

[Home \(../../\) » An Argument for Change](#)

An Argument for Change

By Bikash Chatterjee, President, Pharmatech Associates

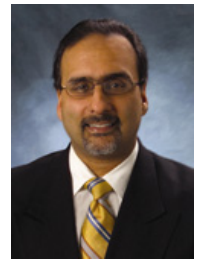
PharmaManufacturing.com

Keywords: FDA, "risk-based approach", "cGMP guidelines" and PAT

FDA has validated risk-based approaches as best practice. The ball is back in our (manufacturers') court.

March's article, "[FDA Sets Its House in Order,](#)" (<http://www.pharmamanufacturing.com/articles/2007/055.html>) detailed the agency's efforts to transform itself into a more scientifically-driven oversight body. Describing this transformation as more of a journey than a shift makes the point that the FDA is still evaluating how best to bring about this change.

In my 25 years as an industry professional, I have seen many sound initiatives come and go; JIT, TQM and QFD all failed to gain traction with quality organizations. Throughout this period, the agency's response to the escalating drug complexity and associated public safety issues has been to step up the level of regulatory oversight. Consequently, the addition of risk-based cGMP guidelines for the 21st century has sent the industry reeling. Can we reconcile our history of controlling product safety through heightened quality oversight and incorporate these new scientific characterization requirements? Unlike previous failed initiatives that inhibited operational process innovation, the *de facto* consensus determined by the ISO, ICH and FDA swiftly validates the new risk-based approach as best practice.



Chatterjee

So why has our industry, which has prided itself as being scientifically driven, struggled with the concept of QbD? Why has PAT (process analytical technology) not become the ultimate business trump card? Although Big Pharma and Biotech are beginning to embrace these redefined basic principles of process characterization and variation control, the remainder of the industry remains largely uncommitted. Lean Six Sigma initiatives are creeping into process improvement programs but have yet to propagate to the R&D phases of the drug lifecycle.

I believe the problem lies in two places: our motivation – or lack thereof – as an industry for change, and the fact that much of the significance of the new initiatives lies at the characterization of process at the R&D stage, a place that traditionally has little regulatory visibility.

The agency has a vested interest in transforming its image. Whistleblower David Graham did immeasurable damage to that image with his claim that five approved drugs on the market represented a significant public safety risk and, more importantly, that the FDA could not protect the general public from unsafe drugs. The FDA was forced to change or be rendered impotent.

What is our industry's motivation for change? Joe Famulare, Deputy Director of Enforcement for the Agency, stated that he hopes the industry embraces this new risk-based approach to process development to the extent that it ultimately rewards patients. I believe there are several factors to consider if the new risk-based cGMPs are to take hold. The agency has advocated a wholesale change in how we bring drugs to market; Deputy Commissioner and Chief Medical Officer Janet Woodcock stated: "Agency leaders are redefining science, moving away from the early 20th century empiricism and towards a mechanistic understanding of processes, in everything from manufacturing to R&D and clinical trials." The problem with this position is that it does not speak to the business of making drugs.

In today's marketplace, 53% of all manufactured drugs are generic (2005 Generic Pharmaceutical Association). This number will only grow as more products come off patent, drug costs continue to rise and overseas competitors gain entry to the U.S. market. The reality is that our industry ranks at the bottom of most industries when it comes to manufacturing prowess. Overall equipment effectiveness (OEE) values hover in the 8-10% range vs. 85-90% for other industries. Quality overhead averages 3 to 1 for most ethical drug manufacturers, driving up costs and cannibalizing profits. I would submit that, new guidances or not, QbD is not only essential for demonstrating process control – it's also extremely good business!

However, to emphasize this point, the Agency may have to display some "tough love." It will also need to achieve consensus within its own house when it comes to enforcing the new guidances. Uneven enforcement will undermine any efforts by the Agency to effect a change in our industry.

Nevertheless, there are viable reasons for those of us in industry to embrace this new philosophy of scientific characterization and understanding. For one, drug manufacturing has gone global. The marketplace's interest in tapping into low-cost manufacturing labor in India, China, Malaysia and Singapore threatens U.S.-based businesses. While we likely can't compete on cost, we can still compete on quality. Fifty years of drug manufacturing experience cannot be duplicated overnight and no amount of guidance can replace the experience of manufacturing drugs under FDA oversight.

At the end of the day, we are a quality-driven industry. By embracing the principles of QbD within a risk-based context, we not only ensure higher quality, but become more cost-competitive with overseas manufacturers. As always in this three-legged race with the FDA, when the agency transforms itself, so must we. The stakes are too high for us to do otherwise.

About the Author

Bikash Chatterjee is president of Pharmatech Associates, Inc. He has been involved in the biopharma, pharmaceutical, medical device and diagnostics industry for over 20 years. Most recently he served as the vice president, Pharmaceutical Operations for Aradigm Corporation where he was responsible for establishing their process development, engineering, validation, facilities and manufacturing capabilities. Chatterjee is a certified ISO 9000 Lead Assessor, a Six Sigma Master Black Belt and has over 15 years experience in the implementation of Lean Manufacturing programs in the life sciences industry. He holds a B.A. in Biochemistry and a B.S. in Chemical Engineering from the University of California at San Diego.



([javascript:RightslinkPopUp\('cGMPs and FDA Regulatory Compliance | An Argument for Change | Pharmaceutical Manufacturing', '05/23/2007', 'Bikash Chatterjee, President, Pharmatech Associates', '095'\);](#))

Sponsored Product

A brand-new coater from O'Hara!

(<http://ad.doubleclick.net/click%3Bh=v8/3579/3/0/%2a/f%3B107024628%3B0-0%3B0%3B13822256%3B18132-465/110%3B21264530/21282422/1%3B%3B%7Esscs%3D%3fhhttp://www.oharatech.com>)



The skid mounted modular design with Air Handler, Controls, Spray system built into coater that allows reducing: Installation Cost - Installation Time - Validation Cost - Validation Time- Overall System Footprint - Site Engineering – Loading/ Uploading Time.