

The Clinician's Purchase Decision and cGMPs – Cornerstones of Quality Assurance

Part One of Two

Rick Liva, N.D., R.Ph.

In this installment of the Quality Assurance Advocate, I intend to highlight the role of the clinicians in providing their patients, family members, and friends with high-quality nutritional supplements and natural products. From the outset it is crucial to define “high quality.” It describes a product that has had its authenticity verified, meets its potency claims, and is not contaminated or contains a minimal, acceptable amount of contaminant(s).

I'll also highlight the importance of current Good Manufacturing Practices (cGMPs) and discuss how they ensure quality. The background and explanation of cGMPs is long and involved, so there will be a Part II to this discussion. Part II will address how a clinician can scrutinize manufacturers to verify that they are following the US Food and Drug Administration's (FDA's) proposed dietary supplement cGMPs and that they are providing high-quality products. I'll give you 7 very detailed questions that you can ask a supplier. I'll also provide details about the evidence they must provide to successfully answer the questions. Their answers will serve to verify or discount their quality assurance claims.

Before I launch into the details, I would like to acknowledge those few nutritional supplement-manufacturing companies that do most or all of what I will detail regarding quality verification. I commend them for their diligence and commitment. Most of this industry is not to be trusted to provide high-quality products, professional products companies included.

The Buying Decision – A Critical Factor

I assert that most clinicians do little or nothing to assess and verify product quality before they chose a supplier. We often base our buying decisions on what other clinicians, educators, and mentors have told us. We may like the salesperson, believe the company's quality story, be influenced by their marketing claims, or recognize that the company has good clinical education that ties their products to the education piece. In essence, usually everything but evidence of quality verification drives our decision. It is critical to verify quality claims. To verify is to prove the truth of something by presentation of evidence. Clinicians don't usually ask for that evidence to verify that a manufacturer is providing high-quality products. Why not?, we are too busy, we assume companies are providing the quality we seek, we don't know how to separate the marketing hype from the real evidence, and lastly, we fall back on a refrain I have heard many times: “I get good clinical results.” While this may be true it does not address the issue of contaminated products. It is possible to get a good clinical result with a product that has high or unacceptable levels of heavy metals, solvent residue, aflatoxins, or herbicides and pesticides.

This is a huge missing piece, and it is a great dishonor to the wonderful practice of natural medicine. Clinicians have a charge and responsibility to fill the gap. I'll help you learn how and give you resources to do so. After all, we prescribe these products to help our patients, friends, and loved ones. Do they deserve any less?

Let me put this in some perspective. Over the last several months in my role as Quality Assurance Director, I have rejected several raw materials or was forced to add large manufacturing overages to account for subpotencies. I rejected Ginkgo biloba extract that had

high levels of lead and returned it to our supplier. When we asked why they did not test for heavy metals, we were told that they trusted” their supplier and skipped a heavy metals analysis. I rejected product that claimed to be Nettle leaf extract because it could not pass testing to ensure it was *Urtica dioica*. The same thing happened with a batch of wild yam extract that could not be verified to be *Dioscorea villosa*. A batch of American ginseng was rejected because it contained an illegal fungicide. The same thing happened with a batch of *Valerian officinalis*. Curcumin extract claimed to be 90% pure but tested out at 79%. *Bifidobacter lactis* was 70% of its CFU/g claim. Feverfew claimed to be 0.7% parthenolide but tested out at 0.564%. I could go on, but you get the point. All of these products came from well-known, reputable raw material suppliers. What I sent back was sold to somebody else who does not perform the level of quality assurance verification I am comfortable with. But my comfort level has nothing to do with this issue. The level of quality assurance I seek is what we all should demand and require. Remember, we recommend these products to our loved ones, friends, and patients.

How many times does this scenario repeat itself in this industry every day?. Quite a few, I suspect. Our buying decisions as clinicians should be based on our being certain after a thorough, objective examination of evidence of high quality, and not on subjective experience and assumption. The first thing I learned in clinical diagnosis was “you only find what you look for.” It is time for all clinicians to step up to the plate and look. We must demand to see the evidence that supports the marketing claims of high-quality products. If we choose not to do so, we must realize that we could be prescribing subpotent, inauthentic, contaminated product. It would be tantamount to playing Russian roulette.

cGMP Background and Intent

The Dietary Supplement Health and Education Act (DSHEA) was signed into law on October 25, 1994. The DSHEA, among other things, amended the Federal Food, Drug, and Cosmetic Act to establish good manufacturing practices for dietary supplements. Dietary supplement GMPs were to be modeled after cGMP regulations for food. In the late 1990s, the FDA wrote proposed dietary supplement manufacturing GMPs and published them in the Federal Register. They were never officially adopted and therefore were never enforced. In March of 2003, the FDA rewrote the dietary supplement manufacturing GMPs and asked for industry comments. This newer set of GMPs is a proposed version that has not been officially adopted, and we do not know when it will be adopted and enforced. The proposed rule would establish the minimum cGMPs necessary to ensure that if you engage in activities related to manufacturing, packaging, or holding dietary ingredients or dietary supplements, you do so in a manner that will not adulterate and misbrand such dietary ingredients or dietary supplements. The provisions would require manufacturers to evaluate the identity (ie, the authenticity), purity (ie, freedom from contamination), quality, strength (ie, does it meet a potency claim?), and composition (ie, is the product uniform and consistent from capsule to capsule and batch to batch?) of their dietary ingredients and dietary supplements.

Until the FDA adopts the latest version of GMPs, dietary supplement manufacturers are supposed to be following the food GMPs, which detail many good practices but are not sufficient for dietary supplement manufacturing. I believe that the best option for manufacturers would be to comply with the proposed GMP rules now and not wait until the FDA’s official adoption. Note: The FDA, through its own investigations, has found that most dietary supplement manufacturers do not follow any GMP regulations.

Why Are cGMPs Needed?

cGMP regulations for dietary ingredients and dietary supplements are necessary to promote and protect public health and safety. Unlike other major product areas, there are no FDA regulations specific to dietary ingredients and dietary supplements that establish a minimum standard of practice for manufacturing, packaging, or holding. The absence of minimum standards has contributed to the adulteration and misbranding of dietary ingredients and dietary supplements by contaminants and because manufacturers do not set and meet specifications for their products, including specifications for identity, purity, quality, strength, and composition.

Having finalized cGMPs would

- establish a level playing field for industry, which would help prevent irresponsible firms from making and selling adulterated products;
- ensure that consumers get dietary supplements with the strength and the purity that consumers expect;
- ensure that every dietary supplement on the market has the safety, identity, purity, quality, and strength it purports in the label to possess;
- require that manufacturers have documented evidence that their manufacturing process is under control on a consistent basis;
- require manufacturers to test dietary ingredients, particularly imported botanicals, for heavy metals, pesticides, and industrial contaminants;
- require expiration dating and testing for dissolution; and
- require that companies report adverse reactions.

Additionally, cGMPs should

- include guidance on testing for ingredient identity and adulteration with toxic substances,
- include ingredient identity testing and other testing, and
- ensure that dietary supplements are produced using a master formula procedure and produced in a sanitary facility.

After practicing in a cGMP manufacturing environment for the past several years, I am absolutely convinced it is critical to ensure the manufacture of high-quality products. I encourage clinicians to require their suppliers to follow cGMPs and have some sort of reputable independent audit and certification that proves they do so. Even when the FDA officially adopts dietary supplement cGMPs, they will have *very* limited means to enforce the rules. Therefore, the independent audit becomes our evidence of ensuring compliance with cGMPs.

Verifiable quality assurance has 3 legs: an unwavering commitment to continuous improvement, following cGMPs, and scientifically valid and ethical laboratory testing and analysis of raw materials and finished products. The lab-testing piece is the weakest link, but that's a topic for a future column of the Quality Assurance Advocate.

Rick Liva, RPh, ND, graduated from Temple University School of Pharmacy in 1975 and National College of Naturopathic Medicine in 1982. He is the managing physician at the Connecticut Center For Health, located in Middletown and West Hartford, CT. Dr. Liva is a founding member of the American Association of Naturopathic Physicians and past president of the Connecticut Society of Naturopathic Physicians. He has been involved in dietary supplement

manufacturing since 1985 and is the president, CEO and director of Quality Control and Quality Assurance at Vital Nutrients, certified by the NSF International and the Natural Products Association for Current Good Manufacturing Practices.