PQRI-FDA Workshop on Process Drift: Detection, Measurement, and Control in the Manufacture of Pharmaceuticals

December 1-3, 2010
Bethesda, Maryland

PQRI
Product Quality Research Institute

FDA

SCOPE AND OBJECTIVES FOR THE WORKSHOP

Early understanding of the major sources of variation is essential to sound process design and establishing a dependable manufacturing process. Over time, a drug ingredient or finished drug manufacturing process may drift from its target due to intrinsic or extrinsic factors that are either initially unknown or considered to be of lesser significance. Systems for routine evaluation of manufacturing performance are fundamental to maintain an ongoing state of control. Failure to adequately control processes and prevent defects can potentially pose a significant risk to consumers, affect product availability, and yield undesirable regulatory and business outcomes.

(a) discuss a lifecycle approach to monitoring manufacturing performance that assures prompt detection and correction of meaningful variation;

(b) explore technological and management system approaches to better control process variation and mitigate product variability.

(c) discuss the impact of process drift on product performance, safety and efficacy.

This workshop aims to bring representatives from industry, academia and regulatory agencies together to exchange ideas and experiences. It is hoped the workshop will stimulate use of more systematic approaches and modern methodologies to ensure manufacturing processes remain in a state of control. Holisitic approaches to enhance control throughout manufacture and technological solutions that help manufacturers acquire and use knowledge will be discussed. Ultimately, arriving at an understanding of the many beneficial contemporary approaches to variability reduction will help institute a manufacturing paradigm characterized by improvements in quality and efficiency throughout the product and process lifecycle.

Professionals involved in product and process development, manufacturing, quality assurance and regulatory affairs should all benefit by attending.

PLANNING COMMITTEE MEMBERS

Richard L. Friedman , CDER Office of Compliance, U.S. Food and Drug Administration,
Co-chair

Rajendra (Raj) Uppoor, R.Ph., Ph.D., CDER Office of Pharmaceutical Science, U.S. Food and Drug Administration,
Co-chair

Avraham (Avi) Yacobi, Ph.D., Taro Pharmaceuticals,
Co-chair

Prabir K. Basu, Ph.D., National Institute for Pharmaceutical Technology and Education (NIPTE)

Frank Holcombe, Jr., Ph.D., CDER Office of Generic Drugs, U.S. Food and Drug Administration

Yatindra Joshi, Ph.D., Teva Pharmaceuticals

Zena G. Kaufman, Abbott Laboratories

Theodora Kourti, Ph.D., GlaxoSmithKline

Christine M.V. Moore , Ph.D., CDER Office of New Drug Quality Assessment, U.S. Food and Drug Administration

Vibhakar Shah, Ph.D., CDER Office of Compliance, U.S. Food and Drug Administration

Vinod P. Shah, Ph.D., Pharmaceutical Consultant

J. Scott Tarpley, M.S., GE Intelligent Platforms, Inc.

Lynn D. Torbeck, M.S., Torbeck and Associates Consulting

Steven M. Wolfgang, Ph.D., CDER Office of Compliance, U.S. Food and Drug Administration

Mike Yelvigi, Pfizer, Inc.

WEDNESDAY, DECEMBER 1, 2010

8:30 am - 12:00 pm
Plenary Session

8:30 am
Workshop Introduction
Moderators
Avi Yacobi, Ph.D.
Taro Pharmaceuticals

Richard L. Friedman
U.S. Food and Drug Administration

8:45 am
Pharmaceutical Quality—How We Build and Maintain it Under a Robust Quality System
Juan Andres
Novartis

9:30 am
Ramifications of Process Drift
Zena G. Kaufman
Abbott Laboratories

10:00 am
Coffee Break

10:30 am
Tools for Recognizing and Quantifying Process Drift—Statistical Process Control
J. Scott Tarpley, M.S.
GE Intelligent Platforms, Inc.

11:00 am
Control, Compliance, and Continuous Improvement
Fionnuala M. Walsh, Ph.D.
Eli Lilly and Company

11:30 am
Effect of Process Drift on Quality of Drug Products
Richard L. Friedman
U.S. Food and Drug Administration

12:00 pm
Lunch

1:00 PM - 5:15 PM

PROCESS DRIFT AND ITS RESOLUTION IN THE MANUFACTURING OF ACTIVE PHARMACEUTICAL INGREDIENTS

1:00 pm
Moderators
Ira Berry, MBA/MA
International Regulatory Business Consultants, L.L.C.

Edwin Rivera-Martinez, *Invited*
U.S. Food and Drug Administration

1:15 pm
Process Drift in the Manufacturing of API's
Nandkumar K. Chodankar, Ph.D.
Excel Industries Limited

1:45 pm
Abnormal Situation Detection and Management Under the Design Space and Continuous Verification Framework
Theodora Kourti, Ph.D.
GlaxoSmithKline

2:15 pm
Detecting, Diagnosing, and Controlling Process Variations: A Review of Modeling Options
Venkat Venkatasubramanian
Purdue University

2:45 pm
Coffee Break

3:15 pm
Case Studies on Process Drift and Resolution
Denise Rivkees, R.Ph., Ph.D.
Pfizer Inc.

3:45 pm
Regulatory Implications of Process Drift
David J. Jaworski, *Invited*
U.S. Food and Drug Administration

4:30 pm
Panel Discussion

5:00 pm
Closing Remarks
Avi Yacobi, Ph.D.
Taro Pharmaceuticals

5:30 pm - 7:00 pm
Reception

THURSDAY, DECEMBER 2, 2010

8:30 am - 12:30 pm
Process Drift and its Resolution in the Manufacturing of Drug Products

8:30 AM
MODERATORS
Mario L. Rocci, Jr., Ph.D.
ICON Development Solutions

Christine M.V. Moore, Ph.D.
U.S. Food and Drug Administration

8:40 AM
Connection Between Quality, Safety, and Efficacy
Roger L. Williams, M.D.
US Pharmacopeia

9:10 AM
Tools for Monitoring and Controlling Uniformity of Solid Dosage Forms
Mariana Bacalu, M.Sc.
Taro Pharmaceutical Industries Ltd.

9:35 AM
Transdermals
Lino A. Tavares, B.S.
Purdue Pharma, L.P.

10:00 AM
Coffee Break

10:30 AM
MDIs AND DPIs
Edward Warner, M.Sc.
Merck

10:55 AM
Topicals (Ointments, Suspensions, Creams)
Clarence T. Ueda, Ph.D., Pharm.D.
University of Nebraska Medical Center

11:20 AM
Process Controls in Aseptic Manufacturing: An Overview
Joerg Zimmermann
Vetter Pharma Fertigung GmbH & Co. KG

11:45 AM
Process Drift Affects Specification and Shelf-life
Inna Ben-Anat, M.Sc.
Teva Pharmaceuticals USA

12:10 PM
Panel Discussion

12:30 PM
Lunch

1:30 PM - 5:15 PM
BREAK OUT SESSIONS
TO BE REPEATED FOUR TIMES TO ALLOW PARTICIPANTS TO ATTEND 4 OUT OF 5 SESSIONS

1:30 PM - 2:15 PM
FIRST ROUND OF BREAKOUTS

2:30 PM - 3:15 PM
SECOND ROUND OF BREAKOUTS

3:30 PM - 4:15 PM
THIRD ROUND OF BREAKOUTS

4:30 pm - 5:15 pm
FOURTH ROUND OF BREAKOUTS

Breakout Session # 1:
Definitions and Terms for Describing Process Variation and Process Drift
MODERATORS
Mario L. Rocci, Jr., Ph.D., ICON Development Solutions
Tara Gooen, U.S. Food and Drug Administration, *Invited*

Breakout Session # 2:
What are the Most Frequent Causes of Variation (e.g., manual vs. automation, equipment choices, raw materials) in Pharmaceutical Manufacturing?

MODERATORS

Eric W. Richmond, Ph.D., Lachman Consultant Services, Inc.
Vibhakar J. Shah, Ph.D., U.S. Food and Drug Administration

Breakout Session # 3:
Current Strategies for Monitoring and Detecting Process Variability

MODERATORS

Sonja S. Sekulic, Ph.D., Pfizer
Sharmista Chatterjee, Ph.D., U.S. Food and Drug Administration

Breakout Session # 4:
What Evolutions in Industry Management Approaches and the Regulatory Environment Could Promote More Proactive Process Improvement Throughout the Life-cycle?

MODERATORS

Glenn A. VanBuskirk, Ph.D., Nonclinical Drug Development Consulting Services, LLC

Steven M. Wolfgang, Ph.D., U.S. Food and Drug Administration

Breakout Session # 5:
Impact of Process Drift on Product Performance (Bioavailability, Safety, and Efficacy)

MODERATORS

Vinod P. Shah, Ph.D., Pharmaceutical Consultant
Gary J. Buehler, R.Ph., U.S. Food and Drug Administration

FRIDAY, DECEMBER 3, 2010

8:30 am - 12:30 pm
Opportunities for Minimizing and Preventing Process Drift

8:30 am

MODERATORS

Thirunellai G. Venkateshwaran, Ph.D.
Pfizer

Raj Uppoor, R.Ph., Ph.D.
U.S. Food and Drug Administration

8:40 am - 10:00 am
Breakout Session Summaries

1: Definitions and Terms for Describing Process Variation and Process Drift

Mario L. Rocci, Jr., Ph.D., ICON Development Solutions

2: What are the Most Frequent Causes of Variation (e.g., manual vs. automation, equipment choices, raw materials) in Pharmaceutical Manufacturing?

Eric W. Richmond, Ph.D., Lachman Consultant Services, Inc.

3: Current Strategies for Monitoring and Detecting Process Variability

Sonja S. Sekulic, Ph.D., Pfizer

4: What Evolutions in Industry Management Approaches and the Regulatory Environment Could Promote More Proactive Process Improvement Throughout the Life-cycle?

Glenn A. VanBuskirk, Ph.D., Nonclinical Drug Development Consulting Services, LLC

5: Impact of Process Drift on Product Performance (Bioavailability, Safety, and Efficacy)

Vinod P. Shah, Ph.D., Pharmaceutical Consultant

10:00 am
Coffee Break

10:30 am
Managing Change in Manufacturing
Nigel Hamilton
Sanofi-Aventis

11:00 am
Collaborations for Success
PQRI: An Industry, Regulatory, and Academic Consortium
Mary D. Oates, Ph.D.
Chair, PQRI Steering Committee

11:30 am
Process Validation for Life-cycle Management of Product Quality and Product Performance
Grace E. McNally
U.S. Food and Drug Administration

12:00 pm
Panel Discussion

12:30 pm
Closing Comments
Richard L. Friedman
U.S. Food and Drug Administration

PQRI MISSION STATEMENT

The Product Quality Research Institute (PQRI) is a non-profit consortium of organizations working together to generate and share timely, relevant, and impactful information that advances drug product quality and development.

By virtue of its diverse membership, PQRI provides a unique forum to focus critical thinking, conduct research, exchange information, and propose methodology or guidance to pharmaceutical companies, regulators, and standard setting organizations.

PQRI MEMBER ORGANIZATIONS

AAPS
American Association of Pharmaceutical Scientists

CHPA
Consumer Healthcare Products Association

FDA/CDER
U.S. Food and Drug Administration, Center for Drug Evaluation and Research

HC
Health Canada

IPAC-RS
International Pharmaceutical Aerosol Consortium on Regulation & Science

IPEC-Americas
International Pharmaceutical Excipients Council of the Americas

USP
United States Pharmacopeia

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Hotel accommodations are available at a discounted rate through the Bethesda North Marriott. Please call 1-800-859-8003 and reference **Process Drift Workshop** or log on to: http://www.bethesdanorthmarriott.com and enter your check-in and check-out date, along with the Group Code **PFFPFFA** under the Special Prices link, to make sure you get the discounted rate of $199 per night for single or double occupancy.

Bethesda North Marriott
5701 Marinelli Road
Bethesda, MD 20852
301-822-9200

Please register for the workshop on Sign Me Up at:

https://www.signmeup.com/site/reg/register.aspx?fid=ZT2VZJ7&Source=Calendar29

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