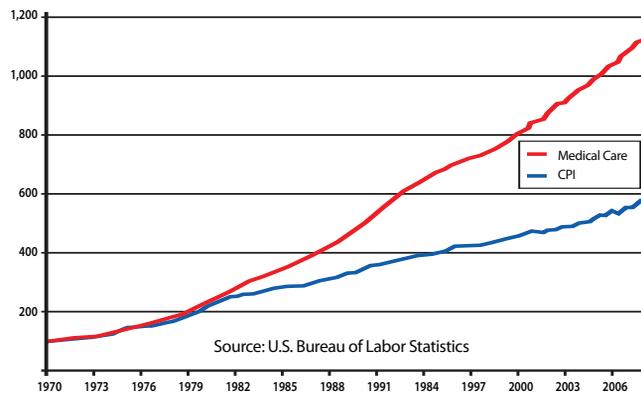
Sweating the Details

This last example points out another reality about lifetime caps: How they’re calculated isn’t always obvious.

The most important part is this: Your lifetime cap is exhausted only by the actual payments your insurer pays.

So if you’re billed \$5,000 for an infusion, but your insurer has negotiated a 20 percent discount with the provider for an actual claim of \$4,000 and ends up paying \$3,200 to settle that claim (minus your copay or deductible), your lifetime cap is only diminished by the \$3,200 paid.

Medical Care vs. Total Inflation 1970 = 100¹



The cost of medical care has risen far more than overall inflation since 1970. (MPR Graphic/Bill Catlin)

With many insurance plans offering significant discounts for using in-network providers, the difference between using your longtime doctor and one in the insurer’s network may not only be a few hundred dollars out of your pocket in copays and deductibles, but could be the difference in exhausting your lifetime cap or not.

Finding Solutions

The National Hemophilia Foundation (NHF) is trying to build grass-roots support for a pair of bills introduced last year that would raise the minimum lifetime cap to \$5 million for most employer-provided health insurance plans. Sen. Byron Dorgan, D-N.D., last March introduced Senate Bill 2706, the Health Insurance Coverage Protection Act. In July, the identically titled House Resolution 6528 was introduced by Rep. Anna Eshoo, D-Calif.

But no action was taken on either bill; each was referred to committee, where they languished.

The Associated Press article on the experience of the Wusterbarth family noted that insurance company representatives oppose government mandates on lifetime caps—arguing that raising the caps mandatorily could raise the price of insurance policies and end up narrowing the choice of insurance plans available to consumers.

The NHF (which represents hemophiliacs, who can spend tens of thousands of dollars each month in ongoing treatment programs necessary to maintain well-being) is continuing to press for government action, and so the new Congress is likely to at least consider the issue.

In the meantime, though, everyone—particularly those with long-term care issues in their family—should find out if their plan has a lifetime cap, how much it is, and how it is calculated. ■

¹ <http://minnesota.publicradio.org/display/web/2008/08/04/stagflation>.



Dosing Alternatives in Subcutaneous Immunoglobulin Therapy

By Melvin Berger, MD, PhD

Editor's Note: In response to readers' frequent inquiries about subcutaneous immune globulin (SCIG) therapy, IG Living is pleased to bring you the following article by Melvin Berger, MD, PhD, former Director of the Jeffrey Modell Center for Primary Immune Deficiencies at Rainbow Babies and Children's Hospital in Cleveland, Ohio, and current Medical Director of CSL Behring. The opinions and recommendations expressed in this article are his alone and are based on his experience as a practicing physician and researcher. They do not reflect the positions of CSL Behring or IG Living. Also, readers should understand that treatment protocols may vary from those described in the article. Because of this, patients exploring whether SCIG therapy is an appropriate option for them should discuss their individual cases with their personal physicians.

Introduction

Immunoglobulin G (IgG) replacement therapy is the standard care for patients with primary immune deficiency diseases (PIDDs). Previously, IgG had been administered mostly by intramuscular injection, but since the development of intravenous preparations (IVIg), the IV route has been predominant, especially in the United States. Subcutaneous infusion (SCIG) using small mechanical pumps was introduced in the early 1980s, and has recently become much more popular in the United States with the licensing of a 16% IgG preparation specifically

intended for subcutaneous use.¹ Subcutaneous infusion is associated with efficacy comparable to that of IVIg¹⁻³ and a higher quality of life among patients.⁴ Subcutaneous infusions are usually administered more frequently than IVIg infusions, and since they can be self-administered, SCIG is associated with different requirements for training. For some practitioners and patients unfamiliar with this method of administration, initiating therapy with SCIG or switching from IVIg to SCIG has been a challenge.

Patients

With multiple administration options now available for IgG replacement therapy, it is possible to offer most patients the choice between IVIg and SCIG. Although IVIg is well tolerated by most patients, an alternative option is of critical importance for some patients, such as those with poor venous access or who experience significant systemic adverse events during or after IVIg infusion. Since subcutaneous IgG regimens frequently feature infusions weekly or more often, this method is associated with a leveling-out of the serum IgG concentration, which may be preferred by patients who feel their IVIg "wearing off" before their next infusion is due. Some patients consider the monthly visits to an infusion center an unacceptable interference with their lifestyle and enjoy

taking greater responsibility for their care while on SCIg regimens. Others prefer once-monthly IVIg treatments, have a fear of multiple needle sticks, or are uncomfortable self-administering medication.⁵

Dose

The usually accepted range for total monthly doses for IgG replacement therapy for PIDD is 300–800 mg/kg,^{2,3,6–8} which can be divided into weekly doses for SCIg or given once every three to four weeks for IVIg. Many immunologists prescribe the same monthly dose by both routes, although a study conducted to meet the Food and Drug Administration criterion that the total area under the curve achieved with SC must equal that previously recorded with IV suggested that 137% of the IVIg dose was necessary to achieve this equality by the SC route. An initial monthly dose of 400 mg/kg given as a single IV infusion, or as four weekly infusions of 100 mg/kg each, is typically used for both children and adults, and is then adjusted based on the individual patient's clinical response. The necessary serum IgG level varies significantly between patients and depends on the patients' baseline serum IgG levels as well as their clinical responses, and is best individualized for each patient.^{6,7,9} Higher doses are often preferred in patients with chronic/recurrent lung or sinus disease. Early studies found, and later studies confirmed, that administration of weekly SCIg at the same total monthly dose as IVIg leads to stable IgG levels over time with trough serum IgG levels that are approximately 10% to 20% higher than with IV treatment.^{3,10,11}

Dosing Schedule

Basic scheme

A simple basic scheme to initiate a new patient to SCIg therapy using the 16% solution, Vivaglobin®, is outlined in Table 1. For once-weekly dosing based on 100 mg/kg/week, a quick way to calculate the appropriate mL dose is to multiply 0.6 times the patient's weight in kilograms (i.e., since Vivaglobin contains 160 mg IgG/mL, 0.6 mg/kg x 160 mg/mL = 96 mg/kg). Therefore, an adult weighing 70 kg would need approximately 42 mL/week. Similarly, a child weighing 20 kg would require 12 mL/week. Given available vial sizes (3, 10 and 20 mL containing 0.48, 1.6 and 3.2 g of IgG, respectively), the administered doses might reasonably be divided as 40 mL per week, with an additional 10 mL dose given once a month, for an adult or 10 mL five times a month for a child. For the logistics of administering the 40 mL dose in this case, a simplified "Rule of Twos" can be applied (Table 2). For an adult to

receive 40 mL/week (6.4 g), two bottles of 20 cc (16% solution) can be injected into two sites over two hours (rate of 10 mL/site/hour). Similarly, for the child weighing 20 kg, the contents of one 10 cc bottle can be injected into two sites over two hours (rate of 5 mL/site/hour) or the whole dose might be injected into one site. Extra infusions can be added during each month or week to attain the desired total monthly dose. Both the number of sites and infusion speeds will vary among patients due to tolerability and individual scheduling preferences. Patient input into schedule, number of sites, and duration of each infusion is particularly important for embracing SC therapy. Alternative regimens include 5–10 mL injected manually into one or two sites using a 23- or 25-gauge butterfly needle without a pump. This may be done as often as daily by some adults. In one report, a pregnant patient self-administered 20 mL daily for several weeks to maintain a high IgG level in herself and the fetus.¹² An infusion rate of 1 mL/minute is well tolerated, even by infants, as long as the amount/site does not exceed 5 mL.

Table 1. Basic Dosing Scheme

- **Dose** → **400 mg/kg/month**
- **Bottles** → **Calculate # bottles/month**
 - ▲ (.6 x weight) = mL/week, then divide by 3.2, 1.6, or 0.48 (grams) to choose the number of 20, 10, or 3 mL bottles, respectively
 - or
 - ▲ 2 (20 mL) bottles for every 6.4 g needed/month
 - ▲ 2 (10 mL) bottles for every 3.2 g needed/month
 - ▲ Round to nearest vial size to avoid waste, vary # infusions/month to achieve target monthly dose.
- **Adult rates**
Start at 10 mL/hour/site (0.1 to 0.25 mL/kg/site/hour)
- **Volume**
Usually no more than 20 mL/site, at least initially
- **Adjust**
infusions/sites: patient preference

Serum IgG Levels

Difference in Pharmacokinetic Profile

In contrast to the high peak and low trough levels observed with monthly infusions of IVIg, weekly infusions of SCIg generate nearly true steady state IgG levels that ➤

remain relatively constant between infusions. A single IVIg dose of 400 mg/kg results in a sharp rise in serum IgG concentration that often more than doubles the preinfusion trough level. This is followed by a rapid decline due to the equilibration of the IgG between the intravascular and extracellular spaces, and then there is a gradual decrease in serum IgG.¹³ Subcutaneous infusions create a local depot of IgG, which is absorbed over 24–48 hours, and more frequent smaller doses lead to a nearly constant serum level of IgG. Since both administration methods appear to be equally effective in reducing the risk of serious infections, the difference between the peak and trough patterns with IV therapy and the nearly constant levels with SC therapy do not appear to have a clear effect on clinical outcome or efficacy per se. However, presumably due to the lack of very high peak IgG levels or rapid shifts in intravascular protein concentrations, the SC regimens have been shown to have much lower frequencies of infusion-related systemic adverse effects.^{1,2,13,14,17}

Table 2. Rule of Twos

Simplified single-dose regimen using “rule of twos.” Keep individual dose regimen the same, but vary number of doses per month to achieve desired total monthly dose.

Once a week dosing:

- **Two bottles, two sites, two hours:**

- ▲ 40 mL (6.4 grams, 2 x 20 mL bottles) at 10 mL per site per hour in teenager or adult: 25.6 grams/month
- ▲ 20 mL (3.2 grams, 2 x 10 mL bottles) at 5 mL per site per hour in child: 12.8 grams per month
- ▲ Can give two infusions per week to double dose, or use 5–6 infusions per month for intermediate doses

Strategies for Achieving and Maintaining Target Serum IgG Levels

The typical goal when starting a new patient on SCIg therapy or transitioning from IVIg to SCIg is to get serum IgG levels within normal range quickly to provide continued protection from serious infections. This goal can be

achieved in several ways:

- SCIg injections every day for five days or twice a week for the first month¹⁵
- Half of the total monthly IVIg dose and the other half SCIg at the same visit
- Initiating weekly SCIg injections within a week after the final IVIg infusion¹

However, a more gradual increase up to therapeutic serum IgG levels may be appropriate for patients who have not previously been treated with IgG and who have chronic infections, due to the risk of antigen-antibody reactions.

Administration

The number of infusion sites for weekly SCIg therapy typically ranges from one to four. The optimal volume per site will depend on what is tolerated by the patient and the time over which the infusion can be given. In many cases, the volume per site and/or the rate may be increased as the patient becomes accustomed to the SCIg infusions. When utilizing a pump, generally no more than 10–15 mL is infused at a single site during one session. An exception would be in the case of very slow administration (i.e., overnight).¹⁶ The rate of infusion will also vary by individual preference and experience with the therapy. Treatment-naïve patients have been successfully treated with initial therapy of 10 mL per hour per site in adults, followed by an increase of up to 20 mL/hour/site as tolerated by the patient.^{11,16,17} Long-term patients have been found to be comfortable with infusion rates up to 35 mL/hour, which has been shown to be safe and tolerable.¹⁷ When using the “push” method, 5 to 10 mL doses are typically infused into one site at about 1 mL per minute. Mild to moderate infusion-site reactions are common for SCIg infusions, particularly in patients new to this application, but these reactions typically dissipate within 12 hours and can be treated with massage or warm compresses. The incidence has been reported to decrease over time,^{1,11} and no long-term sequelae or changes at the sites have been reported.

Training

Adequate training needs to be a central part of any therapeutic regimen involving home self-administration. In a model commonly used in Sweden, an extensive week-long training program addresses administration techniques as well as education about the basics of the immune system and the social effects of chronic disease. At the same time, this program helps to develop peer

support amongst the cohort of patients taking the training together. Patients perform their own infusions from the start, under supervision, within the group setting. After two months on home therapy, patients perform one therapy session under the supervision of a nurse to ensure an appropriate technique is being used.

In U.S. practices, time and financial support for training are often more limited, necessitating a briefer training program and self-motivated disease education. One approach often used is “see one, do one, teach one,” in which, during one therapy session, patients watch one infusion, do one themselves with assistance, and then demonstrate a third to the infusion nurse. Using this method, many patients are comfortable with self-administration after one or two sessions and return to the clinic to demonstrate proficiency after several home infusions. We have found it very useful to link a home infusion to other routine weekly activities, such as a favorite television show or sports broadcast, or a regular poker or bingo night. [Personal communication from Melvin Berger, MD, Ann Gardulf, MD, and Hans Ochs, MD, February 2006.] Patients can be ambulatory during their infusions and engage in just about any activity other than vigorous sports, e.g., wrestling or swimming.

As the number of patients using SClg therapy expands, it is essential to ensure that individuals providing patient training are well-trained themselves, and that this expertise is available within homecare companies that support SClg home-treatment programs. There are many helpful sources of information for patients and providers on both PIDD in general and subcutaneous IgG therapy in particular. Web sites for some of these sources are listed below.

- www.cc.nih.gov/ccc/patient_education/pepubs/subq.pdf
- www.pia.org.uk/publications/general_publications/subcutaneous_infusion.htm
- www.primaryimmune.org
- www.jmfworld.com
- www.info4pi.org
- www.Rainbowbabies.org/subcu
- www.vivaglobin.com

Conclusions

Some basic guidelines are necessary to follow for optimizing the benefits of SClg therapy, but this method provides significant flexibility with many different options available. Different approaches will be more or less applicable in various settings, reimbursement models, and patients. Careful patient selection, patient input into selecting a regimen that best fits their lifestyle and

schedule, and training are key components of successful home therapy with SClg. Continuing follow-up with periodic reassessment of the patient’s condition and adjustment of the treatment regimen is crucial for the success of SClg self-infusion at home.

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Specialists Raise Kawasaki Disease Awareness



From left, Drs. Jane Burns, Adriana Tremoulet and Susan Fernandez

By Catherine Billey

In 1988, the American Academy of Pediatrics endorsed high doses of IVIG plus aspirin as the recommended therapy for Kawasaki disease (KD), an enigmatic childhood illness that, left untreated, is the No. 1 cause of acquired heart disease in children—specifically, lethal coronary artery aneurysms. KD—characterized by fever, rash, and

red eyes as well as red lips, hands and feet—strikes more boys than girls in the toddler age range. The cause of KD continues to baffle researchers, but IVIG is 97 percent effective in prevention of aneurysms and 85 percent effective in resolving fever where the disease is correctly identified.

Just over 20 years since the endorsement of IVIG as the recommended protocol, there remains a lack of awareness about KD in some of the most vulnerable communities in the United States, particularly among Latinos and Filipinos. No single test can detect KD, so it is usually diagnosed through evaluation of the symptoms and ruling out other conditions. Sometimes, KD is confused with infectious diseases such as scarlet fever and measles. But cultural and language barriers also play a role.

Pediatrician Jane Burns, professor and Chief of the Division of Allergy, Immunology and Rheumatology in the UC San Diego Department of Pediatrics, has dedicated her research to solving KD. The memory of how she came to be involved 30 years ago while a house officer in training is still an emotional one. "I had some very dramatic patients, some of whom died before my very eyes," she said in a recent interview.

One was a baby on whom a standard autopsy was performed. "When the family came back from their little town in Wyoming for the session that we always have with parents after a postmortem exam, they came back with a paper bag of \$1,500 in small bills. They had gone door to door in their community collecting on research for KD. And they handed the bag to me and asked, 'Will you do research on Kawasaki disease?'"

And so Burns' focus on KD began. "Part of the excitement for me is spawning the next generation of researchers. It's very much on my mind that I need to train the next generation. And I need to try and create the KD research center as an established entity so there's a sense of permanence that something will last beyond the length of my career."

Recently, she brought two specialists on board at UC San Diego to help launch a major outreach campaign in local Latino and Filipino communities to get the word out about recognizing KD and seeking treatment. "We noticed a few years ago that the majority of our patients with late diagnoses were either Filipino or Latino. We wondered why that was. There was also a high rate of aneurysms because late diagnosis goes along with aneurysms." This meant educating the medical community as well as the lay public, Burns said, where language as well as cultural issues can inhibit access to healthcare and receiving timely diagnosis.

The Filipino Nurses Association was one natural place to begin. "First of all, they're women, so many of them have children. And second of all, it's obviously a well-educated population. They're involved with caregiving as well as being parents and members of the Filipino community," Burns said.

One of the newly arrived specialists, Dr. Susan Fernandez, practiced gastroenterology for 10 years in the Philippines and treated 20 KD cases because of GI complications. She is now a postdoctoral researcher at UC San Diego and, as a fluent speaker of Tagalog, will perform outreach in the Filipino community with lectures for doctors and nurses. Echoing Burns, she said many in the Filipino community arrive late to the hospital with advanced KD symptoms. "Most of the Filipino patients are being seen by Filipino doctors, so we presume that there is some lack of awareness in terms of the science and symptoms of KD," Fernandez explained. "We found out most of the patients are coming from Chula Vista."

The other specialist, Dr. Adriana Tremoulet, a fluent speaker of Spanish who is an assistant professor in the UC San Diego Department of Pediatrics and Rady Children's Hospital, will assist in reaching out to Latino families as well as running clinical trials for promising drugs. "I would say that at Rady Children's Hospital, close to a third of our patients speak Spanish," Tremoulet explained. "It happens that we have a very rich Latino population here in San Diego County, and Latinos are the second most commonly affected group here after Asians in general."

"Part of the excitement for me is spawning the next generation of researchers. It's very much on my mind that I need to train the next generation." —Dr. Jane Burns, pediatrician

Tremoulet has already initiated outreach with the local Spanish media. "I've done interviews with 'Wake Up San Diego,' the local morning show, and we're trying to do some segments with more of the nationals, like the equivalent of 'Good Morning America,' to be able to reach an even wider population." In addition, Tremoulet intends to network ➤

among colleagues in Latin America. A former colleague in Costa Rica is currently the Minister of Health there, so she has been able to get epidemiological data from him. "They also have diseases that look like KD, like measles. Once those are decreased in a population, you start to see more of the KD."

"...one of the projects I'm working on is trying to unravel the mechanism of IVIG in KD."

—Dr. Adriana Tremoulet

A main focus is to ensure that KD isn't confused with scarlet fever or measles and left untreated. "The mantra that Jane Burns and I have is if you don't think about KD, you won't diagnose it," Tremoulet said. "So it's very important for us to educate physicians and parents."

According to Burns, Tremoulet has been translating a slide show for physicians into Spanish.

"Once that's up and running and the wrinkles ironed out," Burns said, "then we'll be doing outreach, which we'd like to organize in Tijuana General Hospital, but also private clinics along the border. Because that's where a lot of our American-citizen Latino patients go to access healthcare. If they don't have insurance, it's less expensive and there are office hours in the evening. They know they'll get culturally competent care, even if it isn't as good as what they would get in the U.S. So those are the people we want to reach out to."

Burns and Tremoulet both stressed the importance of using first languages in educating the lay public as well as the medical profession. "It's important for families to be educated in Spanish for learning about KD, so we're working with some of the local pediatricians within the infrastructure of the public health department here," Tremoulet said. "It's important for families to take a role."

Sometimes friends and family know something that the physician hasn't thought of, so she encourages her Spanish-speaking population to be proactive with their physicians.

Significantly, because it's not part of their culture or experience to challenge the healthcare system, Latino families sometimes don't know how to advocate as effectively as possible for their children.

"There is a certain amount of working the system and saying to the doctor, 'I don't think this is just a virus. I don't think you're right.' That takes a lot for a parent to say to a physician," Burns said.

And it's not a lower-socioeconomic disease. "It has nothing to do with who gets the disease; it has to do with who gets diagnosed when they get the disease," Burns said.

As for IVIG-resistant cases, there currently isn't a standard of care. Doctors don't know the mechanism of IVIG in KD or why approximately 15 percent of children with KD don't respond to the first dose of IVIG. "Most people will give it thinking more is better, but we're not sure that's the right philosophy," Tremoulet said. In 2006, there was a spike in incidents of IVIG-resistant cases, which increased to 38.3 percent from the average of 20 percent. "There was an investigation of the actual IVIG that we were giving here at Rady by Baxter Pharmaceutical," she said. An evaluation revealed no reason for the spike. "But what it left us with was this concern that, wow, we have a population of children that really needs further therapy and there's been few studies done on what that therapy should be," she said. "The frightening part is that children who were IVIG resistant had a higher rate of cardiac abnormalities."

"So one of the projects I'm working on is trying to unravel the mechanism of IVIG in KD. The thought behind that is if we can figure out how it works, then we can make a better therapy. Maybe there's some way to concentrate the part of IVIG that is the important part of KD."

Fresh research is being done with Remicade®, an antibody that binds TNF-A, a pro-inflammatory cytokine elevated in the blood of children with KD. Tremoulet will be instrumental in the application of a clinical trial, Burns said. "The clinical trial that she is launching was funded by the FDA under the Orphan Disease Program, Rady Children's Hospital and UCSD—for all of us, this is a first. This is the first orphan disease grant that's ever been awarded in San Diego, so we're pretty excited about that. The funding is for four years and it's to do a randomized double-blind placebo controlled trial of infliximab [Remicade], plus IVIG versus IVIG plus placebo. So we won't know, the patients won't know, nobody will know until the end of the trial who got the additional primary therapy. But our thought is that IVIG works well for 80 percent of the patients, yet right now we don't have a way to find the 20 percent of patients for whom it doesn't work well." ■

Prescription for Romance

By Mark T. Haggard

"Wow, you look great," I proclaim to my wife as she strolls in the room where I'm waiting to be seen by the doctor.

She blushes and replies, "Oh, I just threw this on."

"No," I assure her, "you look fantastic." I then turn a lamp on and shine it on her, saying, "Particularly the way the light hits you. Wow!"

My wife's mouth forms a shy smile and she whispers, "Thank you."

"The kids are still at school," I mention, leaning across the table and kissing her.

"Hey, knock that off," Doctor Dodge calls as he enters the room.

"Can you give us a couple of minutes?"

"Mr. Haggard, this is a place of business. I can't have the two of you in here getting all googly-eyed every time you injure yourself."

"Doc," I reply, taking the examination lamp off of my wife and extinguishing it, "we have three sick kids at home; this is the only time we've been alone in the last four weeks."

Doctor Dodge tilts his head and looks at me cockeyed. "What are you in here for?"

"I just told you, a few minutes with my wife."

"Is that what you want me to report to your insurance? 'Needed a few minutes with his wife.'"

"Oh, I, uh, dropped a piece of sheet metal on my index finger at work." I extend my hand to him to inspect my injury.

"How many times?"

"Twice, actually. I dropped one on it two weeks ago, then I did it again today."

"You didn't get stitches the first time?" he asks with a furrowed brow.

"I didn't think I needed them."

Doctor Dodge turns toward a cart and says, "You needed them. You've got quite an infection at work there." He then looks at my wife and asks, "How are your kids?"

"Sinusitis is still running through the house."

"Do you need another Z Pak?"

"If you've got one."

"I'll get you one."

"And some albuterol for our nebulizer," she adds.

"Of course."

The doctor then turns and comes at me with two long Q-tips. "I need to see if there's any other infection in there." He jabs them into the open wound on my finger, then puts the swabs into a test tube. He glares at me and says, "OK, we'll check you for infection and get you scripts for a couple of antibiotics." Next, he looks at my wife and double-checks her order: "You want a Z Pak and albuterol for your nebulizer." His smile then turns quizzical as he asks, "Why are you looking at him that way?"

My wife, a bit jolted, blushes and replies, "He's so cute when he's in pain and bleeding all over the place."

I thank her for the comment. "Maybe I need to drop more pieces of metal on myself."

My wife giggles again and says, "You're just so cute." That prompts a roll of my eyes.

"All right," the doctor grumbles as he leaves. "I'll be back in five minutes."

I'm sure it's not just our story. How many times have you had sick kids and had to find creative ways to get time alone with your wife, your significant other, or just yourself? In this case, our trip to Doctor Dodge's office was one of our few chances for private time in the past month. Unfortunately, I had to nearly sever my index finger to get the date, but we make the most of every opportunity.

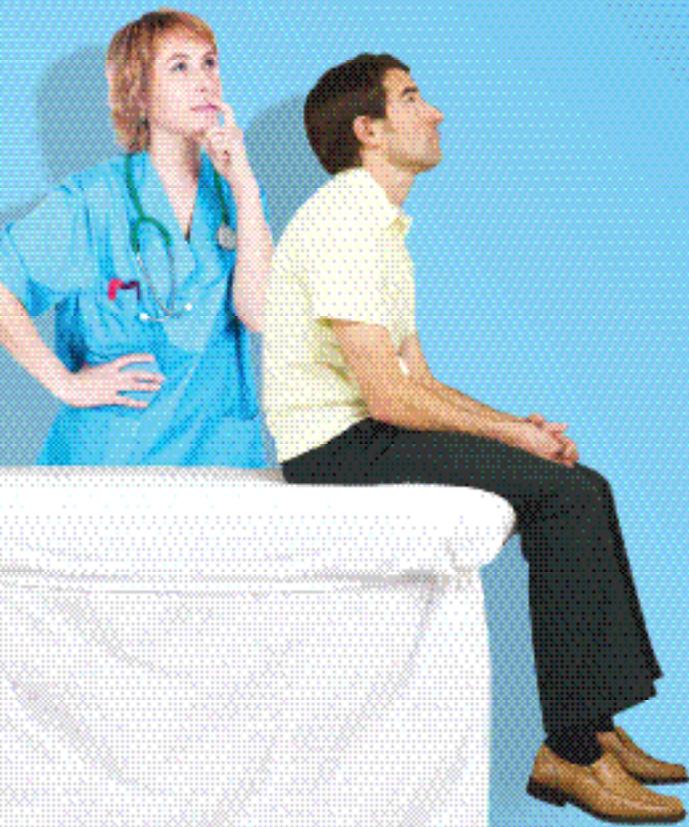
For example, we recently flew to Chicago for a date at another hospital. And we can write it off of our taxes!

Back at Doctor Dodge's office the door creaks open. The good doctor looks inside the room at me and repeats, with emphasis, "Five minutes."

"Oh, we'll be here," I say, smiling at my wife. ■



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ASK KRIS



Kris McFalls has two adult sons with chronic diseases who are treated with IG. Formerly a physical therapist assistant, Kris is *IG Living's* full-time patient advocate, and she is eager to find answers to your questions. Email them to editor@igliving.com. Your confidential information will not be used for any purpose but communicating with you about your questions.

Reader: My 4-year-old son has just been diagnosed with a mannose binding lectin (MBL) deficiency. We are going to Duke University for more tests. What should I expect at the visit? And if that is all that is wrong, how would it normally be treated?

Kris: I asked Terry Harville, MD, PhD, Medical Director of the Special Immunology Laboratory at the University of Arkansas for Medical Sciences, to comment.

Dr. Harville: This is a good question, without a simple answer.

There is quite an amount of controversy over what MBL deficiency means. Given that in some populations, as many as 30 percent of people may have MBL deficiency without discernible infection problems, some researchers are not sure that MBL deficiency, in isolation from other immune problems, is very meaningful. In some disease states, MBL deficiency has been reported to result in worsened disease (e.g., some data is suggestive that patients with cystic fibrosis and MBL deficiency have worse lung disease).

Another layer of controversy involves what value is used as the cutoff for normal, and how far below that value does one have to be in order to see detrimental effects.

Therefore, for values that are not too severely depressed, and if all other aspects of immune function have been tested and found to be normal, minimal "supportive" therapy may be used, or perhaps daily antibiotics (such as Amoxicillin) may be used, if recurrent infections have been problematic.

If other aspects of the immune system are not working appropriately, then attention to those is primary, and

what is done may offset effects of an MBL deficiency (again, daily antibiotics may be prescribed for treatment of the other immune problem).

If the MBL level is very low and recurrent sino-pulmonary infections are occurring, and no other aspect of the immune system is affected, daily antibiotics would likely be prescribed. If these are not providing satisfactory results, then IVIG may be prescribed (at least as a trial of treatment).

Therefore, depending on the severity of the infections and level of MBL deficiency, there may be prescribed no therapy, periodic treatment as required for an infection, daily antibiotics, and/or IVIG. And, if another immune problem is found, then therapy would be directed toward dealing with it first, where the side benefit may be therapy for MBL deficiency.

Alex: Are trough levels necessary for management of dosage? My case is managed on number of infections, how I feel, etc. Many other immune-deficient patients are managed by trough levels.

Kris: This question comes up often. In my experience, doctors' opinions vary on this subject. I've sent your question to Dr. Harville.

Dr. Harville: This is a great question. In the past, when lower dosing of IVIG, or even IMIG (intramuscular IG), was being used, it was important to help with the dosing to know what the "trough" value (serum IgG level) was prior to the next dose to have a sense about whether the dose being given was sufficient and whether the interval of dosing was correct. With the lower dosing given at ➤

that time, patients were somewhat more likely to have some breakthrough infections, and the trough values could be used to justify a greater, or more frequent, dosing.

With further availability of IVIG during the past few years, and further studies, it became apparent that a higher trough value was associated with fewer infections and complications, especially long-term problems with respiratory diseases. Therefore, many physicians like to see the trough IgG level at near-normal (i.e., about 1000 mg/dL), rather than greater than 400 mg/dL, as was common in the distant past.

How often is measurement needed? Assuming that the patient is hypogammaglobulinemic (i.e., IgG < 400 mg/dL) due to the immunodeficiency, trough determinations could be used to demonstrate achievement of better levels. For someone who is stable and infection-free, this means perhaps once or twice a year. Measurement may be needed more frequently in growing children. In an adult who is infection-free, after it is known that the trough is sufficiently high, further determinations may not be needed.

Another reason to measure values involves younger children. Some young children will have delayed maturation of immunity and may have low IgG and IgA values, for age, with recurrent infections, and poor recall antibody responses to immunization challenge. As they grow, they may overcome the maturation delay, and actually develop normal levels of IgG and IgA, as well as IgM. Therefore, following trough values and IgA levels in the younger child may indicate this process, and actually allow for the discontinuance of IVIG therapy.

For patients with dysgammaglobulinemia (i.e., initially normal, near-normal, or even high IgG levels), trough measurements may not have much validity.

Therefore, monitoring the health of the patient is necessary, including the extent of infections, but trough values also appear to be important, especially for maintaining sufficient IgG levels to help prevent long-term problems in patients with hypogammaglobulinemia.

Julie: I have been trying all different kinds of IG for CIDP and I still seem to be tired no matter how much sleep I get. Can the type of IG matter? Why did I have such great results for years and now it doesn't seem like

it does enough to pull me back up?

Kris: As always, please make sure to let your doctor know about your symptoms. Your doctor may want to check to make sure nothing else is going on. I sent your question to Dr. Scott Carlson of Rockwood Clinic in Spokane, Wash.

Dr. Carlson: Complaints of fatigue can be from many reasons. CIDP patients may have fatigue related to the duration of their disease and amount of nerve fiber loss. The IVIG treatment itself can cause temporary fatigue that typically doesn't last more than a few days after treatment. There is an important difference between fatigue and weakness. You and your doctor should be in agreement that the weakness in CIDP is responding favorably to treatment. Chronic fatigue with normal power/strength is likely from a different problem.

Susan: I have a question about how to find out what the hospital pharmacy is giving me. I had a bad reaction to my infusion (bad headache), and my doctor wants to pull the infusions altogether. I got him to agree to one more to see if it still happened, but am highly confused.

Kris: It is important to know what brand of immune globulin (IG) you are getting as well as the dose. At each infusion, the date, lot number, expiration date and dose should be recorded in a log book. In addition, you should record the length and rate of the infusion as well as any reactions you have, what those reactions are and how long they last. Any reactions should be reported to your doctor.

IG is a prescription drug. Federal and state regulations require all prescription drugs to be labeled. Among the details that should be on that label are drug name and dose. In addition, each bottle of IG usually comes with a pull-off sticker that will list the grams, expiration and lot number. Ask the provider for that sticker, which can then be affixed into your log book. The pharmacy that provided your IG will have a record of all your infusions. It is your right to have that information, and you should be able to get it with a simple call to the pharmacist who provided your IG. Don't hesitate to ask your provider for the information you need. ■

Resource Directory

For a more comprehensive list of resources, visit the Resources page at www.IGLiving.com.

Ataxia Telangiectasia (A-T)

Websites

- A-T Children's Project: www.atcp.org
- NINDS A-T Information Page: www.ninds.nih.gov/disorders/a_t/a-t.htm

Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

Websites

- GBS/CIDP Foundation International: www.gbs-cidp.org
- National Institute of Neurological Disorders and Stroke (NINDS) Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) Information Page www.ninds.nih.gov/disorders/cidp
- Neurology Muscular Dystrophy and Neuropathy Institute Illustration of a damaged myelin sheath on a nerve: www.beverlyhillsneurology.com/cidp

Online Peer Support

- The Neuropathy Association: www.neuropathy.org
- Barbara's CIDP/GBS Site (This is a personal website) www.geocities.com/HotSprings/Falls/3420

Evans Syndrome

Websites

- Office of Rare Diseases (catalog of online resources) <http://rarediseases.info.nih.gov/GARD/Disease.aspx?PageID=4&diseaseID=6389>
- Clinical Reference from eMedicine: www.emedicine.com/ped/topic721.htm

Online Peer Support

- Evans Syndrome Research and Support Group: www.evanssyndrome.net

Guillain-Barré Syndrome (GBS)

Websites and Chat Rooms

- The GBS/CIDP Foundation International, www.gbs-cidp.org, has 23,000 members in 160 chapters on five continents. (610) 667-0131
- The GBS/CIDP Foundation International Discussion Forums provide the opportunity to talk to other GBS patients and learn more about ways to manage the illness: www.gbs-cidp.org/forums.
- Miller Fisher Syndrome, considered to be a variant of GBS, is explained on the National Institute of Neurological Disorders and Stroke, NINDS Miller Fisher Syndrome Information Page: www.ninds.nih.gov/disorders/miller_fisher/miller_fisher.htm.

Online Pamphlets

- The National Institute of Neurological Disorders and Stroke has a GBS Fact Sheet at www.ninds.nih.gov/disorders/gbs/detail_gbs.htm.
- The Mayo Clinic has an overview of Guillain-Barré Syndrome at www.mayoclinic.com/health/guillain-barré-syndrome/DS00413.
- The National Institute of Neurological Disorders and Stroke has an information page about CIDP: www.ninds.nih.gov/disorders/cidp/cidp.htm.

Online Peer Support

- GBS & CIDP Discussion Forum – UK Bulletin Board – For Ireland and England www.gbs.org.uk/cgi-bin/ikonboard3/ikonboard.cgi
- GBS Support Group and Chat Room, UK www.jsmarcussen.com/gbs/uk/chat.htm

- GBS Foundation Discussion Forums: www.guillain-barre.com/forums
- Yahoo Support Group Discussion Board http://health.groups.yahoo.com/group/GBS_CIDP

Books and Articles

- "A Handbook for Care Givers," by Helen Rummelsburg, gives an account of caring for her husband and offers helpful hints for patients and caregivers. Available at the GBS website bookstore at www.gbsfi.com.
- "Bed Number Ten," by Sue Baier, provides a view of long-term care through the eyes of a patient totally paralyzed with GBS.
- "Caring for a Child With GBS," by Patricia Schardt, is a short guide written by a mother of a child with CIDP. Available at the GBS website bookstore at www.gbsfi.com.
- "No Laughing Matter," by Joseph Heller (the best-selling author of Catch-22), who teamed up with Speed Vogel, his best friend, to describe Heller's battle with and triumph over GBS.

ITP (Idiopathic Thrombocytopenic Purpura)

Websites

- ITP Support Association, UK: www.itpsupport.org.uk
- Platelet Disorder Support Association: www.pdsa.org
- National Heart, Lung and Blood Institute www.nhlbi.nih.gov/health/dci/Diseases/itp/ITP_Whats.html

Online References

- Idiopathic thrombocytopenic purpura www.mayoclinic.com/health/idiopathic-thrombocytopenic-purpura/DS00844
- Idiopathic Thrombocytopenic Purpura: Michael A. Silverman, MD www.emedicine.com/EMERG/topic282.htm
- Immune Thrombocytopenia: Current Understanding and Future Research, Robert S. Mocharnuk, MD www.medscape.com/viewarticle/459249
- ITP: Idiopathic Thrombocytopenic Purpura: <http://familydoctor.org/113.xml>

Kawasaki Disease

Websites

- Kawasaki Disease Foundation: www.kdfoundation.org
PO Box 45 • Boxford, MA 01921
Tel: (978) 356-2070 • Fax: (978) 356-2079 • Email: info@kdfoundation.org
- Kids Health discusses Kawasaki disease www.kidshealth.org/parent/medical/heart/kawasaki.html
- Overview from the American Heart Association focuses on how the disease affects the heart www.americanheart.org/presenter.jhtml?identifier=4634

Mitochondrial Disease

Websites

- United Mitochondrial Disease Foundation promotes research and education for the diagnosis, treatment and cure of mitochondrial disorders and provides support to affected individuals and families. www.umdf.org
- The Cleveland Clinic website provides many articles when searched by the topic, "mitochondrial disease." www.clevelandclinic.org/health

- The National Institute of Neurological Disorders and Stroke provides an informative Mitochondrial Myopathies Information Page. www.ninds.nih.gov/disorders/mitochondrial_myopathy/mitochondrial_myopathy.htm

- Maddy's MG Support: <http://health.groups.yahoo.com/group/maddysmgssupport>
- Autoimmune Information Network Inc.: www.aininc.org
PO Box 4121 • Brick, NJ 08723 • (877) 246-4900 • Email: autoimmunehelp@aol.com

Multifocal Motor Neuropathy (MMN)

Websites

- National Institute of Neurological Disorders and Strokes (NINDS) provides a Multifocal Motor Neuropathy Information Page: www.ninds.nih.gov/disorders/multifocal_neuropathy/multifocal_neuropathy.htm
- Multifocal Motor Neuropathy Center at Johns Hopkins Department of Neurology www.neuro.jhmi.edu/MMN/index.html
- The Neuromuscular Center at Washington University in St. Louis, Mo. Neuromuscular Home Page www.neuro.wustl.edu/neuromuscular
- The Neuropathy Association is dedicated to helping those with conditions affecting peripheral nerves. www.neuropathy.org

Multiple Sclerosis (MS)

Websites and Chat Rooms

- The mission of the National Multiple Sclerosis Society is to end the devastating effects of MS. www.nationalmssociety.org/
- All About Multiple Sclerosis provides accurate and comprehensive medical information about MS written in plain English by people living with the disease and its symptoms. www.mult-sclerosis.org/index.html
- Multiple Sclerosis Foundation works for a brighter tomorrow for those affected by MS. www.msfacts.org
- Multiple Sclerosis Association of America seeks to enrich the quality of life for individuals with multiple sclerosis. www.msaa.com
- MSWorld's Chat and Message Board features patients helping patients. www.msworld.org

Online Peer Support

- Friends with MS: www.FriendsWithMS.com
Forum: <http://health.groups.yahoo.com/group/FriendsWithMS>
- My MSViews: www.mymviews.org
Forum: http://health.groups.yahoo.com/group/MSViews_Multiple_Sclerosis
- MS Support Group: <http://health.groups.yahoo.com/group/mscured>
- The MS Carousel—A Place to Meet With People Who Understand MS!
<http://health.groups.yahoo.com/group/themscarousel>

Myasthenia Gravis (MG)

Websites and Chat Rooms

- The Myasthenia Gravis Foundation of America (MGFA) is the only national volunteer health agency dedicated solely to the fight against (MG). www.myasthenia.org
- Myasthenia Gravis Fact Sheet prepared by National Institute of Neurological Disorders and Strokes. www.ninds.nih.gov/disorders/myasthenia_gravis/myasthenia_gravis.htm
- Mayo Clinic's overview of myasthenia gravis: www.mayoclinic.com/health/myasthenia-gravis/DS00375

Online Peer Support

- MGFA's Forum: <http://health.groups.yahoo.com/group/MGnet>
- Bette's Myasthenia Gravis Support: <http://health.groups.yahoo.com/group/bettesmyastheniagravisupport>

Myositis

Websites

 <p>THE MYOSITIS ASSOCIATION</p>	<p>The mission of The Myositis Association, www.myositis.org, is to find a cure for inflammatory and other related myopathies, while serving those affected by these diseases. (202) 887-0088</p>
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- International Myositis Assessment and Clinical Studies Group is a coalition of healthcare providers and researchers with global approaches to improved treatments and understanding of myositis: <https://dir-apps.niehs.nih.gov/imacs/index.cfm?action=home.main>
- The Cure JM Foundation was created specifically to find a cure for Juvenile Myositis (JM), while also providing support and information for families affected by JM. <http://curejm.com>
- Johns Hopkins Myositis Center is a new patient treatment center that brings the expertise of rheumatologists and neurologists into a single clinic for patients with inflammatory (autoimmune) and toxic (drug induced) muscle conditions. www.hopkinsmedicine.org/rheumatology/clinics/myositis_center.html

Online Peer Support

- Juvenile Myositis Family Support Network: www.curejm.com/family_support/index.htm
- Myositis Association Community Forum: www.myositis.org
- Myositis Support Group: www.myositisupportgroup.org
- Myositis Support Group UK: www.myositis.org.uk
- Yahoo Myositis Support Group Discussion Board: <http://health.groups.yahoo.com/group/OurMyositis>
- The California Myositis Symposium held in 2005 was captured on DVD. It contains information about polymyositis, dermatomyositis and inclusion body myositis, including doctors' discussions and detailed slides and explanations of muscle biopsies, skin rash, and tools used to diagnose these diseases. Other presentations offer valuable lessons in maintaining a positive attitude, exercises for physical therapy and innovative tools to aid in everyday activities. The DVD is available at no charge by sending an email to Richard Gay at rgay@socal.rr.com.

Books and Articles

- "Coping With a Myositis Disease," by James R. Kilpatrick, is written by myositis patients telling their personal stories.
- "Inclusion-Body Myositis and Myopathies," by Valerie Askanas (Editor), Georges Serratrice (Editor) and W. King Engel (Editor), is devoted to discussing the two forms of inclusion-body myositis.
- "Living With Myositis," edited by Jenny Fenton, is an accessible, realistic and sympathetic guide to facts, feelings and future hopes.
- "Myositis—A Medical Dictionary, Bibliography, and Annotated Research Guide to Internet References," by ICON Health Publications, is a three-in-one reference book: a complete dictionary of terms relating to myositis, a list of bibliographic citations about the disorder and a guide to Internet resources.
- "Myositis and You: A Guide to Juvenile Dermatomyositis for Patients, Families, and Healthcare Providers," an indispensable resource for families of children with myositis and their healthcare teams, is available at www.myositis.org.

- "The Official Patient's Sourcebook on Inclusion Body Myositis," by James N. Parker (Editor) and Philip M. Parker (Editor), is a reference manual for self-directed patient research.

Pemphigus and Pemphigoid

Websites

- The International Pemphigus and Pemphigoid Foundation provides information and support to people living with the autoimmune diseases. www.pemphigus.org
- Information from the National Institutes of Health: www.niams.nih.gov/hi/topics/pemphigus/pemphigus.htm
www.nlm.nih.gov/medlineplus/ency/article/000882.htm
- Rare disease report: <http://rarediseases.about.com/od/rarediseasesp/a/pemphigus05.htm>

Peripheral Neuropathy (PN)

Websites



The Neuropathy Association, www.neuropathy.org, is devoted exclusively to all types of neuropathy, which affects upwards of 20 million Americans. The Association's mission is to increase public awareness of the nature and extent of PN, facilitate information exchanges about the disease, advocate the need for early intervention and support research into the causes and treatment of neuropathies. (212) 692-0662

- To learn about PN, how it is classified, the symptoms, causes and treatments, see the Peripheral Neuropathy Fact Sheet available at www.ninds.nih.gov/disorders/peripheralneuropathy/peripheralneuropathy.htm.
- The Neuropathy Action Foundation, at www.neuropathyaction.org, educates, empowers and informs patients and physicians about neuropathy.

Support Groups

- Click on the Member Services tab of the website, www.neuropathy.org, for listings of support groups across the nation.

Online Peer Support

- Calgary Neuropathy Support Group: www.calgarypn.org
- MSN Support Group Discussion Board: <http://groups.msn.com/PNPARTNERS>
- The Neuropathy Association Bulletin Board: www.neuropathy.org
- Yahoo Neuropathy Support Group Discussion Board: <http://health.groups.yahoo.com/group/neuropathy>
- Yahoo Support Group – Australia Discussion Board: <http://au.groups.yahoo.com/group/LifeWithPN>

Books and Articles

- "If You're Having a Crummy Day, Brush Off the Crumbs!," by Mims Cushing, is a how-to book that offers more than 75 ways to help people get through the days when neuropathy (or other ailments) is particularly difficult.
- "Medifocus Guide to Peripheral Neuropathy," is a guide to current and relevant PN research, organized into categories for easy reading.
- "Numb Toes and Aching Soles," by John Senneff, discusses the symptoms, causes, tests, treatments and coping strategies for peripheral neuropathy.
- "Numb Toes and Other Woes," by John Senneff, is the second in a series of three books. It focuses on clinical findings and treatment strategies for PN.
- "Nutrients for Neuropathy," by John Senneff, the third in the Numb Toes series, is

- focused exclusively on nutrient supplementation as a means for managing PN.
- "Peripheral Neuropathy: When the Numbness, Weakness, and Pain Won't Stop" by Dr. Norman Latov, MD, PhD, published 2007, Weill Medical College, Cornell University, provides practical information on all the neuropathies, causes and treatments.

Primary Immune Deficiency Disease (PID)

Websites and Chat Rooms



The Immune Deficiency Foundation (IDF), www.primaryimmune.org, is dedicated to improving the diagnosis and treatment of PID through research and education. (800) 296-4433

Jeffrey Modell Foundation

The Jeffrey Modell Foundation, www.info4pi.org, is dedicated to early and precise diagnosis, meaningful treatments and, ultimately, cures for primary immunodeficiency. (212) 819-0200

- The National Institute of Child Health and Human Development (NICHD), www.nichd.nih.gov, is part of the National Institutes of Health. Go to the "Health Information and Media" tab on the website and do a search under "primary immunodeficiency."
- The American Academy of Allergy, Asthma & Immunology, www.aaaai.org, has a helpful Q&A section on its website, with resources and tips for those with various immune deficiencies.
- The Michigan Immunodeficiency Foundation, www.midf.org, seeks to improve the quality of life for Michigan residents affected by PID.
- The International Patient Organization for Primary Immunodeficiencies (IPOPI), www.ipopi.org, promotes the worldwide improvement in the care and treatment of PID patients.
- To connect to a PID message board, go to www.info4pi.org.
- To chat with peers on IDF's Forum, go to www.primaryimmune.org/forums/forum_intro.htm.
- Chat with parents of children affected by primary immune deficiency at <http://health.groups.yahoo.com/group/PedPID>.
- Chat with peers with PID at <http://health.groups.yahoo.com/group/PIDsupport>.
- A group of family and friends of patients with primary immune deficiencies maintains a nonprofit network in the New England area: www.nepin.org
- Baxter's website, www.immunedisease.com, offers in-depth information on immunology, PID and treatment with intravenous immune globulin. Click on "European" to see SCIG information.
- Rainbow Allergy-Immunology, www.rainbowbabies.org/immunology, provides comprehensive diagnostic, therapeutic and consultative services for children and adults with immunologic diseases. For patient information about subcutaneous IG therapy: www.rainbowbabies.org/subcu.
- Support for those with PID in the New England area: www.teamhope.info

Online Pamphlets and Education

- Go to the National Institute of Allergy and Infectious Diseases site at www.niaid.nih.gov and search for "primary immune deficiency."
- "Understanding the Immune System: How It Works," by the U.S. Department of Health and Human Services, is found at www3.niaid.nih.gov/healthscience/healthtopics/immuneSystem/PDF/theImmuneSystem.pdf

- “NIAID Initiative Addresses Primary Immune Deficiency Diseases by National Institute of Allergy and Infectious Diseases” is located at <http://www3.niaid.nih.gov/news/newsreleases/2003/pirc.htm>
- The “Immundeficiency in Pediatrics” program (PREP®) audio series is a new pediatrician education program that can be obtained by contacting the American Academy of Pediatrics at (866) 843-2271 or visiting www.prepaudio.org.

Online Peer Support

- Chat with parents of children affected by PIDD <http://health.groups.yahoo.com/group/PedPID/>
- Chat with peers with PIDD: <http://health.groups.yahoo.com/group/PIDsupport/>
- Immune Deficiency Foundation Forum www.primaryimmune.org/forums/forum_intro.htm
- Jeffrey Modell Foundation Message Board: www.info4pi.org
- Rhode Island peer group <http://health.groups.yahoo.com/group/RhodelslandPID/>

Books and Articles

- “21st Century Complete Medical Guide to Primary Immune Deficiency, Severe Combined Immunodeficiency (SCID), Chronic Granulomatous Disease (CGD), for Patients and Physicians,” by PM Medical Health News, contains federal government clinical data and practical information for patients and physicians.

Scleroderma

Websites

- Johns Hopkins Medicine Scleroderma Center: scleroderma.jhmi.edu
- Scleroderma Research Foundation: www.srfcure.org
- Scleroderma Foundation: www.scleroderma.org

Online Peer Support

- Educating instead of medicating CureZone.com <http://curezone.com/forums/f.asp?f=404>
- International Scleroderma Network: www.sclero.org/support/forums/a-to-z.html

Stiff-Person Syndrome (SPS)

Websites

- American Autoimmune Related Diseases Association Inc., www.aarda.org, is the only national organization dedicated to addressing the problem of autoimmunity. (800) 598-4668 aarda@aarda.org
- Autoimmune Information Network Inc., www.aininc.org, helps patients and family cope with the disabling effects of autoimmune diseases. (732) 262-0450 autoimmunehelp@aol.com
- National Association for Rare Disorders (NORD), www.rarediseases.org, promote awareness of rare diseases and the need for research. (800) 999-6673 orphan@rarediseases.org
- National Institute of Neurological Disorders and Stroke (NINDS), www.ninds.nih.gov, offers treatment, diagnosis and research information for rare diseases. (800) 352-9424 braininfo@ninds.nih.gov
- Mayo Clinic — Stiff-Person Syndrome: Can it be treated? www.mayoclinic.com/health/stiff-person-syndrome/AN01377
- Diagnosed with SPS in 1994, Debra Kemery recounts her experience and offers practical information about coping with the disease at www.stiffman.org.

Books and Articles

- “A Flower Grows in Stone: The Diary of a Life in Progress,” a firsthand account of her struggle with Stiff-Person/Moersch Woltman Syndrome, is written by

first-time author Anisah Hassan. Available from Llumina Press, Ingram, and Baker & Taylor, www.llumina.com.

General Resources

Product Information

- Influenza and the influenza vaccine www.cdc.gov/flu or call (800) CDC-INFO: (800) 232-4636
- IVIG Carimune NF www.carimune.com
- IVIG Flebogamma www.grifolsusa.com/pdfs/flebo_14Jun05.pdf
- IVIG Gammagard Liquid www.gammagardliquid.com
- IVIG Gammagard S/D www.immunedisease.com/US/therapies/gammagard/index.html
- IVIG Gamunex www.gamunex.com
- IVIG Octagam www.octapharma.com/corporate/03_products_and_therapeutic_areas/01_immunoglobulin_product_line/03_octagam.php
- IVIG Privigen www.privigen.com
- SCIG (subcutaneous immune globulin) Vivaglobin www.vivaglobin.com

Other Organizations

- Alliance for Plasma Therapies is a unified, powerful voice of patient organizations, healthcare providers and industry to advocate for fair access to plasma therapies. www.plasmaalliance.org
- For suggestions on how to deal with the medical and emotional impact of caring for an ill child, go to www.kidshealth.org/parent/system/ill/seriously_ill.html.
- The National Committee for Quality Assurance provides free access to detailed report cards on health plans, clinical performance, member satisfaction, access to care and overall quality on its Health Plan Report Cards Online at www.ncqa.org.
- The nonprofit Patient Advocate Foundation, www.patientadvocate.org, seeks to assure patient access to care, maintenance of employment and financial stability. (800) 532-5274

	<p>The nonprofit Patient Services Incorporated, www.uneedpsi.org, specializes in health insurance premium, pharmacy co-payment and co-payment waiver assistance for people with chronic illnesses. (800) 366-7741</p>
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- WebMD, www.webmd.com, is a handy medical reference that helps consumers take an active role in managing their health by providing objective healthcare and lifestyle information.
- For a pediatrician’s guide to your child’s health and safety, visit www.keepkidshealthy.com.
- The National Organization for Rare Diseases, at www.rarediseases.org, provides links to numerous other organizations that have disease-specific support groups and virtual communities for patients and caregivers.
- American Autoimmune Related Diseases Association (AARDA) www.aarda.org brings national focus to autoimmunity through research, education and patient services. (800) 598-4668
- Band-Aides and Blackboards, www.lehman.cuny.edu/faculty/fleitas/bandaides, started by a nurse working on her dissertation, focuses on children with chronic illness.
- American Chronic Pain Association (ACPA) was founded in 1980 to provide resources for people coping with chronic pain. www.theacpa.org

Education and Disability Resources

- Continuation of Health Coverage—Consolidated Omnibus Budget Reconciliation

- Act (COBRA): www.dol.gov/dol/topic/health-plans/cobra.htm
- Social Security: www.ssa.gov/disability
- California State Disability Insurance (SDI): www.edd.ca.gov
(Please note that each state has a different disability program.)
- IDEA 2004 Resources: www.ed.gov/policy/speced/guid/idea/idea2004.html
News and information on the Individuals with Disabilities Education Improvement Act of 2004 (IDEA), the nation's law that works to improve results for infants, toddlers, children and youth with disabilities.
- The National Disabilities Rights Network: www.ndrn.org. This website offers a search tool to find resources in your state to assist with school rights and advocacy.
- U.S. Department of Education Website: www.ed.gov.
This website, a U.S. federal government website, offers a parents section that has a subsection titled "My Child's Special Needs" that can be most helpful.
- U.S. Department of Health and Human Services, Office of Civil Rights, www.hhs.gov/ocr/504.html, spells out your rights under Section 504 of the Rehabilitation Act.
- Wrightslaw: www.wrightslaw.com. Parents, educators, advocates, and attorneys come to Wrightslaw for accurate, reliable information about special education law and advocacy for children with disabilities.
- The Americans with Disabilities Act of 1990
Provides protection for people with disabilities from certain types of discrimination and requires employers to provide some accommodations of the disability. For more information, visit www.usdoj.gov/crt/ada/adahom1.htm.

Additional Reading

- "Anatomy of an Illness," by Norman Cousins, is a best-seller about overcoming illness and the triumph of the human spirit. The premise is that the human mind is capable of promoting the body's capacity for combating illness and healing itself even when faced with a seemingly hopeless medical predicament.
- "A Parent's Guide to Special Education: Insider Advice on How to Navigate the System and Help Your Child Succeed," by Linda Wilmschurst and Alan W. Brue, is available on Amazon.com.
- "The Confused Consumer's Guide to Choosing a Health Care Plan: Everything You Need to Know," by Martin Gottlieb, helps consumers through the confusing maze of choosing a healthcare plan.
- "The Everyday Guide to Special Education Law," by Randy Chapman, Esq., makes the law accessible to parents so they can be more effective advocates for their children. Available at www.thelegalcenter.org/thelegalcenter-cgi-bin/shop?item=15.
- "Living Creatively With Chronic Illness: Developing Skills for Transcending the Loss, Pain and Frustration," by Eugenia G. Wheeler, is a self-help book specifically designed to help the chronically ill, their families, friends, counselors, medical personnel and the clergy.
- "Managing Pain Before It Manages You," by Dr. Margaret A. Caudill, is a wellspring of wisdom and practical approaches that can help transform your life and your pain.
- "Not Dead Yet: A Long Strange Trip From Doctor to Patient and Back Again," by Dr. Robert Buckman, an oncologist and comic writer, is a witty account of his life as a doctor and autoimmune disease survivor.
- "Pride and the Daily Marathon," by Jonathan Cole, describes how Ian Waterman was suddenly struck down at work by a rare neurological illness that deprived him of all sensation below the neck, and how he reclaimed a life of full mobility.
- "Pronoia Is the Antidote for Paranoia," by Rob Breznsny, explores the best way to attract the blessings that the world is conspiring to give us.
- "When You're Ill or Incapacitated" comprises one-half the booklet it shares with "When You're the Caregiver," both written by James E. Miller, suggesting 12 things to remember or do in each role.

- "YOU the Smart Patient: An Insider's Handbook for Getting the Best Treatment," by Michael F. Roizen, MD, and Mehmet C. Oz, MD, with the Joint Commission on Accreditation of Healthcare Organizations, shows you how to tackle such healthcare decisions as picking the best doctors and hospitals for you, knowing when to get a second opinion, and more.

IG Manufacturer Websites

- Baxter: www.baxter.com
- CSL Behring: www.cslbehring.com
- Grifols: www.grifolsusa.com
- Octapharma: www.octapharma.com
- Talecris: www.talecris.com

Pump and Infusion Sets Websites

- EMED Corporation: www.safetymedicalproducts.com
- Graseby Marcal Medical: www.marcalmedical.com
- Intra Pump Infusion Systems: www.intrapump.com
- Repro Med Systems, Inc: www.repro-med.com
- Norfolk Medical: www.norfolkmedical.com

Medical Research Studies

- On the official website for the National Institutes of Health patient recruitment program, you'll find summaries and criteria for studies as well as be able to search for studies being conducted for a specific disease or disorder. <http://clinicalstudies.info.nih.gov>
- This website provides a wealth of information about clinical trials and volunteer participation. It gives you the ability to specify the disorder you are interested in, the location of the study, and the medication names or research protocols. www.centerwatch.com
- This site has a registration form to request that you be notified about recruitment for future studies. www.clinicaltrials.com
- WebMD has a service that matches volunteers with trials. There is an online questionnaire to complete and you will be notified via email of upcoming studies that match the criteria of your questionnaire. You can also search for specific studies. www.webmd.com

Food Allergies

- Allergic Disorders: Promoting Best Practice www.theallergyreport.com/reportindex.html
- American Partnership for Eosinophilic Disorders: www.apfed.org
- National Institutes of Health, National Institute of Allergy and Infectious Diseases (2004). Food Allergy: An Overview (NIH Publication No. 04-5518). www.niaid.nih.gov/publications/pdf/foodallergy.pdf
- Food Allergy and Anaphylaxis Network: (800) 929-4040 www.foodallergy.org
- World Allergy Organization: www.worldallergy.org
- Sicherer, S.H. (2006). "The Complete Peanut Allergy Handbook: Understanding and Managing Your Child's Food Allergies," Johns Hopkins Press.

Reading Just for Kids

- "Germs Make Me Sick," by Melvin Berger, explains with colorful illustrations how your body fights germs.
- "Little Tree: A Story for Children With Serious Medical Illness," by Joyce C. Mills, is a comforting fable for young children facing serious life challenges.
- "My IVIG Book," written from a 3-year-old's perspective about his infusions, comes with a kit for other children to create their own personalized book. Free from Baxter at www.immunedisease.com/US.
- "Our Immune System," enables children who are immune deficient and their families to explore together the immune system. Available from the Immune Deficiency Foundation at www.primaryimmune.org.

Have something to add to these pages? Please send your suggestions for additions to the IG Living Resource Directory to editor@IGLiving.com. In this case, more is indeed better!