Workshop on Natural History Studies of Rare Diseases:
Meeting the Needs of Drug Development and Research

NIH Campus • Bethesda, MD — May 16–17, 2012

AGENDA

Sponsored by:
Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA)
Office of the Commissioner, Office of Orphan Products Development (OOPD), FDA
National Institutes of Health (NIH) Clinical Center
Office of Rare Diseases Research (ORDR), National Center for Advancing Translational Sciences (NCATS), NIH
Therapeutics for Rare and Neglected Diseases (TRND) Program, NCATS, NIH
National Institute of Neurological Disorders and Stroke (NINDS), NIH
Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), NIH

Overview:
Natural history (NH) studies are an important tool for understanding the etiology, range of manifestations, and progression of rare diseases. Well-conducted NH studies can yield information on biomarkers and other correlates of clinical outcome. Obtaining maximum value to support drug development programs depends on conducting these NH studies early, often long before potential therapeutic agents are identified for development. Comprehensive, good quality NH studies designed with an eye toward supporting drug development programs can avoid some of the common problems that lead to stalled, slow, or inefficient drug development for rare diseases. This workshop aims to bring together thought leaders in the design, conduct, and evaluation of natural history studies to discuss the role of these studies in the development of therapeutic candidates.

DAY 1 — WEDNESDAY, MAY 16

7:30 A.M. — **REGISTRATION**

8:30 A.M. — **Welcome and Opening Remarks**
Gayatri Rao, M.D., J.D. — OOPD, FDA
Stephen C. Groft, Pharm.D. — ORDR, NCATS, NIH
Christopher Austin, M.D. — TRND, NCATS, NIH
John Gallin, M.D. — NIH Clinical Center

9:00 A.M. — **Natural History Studies: Concept and Importance**
The Importance of Natural History Studies in Rare Diseases
Anne Pariser, M.D. — CDER, FDA

Natural History Studies of Rare Diseases: Concept and Elements
Nuria Carrillo, M.D. — NCATS, NIH

Discussion/Questions

10:00 A.M. — **BREAK**

10:15 A.M. — **Theoretical Considerations in the Design of Natural History Studies**
Marc Walton, M.D. — CDER, FDA

Discussion/Questions

11:00 A.M. **Practical Considerations in the Design of Natural History Studies**

The View from the Rare Diseases Clinical Research Network
Jeff Krischer, Ph.D. — University of South Florida College of Medicine

Importance of Natural History Studies to the Biotechnology and Pharmaceutical Industries
Edward Kaye, M.D. — AVI BioPharma

Natural History Studies to Inform Drug Trials in Duchenne Muscular Dystrophy: Lessons Learned and the Role of Patient Advocacy
Pat Furlong — Parent Project Muscular Dystrophy

Discussion/Questions

12:15 P.M. **LUNCH (ON YOUR OWN)**

1:30 P.M. **Case Studies: Prospective Longitudinal, Academic**

Chair: *Petra Kaufmann, M.D.* — NINDS, NIH
Co-Chair: *Edward Kaye, M.D.* — AVI BioPharma
Panel: *David Pearce, Ph.D.* — Sanford School of Medicine and *Craig McDonald, M.D.* — University of California-Davis

Spinal Muscular Atrophy Natural History Study: Lessons Learned
Basil Darras, M.D. — Harvard University

The Utility of Longitudinal Studies: Examples from the Urea Cycle Disorders Consortium
Marshall Summar, M.D. — Children's National Medical Center

Lessons Learned from a Prospective Longitudinal Study of Healthy Persons at Risk for Brain Disease: PREDICT-HD
Jane Paulsen, Ph.D. — University of Iowa

Discussion/Questions

3:15 P.M. **BREAK**

3:30 P.M. **Case Studies: Prospective Longitudinal, Industry**

Chair: *Edward Kaye, M.D.* — AVI BioPharma
Co-Chair: *Petra Kaufmann, M.D.* — NINDS, NIH
Panel: *Annette Stemhagen, Dr.P.H., F.I.S.P.E.* — United BioSource Corporation and *Karen Chen, Ph.D.* — SMA Foundation

An Observational Study of Pediatric Subjects with Globoid Cell Leukodystrophy (GLD)
Lawrence Charnas, M.D., Ph.D. — Shire Human Genetic Therapies

A Prospective, Longitudinal Study of the Natural History of Niemann-Pick Disease Type B
PK Tandon, Ph.D. — Genzyme Corporation

A Natural History Study of Mucopolysaccharidosis IIIA (MPSIIIA, Sanfilippo Syndrome Type A)
Patrick Haslett, M.D. — Shire Human Genetic Therapies

Discussion/Questions

5:00 P.M. **ADJOURN**

DAY 2 — THURSDAY, MAY 17

8:30 A.M. **Case Studies: Retrospective Chart Review**
Chair: *Priya Kishnani, M.D.* — Duke University Medical Center
Co-Chair: *Marc Walton, M.D.* — CDER, FDA

FDA Perspective: Eosinophilic Esophagitis
Robert Fiorentino, M.D. — CDER, FDA

A Retrospective Natural History Study in Fabry Disease: Challenges and Uses
Richard Moscicki, M.D. — Genzyme Corporation

Lessons Learned from Pompe Disease
Priya Kishnani, M.D. — Duke University Medical Center

Discussion/Questions

10:15 A.M. **BREAK**

10:30 A.M. **Case Studies: Prospective Cross-Sectional**
Chair: *Wendy Introne, M.D.* — National Human Genome Research Institute (NHGRI), NIH
Panel: *Meral Gunay-Aygun, M.D.* — NHGRI, NIH

Pilot Studies and Cross-Sectional Studies: How They Inform Natural History Studies
Elsa Shapiro, Ph.D., L.P. — University of Minnesota

Practical Tips in Designing Natural History Studies of Rare Genetic Diseases of the Brain
Maria Escolar, M.D., M.S. — Children's Hospital of Pittsburgh of UPMC

GM2 Gangliosidosis: Getting the Most out of Patient Surveys
Florian Eichler, M.D. — Massachusetts General Hospital, Harvard Medical School

Discussion/Questions

12:15 P.M. **BREAK (CHAIRS AND SUMMARY SPEAKERS TO MEET)**

12:45 P.M. **Summary, Conclusions, and Moving Forward**
John McKew, Ph.D. — TRND, NCATS, NIH

2:00 P.M. **ADJOURN**