<table>
<thead>
<tr>
<th>POSTER NO.</th>
<th>AUTHOR</th>
<th>POSTER TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 01</td>
<td>Edward Tabor, MD</td>
<td>Toward a New Regulatory Paradigm for Lipid Emulsions for Parenteral Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>T 02</td>
<td>Elisa F. Cascade, MBA</td>
<td>Recruitment Metrics From Together RA: A Study in Rheumatoid Arthritis Patients to Evaluate Feasibility of Direct-to-Patient Research Approach</td>
<td>5</td>
</tr>
<tr>
<td>T 03</td>
<td>Patrick G. Clay, PharmD</td>
<td>Site-level Quality Assurance Outcome: Identification of Sponsor-provided Source Documents With Greatest Prevalence of Errors</td>
<td>6</td>
</tr>
<tr>
<td>T 04</td>
<td>Raymond M. Panas, PhD</td>
<td>Potential Differences in Subjects From Physician Recruitment Versus Centralized Recruitment Campaigns in a Clinical Trial</td>
<td>6</td>
</tr>
<tr>
<td>T 05</td>
<td>Bin Yao</td>
<td>Global Clinical Trials: Challenges, Risks and Rewards</td>
<td>7</td>
</tr>
<tr>
<td>T 06</td>
<td>Michael C. Mosier, PhD</td>
<td>A Comparison of the Statistical Properties of Confidence Intervals for the Difference in Two Proportions</td>
<td>7</td>
</tr>
<tr>
<td>T 07</td>
<td>Wendy Ye, MD, MPH</td>
<td>Comparing the Sensitivity of Safety Signal Identification When Using Three Methods: EBGM, U-Chart and Increased Frequency</td>
<td>8</td>
</tr>
<tr>
<td>T 08</td>
<td>Kay Friel</td>
<td>Develop a Project Management Training Program for Clinical Trials Sites to Manage Complex Clinical Trials Effectively</td>
<td>8</td>
</tr>
<tr>
<td>T 09</td>
<td>Thomas Martin Schindler</td>
<td>Different Competencies and Skill Sets for Regulatory Medical Writers and Publication Writers</td>
<td>9</td>
</tr>
<tr>
<td>T 10</td>
<td>Mukta Tripathi, MS</td>
<td>Risk-based Centralized Monitoring of Clinical Trials: A Statistical Approach</td>
<td>9</td>
</tr>
<tr>
<td>T 11</td>
<td>Patricia Brown, PhD</td>
<td>Failed Trials and Protocol Design: Is There a Relationship?</td>
<td>10</td>
</tr>
<tr>
<td>T 12</td>
<td>Anish Sule, MD</td>
<td>The Evolving Oncology Clinical Trial Landscape in Asia: 10 Year Trend</td>
<td>10</td>
</tr>
<tr>
<td>T 13</td>
<td>Pelin Tanyeri, MD</td>
<td>Anxiolytic-like Effect of Beta Receptor Agonist Amibegron May Be Related to Interaction of Serotonin Receptor Subtypes</td>
<td>10</td>
</tr>
<tr>
<td>T 14</td>
<td>Larry Liberti, MS, RPh, RAC</td>
<td>What Are the Attributes That Companies Believe Would Help Agencies to Make Quality Regulatory Review Decisions?</td>
<td>11</td>
</tr>
<tr>
<td>T 15</td>
<td>Karen Bossert, PhD, RPh</td>
<td>Quality Systems for Contract Clinical Supply Operations: Using Risk Analysis to Meet Global Requirements</td>
<td>11</td>
</tr>
<tr>
<td>T 16</td>
<td>Idongesit Essiet-Gibson, PhD, MPH</td>
<td>So You Have a CTMS, Now What? Using Technology to Optimize Clinical Operational Processes - the DAIDS RSC Experience</td>
<td>12</td>
</tr>
<tr>
<td>T 17</td>
<td>Mary Gaylord, MBA, MLIS</td>
<td>Measuring Outcomes in Phase 1 Clinical Trials</td>
<td>12</td>
</tr>
<tr>
<td>T 18</td>
<td>Robert George Kochan, PhD</td>
<td>Advantages and Mass Balance Results Dosing [14C]-Oncology Drugs to Normal Healthy Volunteers: Compiled Data from 22 AME Studies</td>
<td>12</td>
</tr>
<tr>
<td>T 19</td>
<td>Justin Balint, PharmD</td>
<td>Impact of Public Comments on Prescription Drug Benefits in Essential Health Benefits Final Ruling</td>
<td>13</td>
</tr>
<tr>
<td>T 20</td>
<td>Glenn Carroll</td>
<td>With the Changing Life Sciences and Regulatory Landscapes: Evolutions in Drug Safety and Pharmacovigilance Operating Models</td>
<td>13</td>
</tr>
<tr>
<td>T 21</td>
<td>Eric Ross</td>
<td>New Survey Data Results: Patient Preferences for Reminders in Clinical Trials With Patient Diaries</td>
<td>14</td>
</tr>
<tr>
<td>T 22</td>
<td>DeAnn S. Hyder</td>
<td>Developing Site Monitoring Triggers to Support Risk-based Monitoring</td>
<td>14</td>
</tr>
<tr>
<td>T 23</td>
<td>Christopher D. Watson, PhD</td>
<td>The Use of Compliant Text Messaging to Increase Patient Engagement in a Study Comparing Oral Contraceptive Symptoms</td>
<td>14</td>
</tr>
<tr>
<td>T 24</td>
<td>Christine Riley-Wagenmann</td>
<td>Monitoring without SDV or Regulatory Document Collection: The Monitor’s Critical Role and How it Has Changed</td>
<td>15</td>
</tr>
<tr>
<td>T 25</td>
<td>Jannette Karl, MBA, PMP</td>
<td>Advancing Patient Registry Methodology with an Outcome Measures Framework</td>
<td>15</td>
</tr>
<tr>
<td>T 26</td>
<td>Antonio Ferrari, MD</td>
<td>Spontaneous Ventricular Arrhythmias in Early Clinical Trials: a Report from a Single and Repeated Ascending Dose Study</td>
<td>16</td>
</tr>
<tr>
<td>T 27</td>
<td>Boas Nahm, PharmD</td>
<td>Gamification in the Pharmaceutical Industry: An Innovative Approach to Education and Awareness Among Patients and Health Care</td>
<td>16</td>
</tr>
<tr>
<td>T 28</td>
<td>Stephen Furlong, PhD, MSc</td>
<td>Characterization of Renal Biomarkers for Use in Drug Development: Biomarker Evaluation in “Healthy Volunteers”</td>
<td>16</td>
</tr>
<tr>
<td>T 29</td>
<td>Elvira Zenaida Plata Lansang, DrMed</td>
<td>Asian Investigators Enrollment Prediction: An Assessment of Accuracy Against Actual Performance</td>
<td>17</td>
</tr>
<tr>
<td>T 30</td>
<td>Kelly Lyn Traverso</td>
<td>Embracing Social Media and what it means for maintaining Compliance</td>
<td>17</td>
</tr>
<tr>
<td>T 31</td>
<td>Andy MacKelfresh</td>
<td>Return on Innovation Investment for Life Science Technologies</td>
<td>17</td>
</tr>
<tr>
<td>T 32</td>
<td>Sandhya Mehta, PhD, MS</td>
<td>Comparative Safety of Second-Generation Antipsychotics and Risk of Pneumonia</td>
<td>17</td>
</tr>
<tr>
<td>T 33</td>
<td>Ankita Modi, PhD</td>
<td>Consequences of Non-compliance to Osteoporosis Medication Among Osteoporotic Women</td>
<td>18</td>
</tr>
<tr>
<td>T 34</td>
<td>Diana Ye</td>
<td>FDA Trends: Is Your Company Ready for the Next Inspection?</td>
<td>18</td>
</tr>
<tr>
<td>W 01</td>
<td>Suvarna Lakshmi Jetti</td>
<td>Inspections: Streamlining Backstage Operations Using the Cloud</td>
<td>19</td>
</tr>
<tr>
<td>W 02</td>
<td>Pierre Maison-Blanche</td>
<td>Highly-Automated Analysis of QTcI/QTcF in Thorough QT (TQT) Study</td>
<td>19</td>
</tr>
<tr>
<td>W 03</td>
<td>Dena Cosgrove, RPh</td>
<td>Determinants for Predicting Serious Adverse Event (SAE) Rates Across Study Duration in Selected CNS Indications</td>
<td>20</td>
</tr>
<tr>
<td>W 04</td>
<td>Penelope Manasco, MD, MS</td>
<td>Remote Informed Consent Review: Results of Implementation in Phase III Trials</td>
<td>20</td>
</tr>
<tr>
<td>W 05</td>
<td>Katherine Saunders, MS</td>
<td>Characteristics of a US Rheumatoid Arthritis Cohort: Baseline Data from CORRONA</td>
<td>20</td>
</tr>
<tr>
<td>W 06</td>
<td>Margaret Richards, PhD, MPH</td>
<td>A Trio of Talent: Scientific Collaboration Inside a CRO</td>
<td>21</td>
</tr>
<tr>
<td>W 07</td>
<td>Eileen Kahn, MS</td>
<td>Labeling for Devices: A Global Solution</td>
<td>22</td>
</tr>
<tr>
<td>W 08</td>
<td>Toshiyoshi Tominaga, PhD</td>
<td>Microdose Study on Three Aromatase Inhibitors</td>
<td>22</td>
</tr>
<tr>
<td>W 09</td>
<td>Lisa Maire Saldanha</td>
<td>Current Scenario of Clinical Research Sites in Thailand: A Ground Up Approach to Clinical Site Selection in Emerging Countries</td>
<td>22</td>
</tr>
<tr>
<td>W 10</td>
<td>Barry Peterson, PhD</td>
<td>Evaluation of Pain Drugs: Role of Undetected Underlying Sleep Pathologies</td>
<td>23</td>
</tr>
<tr>
<td>W 11</td>
<td>Jin Zhang, PhD, MS</td>
<td>Selective Blockade of RyRIII May Present a Protective Effect against Neuronal Insult in Cell Model</td>
<td>23</td>
</tr>
<tr>
<td>W 12</td>
<td>So Hyeon Ahn, MSc</td>
<td>Development of Guidance for Handling Adverse Drug Reaction Reports at National Level</td>
<td>24</td>
</tr>
<tr>
<td>W 14</td>
<td>Claudia Morris, DrMed, MD</td>
<td>Randomized Placebo-Control Trial of Arginine Therapy for Treatment of Children with Sickle Cell Disease and Vasoocclusive Pain</td>
<td>24</td>
</tr>
<tr>
<td>W 15</td>
<td>Kristina Robson</td>
<td>Best Practices for Optimizing Global Biopsychosocial Facets of Clinical Research</td>
<td>24</td>
</tr>
<tr>
<td>W 16</td>
<td>Jay Bordoloi, PharmD</td>
<td>Comparison of the US Package Insert and the EU Summary of Product Characteristics</td>
<td>25</td>
</tr>
<tr>
<td>W 17</td>
<td>Andrew Dropsey, MSc</td>
<td>Genotoxic Evaluation of a Chloroalcohol Resulting From Acid Degradation of an Oral Pharmaceutical Containing an Oxetane Ring</td>
<td>26</td>
</tr>
<tr>
<td>W 18</td>
<td>John Reites</td>
<td>Recruitment Metrics From a Direct-to-patient Approach to Enroll Patients in a Diabetes Practice-based Research Network</td>
<td>26</td>
</tr>
<tr>
<td>W 19</td>
<td>Debora Cristina Azevedo, MPH</td>
<td>Development of a Quality Program for Clinical Research Sites of Brazilian Clinical Research Cancer Network</td>
<td>26</td>
</tr>
<tr>
<td>W 20</td>
<td>Thomas Felix, MD</td>
<td>The Role of Product Identification Systems in Pharmacovigilance (PV) for Biologics in the Biosimilars Era</td>
<td>27</td>
</tr>
<tr>
<td>W 22</td>
<td>Barbara Stephenson, MSc, RN</td>
<td>What Medical Writers Contribute and What They Need to Know</td>
<td>28</td>
</tr>
<tr>
<td>W 23</td>
<td>Sundar Ramanan, PhD</td>
<td>Preventing Shortages of Biologic Medicines</td>
<td>29</td>
</tr>
<tr>
<td>W 24</td>
<td>Joseph Reynolds, MBA</td>
<td>A Prospective Clinical Trial of a Scoliosis Growth Modulation Clip/Screw Device: Initial Safety Results</td>
<td>29</td>
</tr>
<tr>
<td>W 25</td>
<td>Alexis Parente, MA</td>
<td>Comparative Risks of Organ Dysfunction Associated with Individual Antiepileptic Drugs Following FDA Black Box Warning</td>
<td>30</td>
</tr>
<tr>
<td>W 26</td>
<td>Thomas Taylor</td>
<td>Registry of Patient Registries (RoPR): Supporting Registries for Comparative Effectiveness Research</td>
<td>30</td>
</tr>
<tr>
<td>W 27</td>
<td>Arvind Nagaraj, MSc</td>
<td>A Self-service Approach to Reporting Using Dimensional Data Warehouse Architecture</td>
<td>30</td>
</tr>
<tr>
<td>W 28</td>
<td>Arun Krishna, PhD</td>
<td>Burden of Post-treatment Fractures in Terms of Health Care Cost and Utilization Among Patients on Osteoporosis Treatment</td>
<td>31</td>
</tr>
<tr>
<td>W 29</td>
<td>Ashley Brower</td>
<td>The Impact of Tyrosine Kinase Inhibitors on Stage IV Distant Renal Cell Carcinoma Overall Survival</td>
<td>31</td>
</tr>
<tr>
<td>W 30</td>
<td>Vikki Brandi, DrSc</td>
<td>Factors Affecting Strategies in Asthma and COPD Clinical Trials</td>
<td>31</td>
</tr>
<tr>
<td>W 31</td>
<td>Gary Kay, PhD</td>
<td>Application of Clinical Drug Trial Methodology to the Evaluation of Nutraceuticals</td>
<td>32</td>
</tr>
<tr>
<td>W 32</td>
<td>Hye Lynn Choi</td>
<td>Regulatory Systems Assessments in Selected Low-and Middle-income Countries (LMICs)</td>
<td>32</td>
</tr>
</tbody>
</table>
**T 01  Toward a New Regulatory Paradigm for Lipid Emulsions for Parenteral Nutrition**

Edward Tabor, MD  
**Vice President, Regulatory Affairs North America, Fresenius Kabi**

**Objective:** Significant challenges now face FDA as it seeks to decide approval criteria for NDAs for lipid emulsion parenteral nutrition products, as products containing new kinds of lipids are submitted for approval for the first time in 29 years.

**Method:** The regulatory history of parenteral nutrition lipid emulsions in the US has been reviewed by use of publicly available US government databases. The technical basis for current regulatory policy was explored through analysis of the Food, Drug & Cosmetic Act, and the Code of Federal Regulations, as well as the transcript of an FDA public workshop. Position papers published by professional associations and review articles published by nutrition experts were also examined.

**Conclusion:** Patients who are unable to obtain adequate nutrition by eating or by the enteral route must receive it intravenously (as parenteral nutrition) in order to survive; lipid emulsions are usually an important part of these parenteral nutrition regimens. The standards for approval of new drugs have advanced greatly during the 29 years since the last approval of a new kind of lipid emulsion product in the US. However, many of the requirements are not easily applied to products with nutritional indications. Although parenteral nutrition lipid emulsions are regulated as “drugs” under the definitions in the Food, Drug and Cosmetic Act and Code of Federal Regulations, in many of their characteristics and medical uses they are more like foods than like drugs. A major similarity to foods is that their purpose is to provide essential fatty acids needed to maintain the structure of cells and tissues during a period when patients cannot eat, to provide energy, and in children, to provide the substrate for growth. A major difference from foods is that they are given intravenously. The medical need to approve new lipid emulsions appears to call for a new regulatory paradigm for parenteral nutritional products. A meaningful basis for approval would be requiring clear evidence of safety, and evidence of efficacy based on nutritional equivalence to previously approved products. Continuing discussion by regulatory specialists will be needed in order to determine how to get new lipid emulsions to US patients who need parenteral nutrition in order to survive.

**T 02  Recruitment Metrics From Together RA: A Study in Rheumatoid Arthritis Patients to Evaluate Feasibility of Direct-to-Patient Research Approach**

Elisa F. Cascade, MBA  
**Vice President, Global Head of Operations, Quintiles Transnational Corp**

**Objective:** The objective of this study is to examine whether a direct-to-patient research approach can be used to complement conventional clinical research methods.

**Method:** Patients from Quintiles’ communities, digital partners, and social media were invited to access study details, consent to participate, and screen for eligibility. Enrolled patients completed 2 web-based surveys, provided authorization for medical record release, and provided a saliva sample.

**Conclusion:** Recruitment metrics from this study suggest that utilizing a direct-to-patient design can result in rapid recruitment even into studies that combine patient-reported outcomes with
medical record and genomic data. Although the medical record and genomic data collection activities are still on-going, future analyses will examine compliance with these study activities as well as completeness and quality of data collected from medical records related to dates/product exposure, treatment response notes, RA-related laboratory tests, and joint counts.

**T 03 Site-level Quality Assurance Outcome: Identification of Sponsor-provided Source Documents With Greatest Prevalence of Errors**

Patrick G. Clay, PharmD, **Professor, University of North Texas**

**Objective:** Data quality is a site’s primary marketability characteristic. Sites must address those areas of greatest risk to data integrity, proactively when possible. Thus, sites should identify which source documents represent greatest risk for failing to meet GCP standards when completed.

**Method:** Case files of a 24-wk outpatient study source pages examined for corrections required. Pages were either: error-free, needed self-evident corrections (SEC) or non-self-evident corrections (NSEC). NSEC either met (NSEC-met) or failed (NSEC-fail) GCP. Additional methodology is provided in the poster.

**Conclusion:** Quality data is the ultimate commodity a site can offer a sponsor. Use of sponsor provided source documents hastens efficiency for and profitability of site to initiate study activities. Unfamiliarity with document layout, sponsor expectations and especially monitor interpretation of how these are to be completed increase the likelihood of documentation errors. Nonetheless, sites must rapidly identify those elements of the source document most at risk for or contain non-GCP compliant errors. Quality assurance assessments such as these can allow sites to target at-risk processes as well as enhance monitor and sponsor focus when conducting routine verification of data. Knowing the sections of the source documents or CRFs most associated with NSEC corrections provided site management the ability to prioritize training and education of staff. Following this analysis, site focused training on ensuring corrections to source documents met GCP standards as this was the primary concern. Secondly, site staff were educated to more accurately interpret medical records and completely document on the source the history of the participant. Staff also educated to document rational for changes in source secondary to fluctuations in patient’s recall of medical history or upon receipt of medical records. Next, the importance and critical aspect for pharmacokinetic sampling (documenting times for blood draws and dosing), investigational product dispensing and reconciling multiple forms used to document this activity, and consistently transcribing concomitant medications from previous visit to subsequent were reviewed. Lastly, site staff communicated with sponsor and monitors to more rapidly come to a consensus how to complete documents to avoid the repeated corrections of the same document. With these type site-level activities (cost-effective, enhance professionalism and improve data quality likelihood), sites can maximize productivity and minimize potential errors in data collected.

**T 04 Potential Differences in Subjects From Physician Recruitment Versus Centralized Recruitment Campaigns in a Clinical Trial**

Raymond M. Panas, PhD, **Professor, Shay Consulting, LLC & George Washington University**

**Objective:** The objective of this study was to understand the practical applications for using pharmaceutical recruitment and physician recruitment and to determine if there were differences in the subject population based upon the recruitment method.

**Method:** Blinded data from a Phase 3 Irritable Bowel Syndrome study was retrospectively evaluated using a quasi-experimental design. The information for analysis was accessed from clinical trial enrollment reports, progress reports, and SAS datasets. Individual subject data was captured via the IBS-QOL surveys, electronic case report forms, and electronic diaries. Descriptive statistics was used to evaluate demographic data. Either a specified t test or Fisher’s Exact Test was utilized for the comparison of five key characteristics (likelihood for enrollment, compliance to treatment, completion of the clinical trial, physiological
symptoms, and psychological assessments) of the study population based upon the recruitment methods – physician or centralized campaign.

**Conclusion:** Traditionally, physicians recruited clinical trial subjects, but pharmaceutical companies have become ever more involved through centralized campaigns. Physicians are vital to a trial and the pharmaceutical effort helps shift some of the recruitment demands away from the site to allow them to focus on the subjects. Thus, it is practical to understand if different recruitment methods could change or skew the study population. This study determines if differences or similarities occurred between subjects recruited by physicians and pharmaceutical companies. It discovered that some of both occurred. The pharmaceutical company efforts helped recruit potential subjects from the general population that were similar to subjects recruited by the physicians, but this particular campaign was limited by language which affected recruitment of Hispanic subjects. The social impact of this study provides insight about pharmaceutical company recruitment. Since the National Library of Medicine has indicated that clinical trials should reflect the broader diseased population, the efforts of the pharmaceutical company can help support the physicians’ efforts by recruiting from the broader population. Together, both efforts can create a global good by allowing the trial to reflect the population of post-approval use. These findings still raise a question about the proper balance between the two recruitment groups so that the intended characteristics of the diseased population are maintained. Because differences between physician and pharmaceutical recruited subjects can exist, the potential of one group to bias the trial results exist. As such, some analysis by recruitment method can help ensure that variations in the study population are minimal without skewing the data to create positive study results.

**T 05 Global Clinical Trials: Challenges, Risks and Rewards**

Bin Yao  
*Director Biostatistics, Amgen Inc.*

**Objective:** Multi-Regional Clinical Trial (MRCT) has become a common practice in drug development with growing participation from Asian countries such as China. We review challenges, risks, and rewards in conducting a global MRCT from the perspectives of regulatory strategy, clinical trial design, and statistical analysis.

**Method:** Literature reviews of statistical design strategies relevant to MRCT are performed. We focus on a drug development scenario where the MRCT is based on a common protocol but early filing in certain regions (e.g. US and EU) is desired while the trial continues to enroll in China, for example. The goal is to ensure validity in trial results to enable both the regional approval in China and approvals in the US and EU. Different approaches are discussed and outcomes are compared.

**Conclusion:** Global clinical trial design is rarely one-size-fits-all. Knowledge of regional regulatory requirements, clinical practice differences, and accrual feasibility is essential to customize trial designs to the specific situations. A thoughtful and well coordinated global development program leads to efficiency and timely approvals of important therapies to benefit patients in all regions.

**T 06 A Comparison of the Statistical Properties of Confidence Intervals for the Difference in Two Proportions**

Michael C. Mosier, PhD  
*Director, Biostatistics, EMB Statistical Solutions, LLC.*

**Objective:** The objective of this study is to compare the statistical properties, software availability, and computing demands of the competing methods for constructing exact confidence intervals for the difference in two independent proportions.

**Method:** For this study, we reviewed the literature for existing simulations, and in some cases conducted further simulations, comparing the methods of Agresti and Min (2001), Chan and Zhang (1999), Santner and Snell (1980), as well as a the classic asymptotic methods and a few more recent approaches (both exact and not exact). Additionally, we looked at which methods are easily obtainable using popular software, and assessed the computer run-times for the implemented methods for various scenarios.

**Conclusion:** While differences between the methods do exist, and can seem large in some scenarios, for the more common scenarios likely to be encountered in practice the differences often aren’t dramatic. Since not all
methods are readily available in existing software, one must weigh whether any gained efficiency in power is worth the purchase of additional software or programming the method from scratch. Methods with long computing times become troublesome when many intervals are being produced within a trial, say for multiple subgroups or strata, and less computer intensive methods may often provide the same conclusions in much less time.

T 07 Comparing the Sensitivity of Safety Signal Identification When Using Three Methods: EBGM, U-Chart and Increased Frequency

Wendy Ye, MD,MPH
Senior Epidemiologist, Novartis-Alcon Labs

Objective: To assess the usefulness of the combination of EBGM, U-Chart and Increased Frequency calculation in identifying safety signals.

Method: One drug and two devices were selected for analysis. Inclusion criteria included a minimum of three years on the market, having an appropriate comparison group for disproportionality analysis, and sales data for each year marketed. Each product was analyzed using three different methods.

Conclusion: Preliminary analysis of EBGM, U-Chart, and Increased Frequency calculation suggests all three methods are useful in identifying safety signals. Further analysis is ongoing to see if all three methods should be used in safety trending and signaling.

T 08 Develop a Project Management Training Program for Clinical Trials Sites to Manage Complex Clinical Trials Effectively

Kay Friel
Director, Clinical Trials Support Services, Ontario Institute for Cancer Research, Canada

Objective: To develop and implement through peer training, a clinical trials interactive project management workshop, to support sites in managing clinical trials in a complex and highly regulated environment.

Method: In October 2011, a Working Group (WG) of experienced clinical research professionals was created to review current educational opportunities offered through the High Impact Clinical Trials (HICT) Program at the Ontario Institute for Cancer Research and to determine future needs. We were determined to have broad representation on the WG, but it could not be too big as it had to be committed and nimble. It consisted of six members from oncology programs across Ontario: two members from large adult cancer centres, one from an adult community cancer centre, one from paediatric oncology and two members from the HICT Program. The objective of the WG was to identify educational gaps, recommend solutions and be prepared to invest time in the development of the solution. In preparation for the initial face to face WG kick off meeting, a gap analysis was produced comparing all the current educational opportunities. The WG reviewed the gap analysis and the recent clinical trials environment and recommended a solution that would meet the current demands of clinical research sites in Ontario. As experienced clinical research personnel, they believed it was necessary to address the gap between regulatory training and actual practice. Once the gap was identified, there was in depth discussion on how it should be addressed: webinar series, online modules, face to face workshop, half day, full day or two days. It was determined that all recent training opportunities kept the participants at their desks and did not allow for the benefit of the networking experience. Therefore, it was decided that a two day workshop would be developed and would be offered on a Friday and Saturday allowing for maximum participation supported by the sites and allow the participants to also be actively responsible for their own professional development. An outline of the new workshop was designed for the most effective use of each member’s time and expertise. We created modules that incorporated project management into the conduct of clinical trials. Modules were assigned to each WG member to expand and create a full curriculum and progress was reviewed at weekly teleconferences and at face to face meetings. The face to face meetings also included brainstorming activities to find the best exercises to demonstrate the principles being taught. Since the target audience for the workshop are experienced professional colleagues, the WG members had to ensure the new curriculum followed the principles of adult learning. The workshop had to be collaborative, problem based, interactive, meaningful
and practical. Over a period of 6 months, the WG met weekly by teleconference and held bimonthly face to face meetings for status updates and to review the work in progress to create a two day interactive workshop.

Conclusion: We have now completed two CTPM workshops with participants from adult and pediatric oncology clinical research professionals from 20 institutions in Ontario. Of the 43 participants, experience ranged from 6 months to 22 years. In post-workshop evaluations, 83.7% of attendees said they could apply PM to their work and 86% gave the overall quality a 4 or 5, with 5 being the top rating of very good. Preliminary data suggests that the CTPM workshop is fulfilling the identified need. Clinical research coordinators recognize the value of having the knowledge and the proven PM tools to manage and track trials concurrently, effectively and successfully. This is especially important since clinical trials landscape is becoming progressively more challenging to navigate due to complex study protocols, tight timelines, difficulties in patient recruitment and constrained clinical research budgets. By addressing clinical trials from the investigator initiated sponsor point of view, we were able to complete a second objective: 1) increased the sites awareness of the value of completing the trials on time efficiently, 2) building understanding from the sponsor perspective thus broadening their perspective and understanding of why sponsors need specific information at a specific time. The workshop facilitators are able to introduce PM terms and processes as practical applicable tools, to increase the likelihood of clinical trial success. The completed workshop evaluation forms confirmed that the objectives of the workshop are being met and the overall quality of the workshop is high. The PM tools used were also provided electronically post workshop to ensure participants have access to the materials on their return to the institution. As the workshop is still in its infancy, the long term effects of the workshop have yet to be identified. The HICT Program plans to offer the workshop up to three times annually.

T 09 Different Competencies and Skill Sets for Regulatory Medical Writers and Publication Writers

Thomas Martin Schindler
Head Medical Writing,
Boehringer Ingelheim Pharma GmbH & Co.KG, Germany

Objective: The study investigated whether the skill sets for Regulatory and for Publication Medical Writers as defined in the recently developed “Pharmaceutical Medical Writing Competency Model” were in accordance with the requirements of employers of medical writers as expressed in job postings. Our analysis confirms that the skill sets required from regulatory medical writers and publication medical writers are distinct. In general, adverts for regulatory writers asked for more advanced skills and a more varied background than did those for publication writers.

Method: The skills mentioned in job postings for medical writers on the EMWA website in 2009 to 2011 were compared with the skills defined by the “Pharmaceutical Medical Writing Competency Model”. The analysis focussed on technical knowledge, technical skills and abilities, and behavioural skills.

Conclusion: We found that the ‘Knowledge, skills, abilities and other characteristics’ section of the Competency Model matches well with the expectations of employers. However, certain essential aspects in the Competency Model are or only rarely seen in job postings. Statistical expertise was asked for from regMW but not from pubMW. Also, for pubMW, knowledge about guidelines was almost never asked for. Job adverts rarely ask for knowledge about standardization initiatives (e.g. CDISC), the ability to conduct literature searches, management of information, the ability to interview for information, or knowledge about publishing standards. Our analysis confirms that the skill sets required from regulatory medical writers and publication medical writers are distinct. In general, adverts for regulatory writers asked for more advanced skills and a more varied background than did those for publication writers.

T 10 Risk-based Centralized Monitoring of Clinical Trials: A Statistical Approach

Mukta Tripathi, MS
Manager Biostatistics, Santen Incorporated

Objective: To develop and employ statistical approaches in the centralized monitoring of multicenter clinical trials based on key risk factors and critical efficacy and safety parameters to assess the site performance and data quality.
Method: In order to assess the site performances and data quality, a list of risk factors were identified. Based on these factors, statistical indices were derived for qualified site. These indices give quality scores to a site for a variety of study parameters, such as adverse events, protocol deviation, subject dropout, screen failure, time to subject randomization, query, query response time, data entry delay, visit duration, misrandomization, and study medication compliance. For site performance, a matrix was created based using these indices and a final score is derived from the matrix to assess site performance. In addition, data quality was also assessed by statistical monitoring of critical endpoints.

Conclusion: The initial efforts to implement centralized remote monitoring for multicenter studies is an emerging field within the paradigm of clinical trial monitoring that can potential alter monitoring in near future. This has been a collaborative effort by members of the biometrics and clinical operations study team. Although there were changes to proposed methodology during the course of the studies, the overall experience with centralized monitoring has been positive and has become a standard practice for future studies.

T 11 Failed Trials and Protocol Design: Is There a Relationship?
Patricia Brown, PhD
Clinical Administrator/Investigator, CNS Healthcare

Objective: As the concern over clinical trial failure and high placebo rates continue, the research industry has voiced a concern that protocol design is contributing to this pressing issue.

Method: This poster outlines five years of completed protocols with the objective to identify if a correlation exists between protocol design and study outcome. The centers reviewed all protocols that had been operationalized by either of their two sites.

Conclusion: Feedback from sites to sponsors and protocol designers regarding the effect of recent increase in patient questionnaires and subjective assessments, number of inclusion and exclusion criteria, delegation of primary efficacy ratings along with other unique procedures is needed in order to ensure the best possible outcome. The industry needs to work together to continue to streamline the clinical trial process in order to produce successful trials and be able to improve drug options.

T 12 The Evolving Oncology Clinical Trial Landscape in Asia: 10 Year Trend
Anish Sule, MD
Feasibility Manager - Asia
Feasibility Site Identification, Quintiles Transnational Corp., India

Objective: As the concern over clinical trial failure and high placebo rates continue, the research industry has voiced a concern that protocol design is contributing to this pressing issue.

Method: We examined our database to determine how clinical development in oncology in Asia has changed over in the past ten years. We analyzed our clinical trial database as two time blocks: from the beginning of 2001 to the end of 2005 (2001-05), and from the beginning of 2006 to the end of 2010 (2006-10). Clinical trial data was collected in 14 countries in Asia-Pacific, including Japan, the Republic of Korea, China, Hong Kong, Taiwan, Thailand, Vietnam, Malaysia, Singapore, the Philippines, Indonesia, India, Australia and New Zealand. The data was analyzed descriptively to examine the number of oncology clinical trials, the tumor types investigated and the natures of trial sponsors.

Conclusion: Our results confirm oncology trials in Asia have undergone a quantitative and qualitative change over the past decade and thus will impact strategic planning of the future clinical development and research in Oncology.

T 13 Anxiolytic-like Effect of Beta Receptor Agonist Amibegron May be Related to Interaction of Serotonin Receptor Subtypes
Pelin Tanyeri, MD
Assistant Professor, Sakarya University Medical Faculty, Turkey

Objective: Anxiety disorders are the most common and prevalent behavioral disorders with high comorbidity rates. This study is aimed to investigate the effects of the first selective β3 adrenergic agent amibegron on anxiety and also the involvement of different serotonin receptor subtypes in this effect.
**Method:** We used the serotonin 5HT1A receptor antagonist WAY-100635 or serotonin 5HT2A-2C receptor antagonist ketanserin or serotonin 5HT3 receptor antagonist ondansetron in the elevated plus maze test.

**Conclusion:** In conclusion, amibegron exerted significant anxiolytic-like effects in the mice EPM test which was as effective as diazepam. This effect of amibegron may be mediated by an interaction with serotonin 5-HT1A, 5-HT2A-2C and 5-HT3 receptors.

**T 14 What Are the Attributes That Companies Believe Would Help Agencies to Make Quality Regulatory Review Decisions?**

Larry Liberti, MS,RPh,RAC  
*Director, Centre For Innovation In Regulatory Science (CIRS)*

**Objective:** Characterise the regulatory practices that can be used by emerging market (EM) agencies to ensure quality decisions; Identify activities believed to be beneficial and add value to the regulatory process; Outline key attributes that enable a transparent, timely, predictable and good-quality review.

**Method:** We surveyed global pharma companies involved in the EMs to identify attributes they felt enable regulatory review in terms of timeliness, predictability, transparency, and quality and to rate regulatory agencies for these attributes. Results from the 9 responding companies are presented.

**Conclusion:** It is well established that the elements of a good quality review are timeliness, predictability, transparency, and that it is important that the process that an agency undertakes whether to review a new medicine or in its daily activities is efficient and effective. This approach to quality has been embedded in many agencies with the adoption of Good Review Practices and Good Review Management Practices. A good decision framework incorporates creative do-able options; access to meaningful, reliable information; clear values and tradeoffs; uses logically correct reasoning; and makes a commitment to action; it provides the basis for a standardised defensible decision-making process. Therefore, the decision processes within an agency need to be well characterized, embedded in the agency's activities, used by all level of personnel across all aspects of the dossier review and be reflected by the perceptions of external stakeholders. After calculating the responses from 9 responding companies, the majority indicated that the quality of review at agencies in 22 jurisdictions was considered as either “good” or “fit for purpose”, although specific jurisdictions received “poor” or “unsatisfactory” ratings for specific characteristics. Respondents were also asked to comment on points of excellence as well as areas for improvement in specific agency performance. Using these results, we plan to develop reports that would inform each agency of areas in which they excel as well as provide them with recommendations for improvement of their processes and performance. We plan to use the results of this study to drive conversations with regulatory agencies and to focus more specifically on the top 10 enablers to drive a future research.

**T 15 Quality Systems for Contract Clinical Supply Operations: Using Risk Analysis to Meet Global Requirements**

Karen Bossert, PhD,RPh  
*Vice President, Scientific Affairs, Lyophilization Technology, Inc.*

**Objective:** Provide an overview of quality systems required for contract manufacture of clinical supplies, using a risk-based approach to define the minimal requirements to provide flexibility for a range of customers and products, while meeting the regulatory requirements of a global regulatory environment.

**Method:** Using the experience as a CMO focused on sterile products, data were compiled from customer batches ranging from small innovator firms to established, multi-national companies, each with unique perspective and approach to meeting regulatory requirements for clinical supplies at each phase. Product types span a wide range, from conventional small molecules to vaccines and conjugates. Principles of risk analysis were used to identify areas where rigid infrastructure was required to maintain an appropriate state of control in manufacturing operations. Best practices identified from regulatory requirements of markets served were implemented throughout the organization.
**Conclusion:** Contract manufacture represents a challenge in defining adequate requirements to maintain a state of control, while accommodating the needs of a varying customer base. Principles of risk analysis within the manufacturing operation can be used to identify areas where rigid infrastructure is necessary in quality and operational systems, and where flexibility can be achieved. Regulatory expectations from a global environment can be used to identify best practices which will enhance quality systems.

**T 16 So You Have a CTMS, Now What? Using Technology to Optimize Clinical Operational Processes - the DAIDS RSC Experience**

Idongesit Essiet-Gibson, PhD,MPH  
*Health Specialist / COR, National Institutes of Health (NIH)*

**Objective:** How to leverage a Clinical Trial Management System (CTMS) - the NIH/NIAID/Division of AIDS Enterprise System (DAIDS-ES) to optimize efficiencies in a multi-stakeholder, multi-faceted clinical portfolio within a global setting

**Method:** Maintenance and utilization data collected over the last 7 years from our CTMS was used to optimize operational processes, improve data quality and assess levels of compliance of DAIDS collaborators, with regulations and DAIDS requirements, using the system as part of clinical operations. References: Kagan, N. Gupta, S. Varghese, H. Virkar. J Am Med Inform Assoc (2011). “The NIAID Division of AIDS enterprise information system: integrated decision support for global clinical research programs.”

**Conclusion:** DAIDS maintains a large clinical trial portfolio which depends on strong systems and established processes to ensure smooth operations. Analysis of CTMS data supports the development of training and operational initiatives to better meet DAIDS’ business needs, and ultimately promote scientific and medical progress while steadfastly meeting sponsor and regulatory requirements. Instituting operational processes that leverage available technology in the form of a CTMS, like the DAIDS-ES, leads to increased operational oversight and compliance by the sponsor and stakeholders, and to greater efficiencies in clinical operations, as demonstrated by the improved reporting timelines and better data quality observed by the DAIDS RSC. Increasing awareness of DAIDS collaborators regarding processes and the importance of data quality and completeness has led to greater use of the DAIDS-ES which in turn resulted in improved data integrity within the system. This positive cycle continues to enhance the Division’s ability to fulfill its mission to help bring an end to the HIV/AIDS epidemic.

**T 17 Measuring Outcomes in Phase 1 Clinical Trials**

Mary Gaylord, MBA,MLIS  
*Eli Lilly and Company*

**Objective:** To identify potential patterns in Phase I clinical outcome measurement.

**Method:** An analysis of more than 7,700 Phase I clinical trials from the ClinicalTrials.gov website was conducted to gather insights into how clinical trial results are measured. A text-mining algorithm was applied to extract key words from outcome measures.

**Conclusion:** Since primary outcome measures typically focus on the safety and tolerability of new drugs, secondary outcome measures were mined for emerging science. The top 500 most significant concepts from secondary outcome measures were examined, and 7 concepts of interest were identified. The application of quantitative algorithms may provide fresh insights into emerging innovation based on outcome measurement in clinical trials.

**T 18 Advantages and Mass Balance Results Dosing [14C]-Oncology Drugs to Normal Healthy Volunteers: Compiled Data from 22 AME Studies**

Robert George Kochan, PhD  
*US Clinical Pharmacology Radiation Safety Officer, Covance Clinical Development Services*

**Objective:** The advantages and mass balance results from [14C]-absorption, metabolism, and excretion (AME) clinical studies are summarized after dosing 4 to 8 normal healthy volunteers (NHVs) in 22 separate [14C]-AME studies involving administration of a [14C]-radiolabeled oncology investigational drug.

**Method:** [14C]-oncology drugs were dosed in NHVs for 16 different Pharma by Covance CRU, approved by an IRB and radiation safety committee.
NHVs were consented prior to any study-related procedures. Subjects were confined until discharge criteria were met based on “real-time” radioanalysis at Covance Labs.

**Conclusion:** Oncology drugs predominated (22 out of 94 [23.4%]) as the drug category in all 14C AME studies conducted at Covance CRU (Madison, WI) between February 2009 and February 2013. This suggests regulatory agencies increasingly expect pharmaceutical companies who develop novel cancer therapies to generate metabolite profiling and mass balance data for their oncology drug. Based on the compiled data, >85% of the administered [14C] was recovered in NHVs for 85% of the oncology AME studies conducted at Covance CRU. These mass balance/recovery results are a strong justification for using NHVs as the preferred study population in [14C]-oncology drug AME studies. Also, dosing of NHVs has become more feasible due to the less cytotoxic and more target-specific nature of the chemotherapeutic agents being developed. The use of NHVs to ensure adequate mass balance/recovery may be increasingly important as pending guidances are issued by the regulatory agencies that are specific to the safety testing of drug metabolites (MIST) for cancer therapies. Recent European Medicines Agency (EMA) guidelines (effective January 2013) recommended that “…in clinical AME studies >90% total recovery of radioactivity be collected in urine and feces and >80% of recovered radioactivity be identified”. If implemented, these MIST and mass balance (% recovery) recommendations will be more easily achieved by studying NHVs since, as our compiled date confirms, rigorous mass balance data can be achieved by dosing NHVs in [14C]-oncology drug AME studies. The reduced AME study set-up time (4-week recruitment/3-4 week screen timeframes) and reduced AME study costs when using NHVs instead of cancer patients is clear. Therefore, if the oncology drug dose chosen is safe and well tolerated, then using NHVs in [14C]-oncology drug AME studies has the potential to substantially reduce study time and overall AME study costs while providing far more accurate and robust metabolite assessment (MIST) and mass balance data.

**T 19 Impact of Public Comments on Prescription Drug Benefits in Essential Health Benefits Final Ruling**

Justin Balint, PharmD  
Post-Doctoral Fellow, Oncology Advocacy and Policy, Rutgers, The State University of New Jersey

**Objective:** To analyze key trends in public comments submitted on the essential health benefit (EHB) proposed ruling relating to prescription drug benefits from healthcare reform stakeholders and determine effectiveness of public comments on final ruling.

**Method:** Public comments submitted to CMS on EHB proposed ruling (CMS-9980-P) were downloaded from regulations.gov. Comments submitted on behalf of healthcare reform stakeholders were analyzed to determine positions regarding prescription drug benefits to find trends across the healthcare industry.

**Conclusion:** Prescription drug benefit language in essential health benefits were minimally affected by public comments submitted by key stakeholders regardless of some very key trends in messages across the health care industry. Patient advocacy groups, professional societies, and manufacturers were greatly aligned on many key comments, whereas managed care companies offered key differences in their approach to prescription drug benefits coverage.

**T 20 With the Changing Life Sciences and Regulatory Landscapes: Evolutions in Drug Safety and Pharmacovigilance Operating Models**

Glenn Carroll  
Senior Manager, Deloitte Consulting LLP

**Objective:** To showcase the different drug safety and pharmacovigilance operating models used by Life Science companies to drive productivity and maintain license to operate.

**Method:** A maturity model of safety operations will be described, progressing from developing to enhanced. Case studies will demonstrate key components of the different operating models that various leading life sciences companies employ to drive productivity into their organization while maintain license to operate.

**Conclusion:** Companies can streamline their global PV footprint through a new service delivery model based on a global hub and regional spokes.
T 21  New Survey Data Results: Patient Preferences for Reminders in Clinical Trials With Patient Diaries

Eric Ross
Associate Product Manager, Patient Management & ePRO, Almac Clinical Technologies LLC

Objective: Survey data results will be shared to define patient preferences for receiving reminders in clinical trials, aiming to optimize patient reminder strategies to improve compliance and data quality through an enhanced patient experience.

Method: A comprehensive, global, internet-based survey of ~400 patients who participated in at least one clinical study in the past two years that required patient diaries was completed in Nov 2012-Feb 2013 as a follow-up to a study that took place in 2010.

Conclusion: Patient preferences for reminders, related to diaries and other study tasks should be given careful consideration. Incorporating optimal reminder strategies can clearly influence the patient experience and positively affect both compliance and data quality. With today’s technology advances, study design must keep pace with patients’ behaviors and preferences when developing effective reminder strategies.

T 22  Developing Site Monitoring Triggers to Support Risk-based Monitoring

DeAnn S. Hyder
Operational Analysis Director, Quintiles Inc.

Objective: Develop site monitoring triggers as one component of implementing a risk-based approach to monitoring trials; apply results of data and process analyses to understand areas of site monitoring risk, develop and pilot triggers, optimize thresholds, and design an automated alert system.

Method: The work includes process design, statistical analyses and simulations, and new tools to enable a suite of site monitoring triggers. The development was driven by our process design team, with collaboration from customer leaders, operational and analytics experts, and IT business analysts.

Conclusion: Site monitoring triggers and alerts are a key enabler of risk-based monitoring, complementing other novel, streamlined site and data monitoring techniques. However, the implementation of optimized and automated site monitoring triggers requires a rigorous, multi-phased approach. By combining the knowledge of industry professionals with process analysis and design, statistical analysis and simulations, and new automated alert technology, we are able to implement an optimized site monitoring process. The new process, in turn, allows us to better identify potential safety and quality concerns associated with monitoring sites, while balancing risk identification and risk management against cost savings.

T 23  The Use of Compliant Text Messaging to Increase Patient Engagement in a Study Comparing Oral Contraceptive Symptoms

Christopher D. Watson, PhD
Product Manager, Exco InTouch, UK

Objective: To demonstrate increased patient engagement using text messaging in a double blind, randomised active controlled, parallel-group worldwide study comparing the hormonal withdrawal associated symptoms of two oral contraceptives in 594 subjects.

Method: A compliant text message reminder service was offered to subjects in the study, the alternative being a daily telephone call from sites. Subjects received a daily message before 9am reminding them to take their medication and complete a paper diary, as well as additional reminders for site visits.

Conclusion: A centralised subject engagement strategy was essential for this relatively short, but intensive study, without which the specific subject population was at risk of not completing their diaries, not taking all tablets and failing to attend visits. The complexity of the site completing daily calls to all subjects, prior to 9am, would have resulted in both a high resource requirement and a logistical challenge given the timing of contact. The preference
for this simple and non-intrusive means to remind them to take their daily medication and guide them through the study was evident as 100% of subjects offered the service chose to use it in preference to a daily telephone call. The results show that receiving compliant text messages (i.e. in line with data protection requirements) was successful in increasing patient compliance - both when compared to the group selecting daily telephone calls (where low uptake number meant it is difficult to draw a statically significant conclusion), and compared to typical industry figures of 47-70% medication compliance over a single cycle. Additionally it is important to note that beyond the logistical challenge of implementing daily telephone calls, the high uptake of the text service provided a clear return on investment for the sponsor company. It is estimated the daily telephone call option (each to be made prior to 9am) would have cost a minimum of $207,900 for the entire subject group (594 subjects x 10 mins/ call x 105 days x $20/hr nurse contact, or x 112 days), whereas the entire cost of the compliant text message service was $135k. In summary, the compliant text messaging service provided a simple and non-intrusive method of reminding subjects to take medication and complete their diary and delivered 80% perfect medication compliance. It also ensured sufficient data points were captured to enable data analysis of the study, as well as generate over $70k saving for the sponsor company.

T 24 Monitoring without SDV or Regulatory Document Collection: The Monitor’s Critical Role and How It Has Changed
Christine Riley-Wagenmann Consultant

Objective: The Goal of this Abstract is to define how the Monitor’s role is changed when electronic source and electronic Site Files remove most of the Monitor’s traditional site-based activities in a pivotal Phase III trial.

Method: We implemented a combination of electronic systems to collect Source Data directly, review informed consents remotely, and manage all site regulatory documents electronically. The Monitors for this study had very different responsibilities than they have in a traditional trial. This poster will demonstrate the changes in monitor’s responsibilities, staffing, and training using this Risk-Based Monitoring approach.

Conclusion: Implementing electronic systems to conduct risk based monitoring completely changes the monitor’s responsibilities. When SDV and regulatory document collection was eliminated from the monitor’s role, the monitor spent significantly more time on training and followup of findings identified through subject, site, and study level trend reviews. The Monitor’s role as site liaison becomes increasingly important as does the monitor’s responsibilities in training and influencing behavior. Different skill sets and staffing are needed using this risk-based monitoring model. Monitors

T 25 Advancing Patient Registry Methodology with an Outcome Measures Framework
Jannette Karl, MBA,PMP Senior Product Manager, Quintiles Inc.

Objective: The goal of this project was to develop a prototype of an Outcome Measures Framework (OMF) for use within the Registry of Patient Registries (RoPR), to characterize and support efforts to standardize the outcome measures currently used in patient registries.

Method: Design requirements for the OMF were gathered and refined through in-person meetings and user acceptance testing. Over 110 stakeholders participated from a broad range of backgrounds, including clinicians, registry sponsors, patients, researchers, payers, and regulatory and funding agencies.

Conclusion: The OMF is intended to collect and display information on outcome measures used in patient registries, with the goals of characterizing what registries currently collect and supporting long-term efforts to standardize outcome measures. If the OMF is incorporated into the RoPR or another similar system, the
Data collected would enable future projects to accurately characterize the current use of outcome measures in registries and to develop informed, feasible approaches to standardization. Standardization of outcome measures and data elements would facilitate the efficient use of research resources and especially benefit patients, clinicians, researchers, and funding agencies involved in designing patient registries or using registry data in quality improvement programs, patient-centered outcomes research, and comparative effectiveness research. Ultimately, these efforts could promote collaboration, reduce redundancy, and improve efficiencies of new registries using standardized data elements.

**T 26  Spontaneous Ventricular Arrhythmias in Early Clinical Trials: a Report from a Single and Repeated Ascending Dose Study**

Antonio Ferrari, MD
Corporate Cardiac Leader, Chiesi Farmaceutici S.P.A., Italy

**Objective:** The aim of this study was to review the incidence of spontaneous VA in an single and multiple ascending dose clinical trial with an intensive Holter monitoring schedule.

**Method:** The primary objective of the single centre clinical trial was to assess the safety and tolerability of single (SAD, seven dose levels) and repeated (MAD, five dose levels for seven days) ascending doses of a compound compared to placebo when administered to male HVs. There were two Holters for each subject in off-drug conditions, one at screening and one at Day -1. VA occurrence time was compared to individual maximum drug concentrations (Cmax).

**Conclusion:** The occurrence of ventricular runs was low and in line with that reported in the literature (10 out of 124).

**T 27  Gamification in the Pharmaceutical Industry: An Innovative Approach to Education and Awareness Among Patients and Health Care**

Boas Nahm, PharmD
Rutgers University

**Objective:** To identify gamification tools used in the pharmaceutical industry to increase education and awareness among patients and healthcare practitioners.

**Method:** Results: The present report only focuses on NSVT runs, defined as at least three consecutive beats of ventricular origin, excluding isolated and couplets of VA. A total of 124 volunteers were screened, and NSVT were observed at screening in five Holter recordings out of 124 (four subjects not randomized and one subject randomized). Conclusions: The occurrence of ventricular runs was low and in line with that reported in the literature (10 out of 124). Ventricular runs in these HVs were consistently short and monomorphic, with a predominant left bundle branch block pattern, with a long coupling interval of the first ventricular beats. The use of both systematic screening Holter and additional 24-hour recordings before dosing allows the determination of the “background frequency” of such episodes in off-drug conditions and so permits a more robust evaluation of drug effects.

**Conclusion:** There is no universal or direct portal where patients, health care practitioners, and the general public may access gaming tools provided by the pharmaceutical industry. Additionally, great disparity remains in the avenues and methods these 14 pharmaceutical companies utilize to execute gamification and social media platforms, based on our research of these respective company websites.

**T 28  Characterization of Renal Biomarkers for Use in Drug Development: Biomarker Evaluation in “Healthy Volunteers”**

Stephen Furlong, PhD,MSc
Safety Science Lead, AstraZeneca Pharmaceuticals LP

**Objective:** The goals of this study were to evaluate renal biomarkers in typical clinical phase I healthy volunteers to 1) determine biomarker reference intervals, 2) determine inter and intra-assay variability, 3) determine influence of gender and 4) compare assays from different vendors.

**Method:** Urine samples from twenty male and nineteen female ‘healthy’ volunteers collected on Days 1, 2, and 3 were evaluated using multiplex and singleplex assay platforms to determine reference ranges, inter- and intra-subject variability.
Conclusion: Several preclinical biomarkers have been qualified and accepted by the health authorities for detecting drug-induced kidney injury during toxicological testing. Validated human assays for many of these biomarkers have become commercially available and so the next step was to understand the characteristics of these biomarkers in healthy volunteers so we can better understand how to interpret their use for clinical application. This is the first study describing a normal reference range, the inter- and intra-assay variability, the influences of gender, and comparison of assays from different vendors from the urine of a typical healthy volunteer population used in the earliest safety studies of drug development.

T 29  Asian Investigators Enrollment Prediction: An Assessment of Accuracy Against Actual Performance

Elvira Zenaida Plata Lansang, DrMed
Quintiles East Asia Pte Ltd, Singapore

Objective: The main objective of the study is to assess the accuracy of recruitment forecasts for clinical trials at the feasibility stage.

Method: Asian investigator recruitment estimates in projects in Asia Pacific between November 2009 and June 2012 were reviewed and compared to actual enrollment statistics.

Conclusion: Investigators’ enrollment estimations were often overly optimistic and should not be the sole basis of the recruitment rate proposed.

T 30  Embracing Social Media and what it means for maintaining Compliance

Kelly Lyn Traverso
Manager, Deloitte Consulting LLP

Objective: We will present our assessment approach that engages an organization to identify and understand the value drivers for adopting a PV social media strategy. We look at key impact activities that will improve and enhance an organizations social media monitoring and reporting activities as related to AE compliance.

Method: We will provide information on our 3 stage approach focusing on assessing, analyzing and defining social media key attributes for monitoring opportunities and enhancements. Additionally we will focus on tools used to perform this assessment.

Conclusion: Conclusions including results from a social media benchmarking survey will be presented that will highlight the importance of adopting a PV social media strategy.

T 31  Return on Innovation Investment for Life Science Technologies

Andy MacKelfresh
Business Systems Analysis Specialist, PPD

Objective: The objective of this poster is to illustrate the positive financial return which is inherent but not always visible in innovation, and which is demonstrated through a study of real world technology products that were taken from idea to implementation via a unique innovation process model.


Conclusion: The results of the study provide evidence of the financial value of innovation. The results also show the value of the less tangible aspects of innovation. The implication is that our industry should continue to fuel innovation investment. This continued investment logically leads to an expanse of future innovative pathways; therefore, the results of this study warrant future studies to examine how best to position our industry to accept and enable innovation.

T 32  Comparative Safety of Second-Generation Antipsychotics and Risk of Pneumonia

Sandhya Mehta, PhD,MS
Health Science Researcher, Inovalon, Inc.

Objective: Previous studies have documented increased risk of pneumonia with antipsychotics in the elderly; however differential risk across individual atypical antipsychotics remains unaddressed. This study examines the effect of individual atypical antipsychotics on risk of pneumonia in elderly patients.
Method: Study Design: This population based retrospective cohort study was conducted using a large nationally representative administrative claims database (2005-2011). Setting: The study population included elderly patients (65 years and older) taking atypical antipsychotic agents. Patients were included in the cohort if they were new users (no fill of atypical antipsychotics in the first six months of the study period) of atypical antipsychotic agents and continuously enrolled with medical and pharmacy benefits for six months before the initiation of antipsychotic treatment. Exposures: The atypical antipsychotics treatment exposure was measured using prescription claims data. The individual atypical antipsychotics studied were olanzapine, risperidone, quetiapine, ziprasidone, and aripiprazole. Outcome Measure: Risk of fatal or nonfatal diagnosis of pneumonia was examined based on ICD-9 CM codes. Statistical Analysis: The multiple propensity-score adjusted Cox proportional hazard model was used to examine risk of pneumonia within one year of follow up period. The patients were censored at the time of event (diagnosis of pneumonia), when they were switched to any other antipsychotic agents, or at death, disenrollment within one year, or reached the end of the study period.

Conclusion: This large population based study of new atypical antipsychotic users suggests that use of risperidone and olanzapine increases risk of pneumonia compared to use of quetiapine in elderly patients after adjusting for factors associated with a greater risk of developing pneumonia.

The heterogeneity of atypical antipsychotics with respect to their neurotransmitter receptor affinities and anticholinergic actions supports the differential risk of pneumonia observed in this study. This study provides new information about the comparative risk of pneumonia associated with different second-generation antipsychotic agents to support optimal treatment decisions. Clinicians should consider the relative safety for elderly patients who are at high risk for developing pneumonia in selecting the most appropriate medication, carefully weigh the potential risks and benefits, and closely monitor all elderly patients treated with atypical agents for increased risk and incidence of pneumonia.

T 33 Consequences of Non-compliance to Osteoporosis Medication Among Osteoporotic Women

Ankita Modi, PhD
Director, Merck & Co., Inc.

Objective: To examine consequences associated with non-compliance to osteoporosis (OP) medication in terms of fracture rates and healthcare resource utilization

Method: A retrospective analysis using i3 Invision Datamart (Ingenix, Eden Prairie, MN) from January 1, 2001 to December 31, 2010 (study period) was conducted. Women =55 years old who initiated an OP medication (alendronate, ibandronate, risedronate, zoledronate, raloxifene, calcitonin, teriparatide) during study period and had enrolled in the database for 3 consecutive years: 1 year before the index prescription (baseline), a compliance year (year 1), and a follow-up year (year 2) were included in the study. Subjects were excluded if they had Paget’s disease or diagnosis of malignant neoplasm. Non-compliance to OP medication was defined as medication possession ratio (MPR) <0.8 during year 1 (MPR = total number of days’ supply/365 days). Occurrence of OP-related hip, vertebral, and non-vertebral fracture and healthcare resource use and were assessed during year 2. Logistic regression was conducted to assess the association of non-compliance on occurrence of fractures and healthcare resources, while Poisson regression was conducted to assess the association with number of healthcare events.

Conclusion: Rate of non-compliance was found to be high in a managed care population with osteoporosis. As a result, rate of osteoporotic fractures and healthcare utilization was substantially higher for patients who were non-compliant. The results emphasize the importance of good treatment compliance in order to achieve a treatment benefit and thereby reduce the burden that osteoporosis and associated fractures place on individuals and healthcare systems.

T 34 FDA Trends: Is Your Company Ready for the Next Inspection?

Diana Ye
Principal Consultant
PA Consulting Group

Objective: Companies focus significant efforts on optimization and automation to maintain conformance with advancing regulatory sciences; however,
repeated inspection failures, warning letters, and imposed fines continue to surface. What can an organization do to be audit-proof for the next inspection?

**Method:** Study looks across the industry landscape of regulatory conformance efforts taken to maintain compliance and assessed the categories of existing inefficiencies where FDA finds repeated offense to understand one’s success rate.

**Results:** In a changing regulated environment where global complexity in organizations, product development and manufacturing continue to increase and pressures to maintain bottom line profit becomes more vital, companies within the industry focus significant efforts in optimization and automation. As per conventional thinking, optimization of processes, organizations and technology leads to higher conformance to regulatory expectations.

This study hypothesized that common optimization efforts to ensure regulatory conformance do not always translate to protecting oneself from audits and inspections. A disconnect will remain until the root causes can be identified. This study evaluates the key challenges and areas of deficiencies commonly faced within the industry.

Conclusion: Pharmaceutical, biotechnology, manufacturing and research operations all face various challenges in the regulated life sciences industry, both internal and external. Truly understanding how to be audit-proof will allow the company’s internal operations to function efficiently and facilitate quicker speed to market for their portfolio of products.

**W 01 Inspections: Streamlining Backstage Operations Using the Cloud**

**Suvarna Lakshmi Jetti**  
*Project Manager, Genentech, A Member of the Roche Group*

**Objective:** This poster is aimed to provide an overview of an innovative cloud-based approach successfully used to manage multiple GCP sponsor inspections resulting in time savings, efficient use of resources, streamlined communication and reduced paperwork.

**Method:** During 2011-2012, Genentech used a cloud-based process to manage 3 FDA GCP sponsor inspections. Cloud-based applications such as gDoc and gChat were used to track inspection requests, global team availability and capture lessons learnt in real time.

**Conclusion:** The cloud-based approach in managing inspections offers clear benefits. It is an attractive option for streamlining the backstage operations during an inspection, regardless of the focus of the inspection.

**W 02 Highly-Automated Analysis of QTcI/QTcF in Thorough QT (TQT) Study**

**Pierre Maison-Blanche**  
*Chief Medical Officer, Cardiabase, France*

**Objective:** Aim The scope of this work is to provide insight on the impact of a highly automated approach to determine the QT/QTcF/QTcI corrected QT profile in a cross-over TQT study.

**Method:** Methods Data are derived from a study, in which 47 healthy volunteers (20 males, mean age 29.9 years, body mass index 18-30) were randomized in a cross-over design to four treatment periods: placebo, two doses of an active compound and positive control (400 mg Moxifloxacin single dose). Baseline 24-hour heart rate was recorded to meet recent guidelines for drugs which potentially modifying heart rate. Twelve-lead Holter was recorded during all five periods with an H12+ recording (Mortara Instruments, WI). For each baseline recording, one 10-second ECG was extracted every 5 minutes over a period of 12 hours using an automated tool that optimizes the selection of the ECG on the basis of signal noise and heart rate stability (Antares 2.8.0, AMPS-LLC, NY). These baseline-extracted ECGs were then used to determine the subject-specific QTcI individual correction index (power-law model).

For each of the four on-drug periods, 10 second ECG triplicates were extracted using the same algorithm used for baseline. Two separate sets of extraction timepoints were generated: the first corresponded to strictly controlled time segments when study subjects were to remain in the supine position, whereas the second set was chosen with each timepoint shifted by 4 minutes for 0-1 hour.
timepoints, shifted by 30 minutes for 1-6 hour timepoints, and by 1.5 hours for 8.5-23 hour timepoints, so that the ECGs selected could fall outside the strictly controlled time windows (and with subjects no longer in the supine position).

**Conclusion:** Conclusions Highly and fully-automated analysis is feasible and reliable and ultimately depends on data quality. Moreover in case of low quality extractions the technique can still be performed and still gives reliable results provided that manual adjudication is applied to a limited subset of ECG, our suggestion is 15-20%.

**W 03** Determinants for Predicting Serious Adverse Event (SAE) Rates Across Study Duration in Selected CNS Indications

Dena Cosgrove, RPh  
Director, Safety Aggregate Reporting and Analytics, Quintiles Transnational Corp

**Objective:** When planning a study, both pharmaceutical companies and Contract Research Organizations (CROs) need to accurately predict the volume of SAEs and to resource for this in advance. To help resolve these logistical issues, we examined the relationship between randomization, study duration and SAE numbers.

**Method:** Using an Illustrative data set, three CNS indications, Depression, Alzheimer’s and Parkinson’s disease, were selected for review. Numbers of patients randomized were compared to SAE numbers for study duration. Final SAE numbers for completed trials are publicly available at clinicaltrials.gov.

**Conclusion:** The review suggests that it may be possible to determine SAE rate profiles for specific indications which can then facilitate estimations of study resources for a given indication and study duration. The relative contribution of other factors such as the safety profile of study drug, time of exposure to the drug and expected efficacy drug were not included. Handen examined overall SAE rates for all studies on Clinicaltrials.gov in a 5-year period (1); however, by also establishing a study specific population SAE profile, it may also be possible to compare this to the cumulative profiles in new studies in real time. Where the volume or pattern of SAEs starts to deviate from what is expected for the population, then this would provide an earlier trigger of a safety issue for the study drug rather than waiting for study end and unblinding. For future consideration, the impact of the inclusion of AEs into the population profile may also be considered as well as comparison with extension or open label studies where the patient population is preselected due to perceived efficacy of study drug, and tolerance of it, and where study drug received by the patient is known and placebo element is eliminated.

**W 04** Remote Informed Consent Review: Results of Implementation in Phase III Trial

Penelope Manasco, MD, MS  
CEO, MANA Consulting

**Objective:** The goal was to use electronic systems to efficiently review Informed Consents Remotely for a rapidly enrolling trial.

**Method:** We used electronic site files and electronic source certifications to complete a 25 point checklist for 750 subjects that were screened within 2 months. Informed consents were collected in paper, scanned into an electronic site file, electronically certified, and reviewed within 5 business days of upload and signature.

**Conclusion:** Implementation of remote ICF review resulted in multiple benefits to the sites and the Sponsor. The Sponsor was assured that all ICF’s were present in the electronic Site Files and that they were complete. Issues were identified rapidly (within 2 days) and were addressed immediately -resulting in less rework for the sites and the monitors. The results of the ICF review could be included in the metrics used to guide monitoring visits. This approach can be implemented with no additional technology (other than electronic Site Files) and can be used across multiple countries.

**W 05** Characteristics of a US Rheumatoid Arthritis Cohort: Baseline Data from CORRONA

Katherine Saunders, MS  
CORRONA

**Objective:** Provide descriptive characteristics of CORRONA, a US RA registry founded by rheumatologists and clinical researchers. Patient- and physician-reported measures provide insights into population and disease characteristics, clinical outcomes, prescribing patterns and background comorbidities.

**Method:** US Rheumatology practices are recruited to participate in this longitudinal data collection program. Data are collected during outpatient
Conclusion: In addition to standard quarterly reports providing standard metrics, participating researchers and subscribers to the registry have the ability to collaborate with CORRONA scientific staff to develop ad hoc reports to address specific research questions. The results of these database queries are used for a variety of purposes including publication in peer-reviewed journals, market research, or to facilitate internal decision making. Publication support by experienced academic CORRONA investigators is made available. The CORRONA network of investigators contributes regularly to the body of knowledge available to the rheumatology community through publications and presentations nationally and internationally. In addition, this disease-based registry provides valuable data characterizing this population and providing background rates of comorbidities. These findings are provided to the rheumatology community to close the feedback loop and promote RA scientific discovery.

W 06 A Trio of Talent: Scientific Collaboration Inside a CRO

Margaret Richards, PhD, MPH
Executive Director, Epidemiology and Health Outcomes, PPD

Objective: To establish a flexible, cost-effective and time-efficient set of internal processes within our CRO that would enhance and support collaboration between Biostatisticians, Epidemiologists, and Medical Writers contributing to late stage studies that require a custom mix of these services.

Method: We established a matrix of dedicated and enthusiastic peri- and post-approval study expertise known as the BEAM (Biostatistics, Epidemiology, and Medical Writing) Team. To accomplish this, we drafted a team charter, vetted the charter with executive leadership, identified ‘late stage talent’ (with a high tolerance for uncertainty) around the globe, created distribution lists, and held an early morning WebEx kick-off meeting with all of the volunteers and conscripted individuals in June 2012. The goal was and is to have the BEAM Team’s biostatisticians, statistical programmers, epidemiologists and medical writers come together at the earliest opportunity to map out the most efficient and effective approach to meeting a study’s deliverables. The nature of those deliverables (e.g., for publication only versus submission to a health authority) and the study’s design (e.g., RCT versus a natural history study) determine the ‘RACI’ (responsible, accountable, consulted, or informed) table for each deliverable within the study. Development and production of the protocol, CRF(s), patient survey(s), SAP, TLFs, study report and abstract(s)/manuscript(s) (as applicable) involve a thoughtfully orchestrated exchange of materials between team members. Each team member is responsible for drafting, reviewing, or finalizing each deliverable as determined by the RACI table. The primary objective of this initiative is to produce study deliverables on time, within budget, and to the complete satisfaction of our clients. The secondary objective is an increased level of trust and collaboration among team members who might otherwise compete for resources at the design stage and throughout the course of the study. We are in the process of - as a first indicator of efficiency - comparing study bids before and after the institution of the Team in order to assess whether or not duplication of effort and total cost from the three service areas combined has decreased. Early indications of effectiveness will be captured in a survey of BEAM -contributors, -bidders, and -supported clients to assess levels of trust, collaboration, and satisfaction, respectively. We will also examine the RACI table proposed for each study to assess whether or not it exists and is in use by the Team.

Conclusion: Collaboration within an organization can be compromised by competition for resources among organizational subgroups. Competition for utilization can be especially problematic at CROs when the work is less routinized, roles are less clear, and responsibilities may overlap substantially. We sought to foster scientific collaboration among our Biostatisticians, Epidemiologists and Medical Writers by creating a matrix structure with a clear purpose and thoughtful leadership as a way of increasing the efficiency and effectiveness with which shared deliverables are met. In so doing, we hope to also increase satisfaction with the process and with the outcomes for all stakeholders. Initial indications nine months into the initiative are that we are achieving these objectives.
W 07  Labeling for Devices: A Global Solution

Eileen Kahn, MS
Labeling Associate, Sanofi

Objective: To illustrate experiences with the preparation of labeling documents for devices (class II and III) and how it can be controlled globally.

Method: Use of regulations, guidelines, standards and other labeling for reference.

Conclusion: With global regulations and guidelines leaving room for interpretation, companies need to develop ways of creating Corporate Labeling documents for devices. These documents should be used globally in order to accomplish (as much as possible) global harmonization of local texts. The incorporation of graphics was found to be very useful as it reduces the need for translation. If needed, text can be included with the picture. Also, a “Note to Translator” can be provided to assist the country on how to adapt the information at the local level. With more experience and input from countries and health authorities the process will be modified.

W 08  Microdose Study on Three Aromatase Inhibitors

Toshiyoshi Tominaga, PhD Professor and Director, Center for Drug and Food Clinical Evaluation, Osaka City University Hospital (OCUH), Japan

Objective: To make an early screening of 2 novel aromatase inhibitors (TMD-322 and cetrozole) as an agent for metastatic breast cancer in brain in comparison to the existing anastrozole and to gain experience in conducting one of Japan’s first microdose studies conducted in academic settings.

Method: The study was jointly made by the Osaka City University Hospital and Riken of Japan from 2011 through 2012. Test substances (TMD-322, cetrozole, and anastrozole) were either synthesized or obtained from the outer sources. Oral and intravenous dosage forms of the compounds were prepared according to Japan’s “GMP for Clinical Trial Substances” within the research facilities. An extended single-dose toxicity study was made for TMD-322 and cetrozole in CrI:CD(SD) rats according to ICH M3 guidelines. A cross-over design with a cassette dose mixture was employed in the clinical study. Six healthy male volunteers (age: 20 - 40) were randomly divided into two groups, to which were the oral and intravenous mixtures were administered in a cross-over scheme; one group receiving p.o. mixture and then i.v., and the other group receiving i.v., and then p.o., with an interval of 21 days. The amounts of the drugs in the mixture was determined according to the “Guidance on microdose clinical studies” issued in 2008 from Japan’s Ministry of Health, Labour and Welfare; one hundredth of the minimum effective dose (in this case, 10 micrograms). At a total of 12 (p.o.) and 14 (i.v.) time points within 3 days of the administration, blood samples were drawn from the subjects and the plasma concentration of the substances were measured with LC-MS. Consultation with Pharmaceuticals and Medical Devices Agency (PMDA) was held to seek advice

Conclusion: (1) In view of stable absorption and plasma drug level, the two test substances proved to be less desirable than anastrozole. The series of drugs are also evaluated as potential positron emission tomography (PET) agent with 11C labeling for imaging metastatic breast cancer in brain. For that purpose, penetration of blood-brain-barrier (BBB) should be further studied. (2)An MD clinical trial with cassette dosing scheme proves to be a useful tool for early evaluation of PK behaviors of a series of drugs simultaneously. (3) The investigator-led MD trial was successfully completed with lessons gained including on how to organize and manage an effective team as well as how to consult PMDA regarding its R&D Strategy Consultation Program.

W 09  Current Scenario of Clinical Research Sites in Thailand: A Ground Up Approach to Clinical Site Selection in Emerging Countries

Lisa Maire Saldanha
Director, Feasibility & Site Identification (South East Asia, Korea, ANZ), Quintiles East Asia Pte., Singapore

Objective: To demonstrate how a ground up approach of clinical trial identification in an emerging country like Thailand enables a concrete estimation of number of sites available for a clinical trial from the very start

Method: Data mining of publically available data & Quintiles internal data from 1998 up to October 2012. Categorization of hospitals
based on structure & affiliation and then prioritization based on ability to conduct clinical trials.

**Conclusion:** The 2 categorization parameters ‘hospital structure’ and ‘affiliation’, provided information on the type of patients expected, facilities available and level of interest of healthcare professionals to conduct a clinical trial. The 9 Tiers provided insight of number of sites available for a clinical trial from the very start. This is the reverse of the traditional method of waiting for the protocol and then only looking for the sites and investigators. The efficiency of this process is clear as site identification is only done once as opposed to multiple times in line with the different protocols.

**W 10  Evaluation of Pain Drugs: Role of Undetected Underlying Sleep Pathologies**

**Barry Peterson, PhD**  
Senior Manager, Clinical Affairs, Philips Respironics

**Objective:** The objective was to determine whether underlying sleep pathologies in patients entering a clinical pain trial could have an influence on the change in their reported pain scores in response to the treatment (Haack, et al, Eur. J. Pain, 16: 522-533, 2012).

**Method:** A retrospective analysis was performed on a 5-week placebo-controlled crossover study on 63 patients (67 ± 4 (sd) years old) with osteoarthritis of the knee and a baseline pain intensity score = 4 on a 0-10 scale. The placebo and treatment (celecoxib, 100mg bid) weeks were each preceded by 1-week baselines with a 1-week wash-out period between the drug administration weeks. Sleep and daytime activity were monitored throughout the study with wrist actigraphy. The actigraphy data collected during the first week of the study (Baseline 1) was used to retrospectively partition the group into those subjects whose mean minutes of wake-after-sleep-onset per night (WASO) was less than 60 minutes (normal sleep) and those with WASO>60 min (possible underlying sleep pathology). A meta-analysis of normal WASO as a function of age suggests that 60 minutes is a reasonable upper limit of normal value for this age group (Ohayon, et al. Sleep 27: 1255-73, 2004). Pain was assessed each day using the Western Ontario and McMaster Universities (WOMAC) pain subscale. Changes in reported pain were calculated as the mean WOMAC pain score during the treatment week minus the value during the placebo week.

**Conclusion:** These findings support the hypothesis that a study subject’s underlying sleep quality may influence the outcome of a pain trial. In this case, subjects with sleep quality in a normal range were more likely to respond to treatment than those with suspected sleep pathologies. Therefore, objective evaluations of each subject’s sleep quality status before entering a pain trial could provide valuable information about the true efficacy of the drug and may provide a basis for a more effective treatment design for individual patients in pain.

**W 11  Selective Blockade of RyRIII May Present a Protective Effect against Neuronal Insult in Cell Model**

**Jin Zhang, PhD, MS**  
Post-doctoral Fellow, Dalhousie University, Canada

**Objective:** To apply ryanodine receptor (RyR) modulators under neuronal insult models (CoCl2 and H2O2) to see whether the cell death can be balanced. To find out whether RyR can be a neuroprotective target and which RyR (RyRI, RyRII or RyRIII) exact may have further potential for drug development.

**Method:** PCR were applied to study the expression of RyRs messages. In cell proliferation MTS assays, RyR modulators were applied with insult to see if the cell death can be reduced. This work was done in Cardiff University, designed by both authors, supervised by Prof. Wann, and performed by Dr. Zhang.

**Conclusion:** This study has the following findings: 1.RyRIII message is the expressed in neuronal cell lines but not in MG-63 and its expression is much increased when neuroblastoma cells are differentiated into neurones. 2.The cell line with higher RyRIII message expression was more sensitive to both hypoxia mimetic (CoCl2) and oxidative stress (H2O2) insults. 3. Generic blockade of RyRs
(ruthenium red), or selective blockade of RyRI and RyRIII (dantrolene), can protect the cells from CoCl2 insult. But, selective blockade of RyRI and RyRII (procaine and 10 – 100 µM of ryanodine) has shown a negative result. 4. Generic activation of RyRs (caffeine and 10 – 100 nM of ryanodine) may further induce the cell death from CoCl2 insult.

All of those findings above have indicated that RyRIII may play a very important role in neurones. And, the selective blockade of RyRIII can be neuroprotective. Selective blocker of RyRIII, which is not available in either clinic or research currently, may have a potential to be developed as a strategy of the possible treatment to neurodegenerative diseases.

**W 12 Development of Guidance for Handling Adverse Drug Reaction Reports at National Level**

So Hyeon Ahn, MSc
Senior Researcher, Korea Institute of Drug Safety and Risk Management, Republic of Korea

**Objective:** To develop a guidance to manage adverse drug reaction (ADR) reports received by the national pharmacovigilance center (Korea Institute of Drug Safety and Risk Management, KIDS) in Korea.

**Method:** We reviewed items in ADR reports to be adopted as criteria for classification of the reports received by KIDS. We examined ways to manage expedited and non-expedited reports, making reference to local and global regulations regarding pharmacovigilance.

**Conclusion:** Implementing algorithm for processing ADR reports can facilitate classification and prioritization of the vast quantity of ADR reports efficiently. Prioritized information can be examined to embark on necessary actions in a prompt manner, especially regarding expedited reports, and lead to proactive regulatory actions.

**W 14 Randomized Placebo-Control Trial of Arginine Therapy for Treatment of Children with Sickle Cell Disease and Vasoocclusive Pain**

Claudia Morris, DrMed,MD
Associate Professor of Pediatrics and Emergency Medicine, Emory University School of Medicine

**Objective:** Arginine is the obligate substrate for nitric oxide (NO) production, and an acute deficiency of both arginine and NO is associated with pain in sickle cell disease (SCD); we conducted a RCT of arginine therapy in children with SCD hospitalized for pain to determine safety and efficacy of L-Arginine.

**Method:** 38 children with SCD hospitalized for 56 pain events at Children’s Hospital Oakland in years 2000-2008 were enrolled into this RCT of parenteral/oral L-arginine (100mg/kg TID) or placebo for 5 days or until discharge. Outcomes included total opioid use (mg/kg), pain scores and length of stay (LOS).

**Conclusion:** This is the first randomized placebo-control study to demonstrate benefits of arginine therapy in children with SCD hospitalized for severe pain. Arginine therapy represents a novel and promising nutritional intervention for SCD. Use of parenteral arginine therapy should also be considered in the treatment of VOE in the emergency department setting prior to hospitalization, although further investigation is warranted. A reduction of narcotic use by over 50% observed in this study is remarkable, together with lower pain scores at discharge and a trend towards a decreased LOS. This is the first successful intervention for sickle cell-related pain that targets the underlying mechanism of vaso-occlusion through a promising NO-based therapy. Arginine is a safe and inexpensive intervention with narcotic-sparing effects that should be considered as an adjunct to standard therapy for VOE. A larger-scale, multi-center trial is needed to confirm our observations.

**W 15 Best Practices for Optimizing Global Biospecimen Collections for Prospective and Retrospective Clinical Research**

Kristina Robson
Senior Director, Comprehensive Solutions, BioStorage Technologies, Inc.

**Objective:** To detail the complexities of managing temperature-sensitive biospecimens and the vast amount of data associated with these materials across every stage of their lifecycle and highlight the role properly preserved biospecimens have in accelerating drug discovery and developing targeted therapies.

**Method:** Sample management begins even before the sample exists, and continues past sample destruction. It is imperative to have a detailed understanding of sample chain of custody and storage, as well as the necessary associated data for
ensuring sample utility in the future. Sample processing is a further critical component, as derivative tracking and generation are also variables that cannot be overlooked in the sample lifecycle. Therefore, the poster will outline processes for reducing variables throughout the complete sample lifecycle and also highlights technological advances that streamline management of clinical data.

**Conclusion:** To develop new, more targeted therapies requires knowledge about the genomic make-up and disease biology of an individual that can influence the selectivity and response to therapy. A significant obstacle in the effort to find new treatments for diseases has been the lack of well-annotated and uniformly collected biospecimen research samples and associated clinical data. Historically, biospecimens have been collected to support clinical analysis and data generation for regulatory submission or stored for a future research purpose. These research samples are often stored in many different locations and sample quality is often uncertain due to uncontrolled preanalytical variables at the collection site, during logistical transport or at storage locations. In addition, many research samples lack consistent recording and storage of patient consent coding following initial clinical trial collection and analysis which renders these samples useless for future research. However, research sample collections that are centralized, well-annotated and properly consented serve as critical assets that have both scientific and financial value. Innovative sample bioprocessing methods prior to sample storage are improving the quality of samples sent to the research bench and delivery of bioinformatics data which speeds new drug submissions and approvals. Therefore, it is paramount for biopharmaceutical companies of all sizes to have a profound understanding of sample management strategies, innovative processing methods and virtual technology solutions that can help ensure the long-term preservation and optimization of research sample assets.

**W 16  Comparison of the US Package Insert and the EU Summary of Product Characteristics**

Jay Bordoloi, PharmD  
Post-Doctorial Fellow, Genentech, A Member of the Roche Group

**Objective:** To evaluate the qualitative and quantitative differences between the USPI and EU SmPC for a select number of drugs and identify insights into how and what type of product information the FDA and EU communicate to HCPs.

**Method:** A standardized data collection tool was used to evaluate US and EU product information for nine drugs in three therapeutic areas. The drugs were selected due to their Physician’s Labeling Rule (PLR) Format for the USPI and by the availability of SmPCs; allowing for a consistent comparison.

**Conclusion:** The clearest areas (100% Yes) where significant differences were identified between the USPI and SmPC were in Safety, Black Box Warning, and Order of Information. The USPI placed importance in identifying the incidence of patients experiencing adverse events in trials by percentage, whereas the SmPC presented the information by frequency. This difference in presentation of information may influence how HCPs interpret adverse event information. In terms of the presentation severe adverse events (assessed by content of black box warnings), there was a significant difference as the USPI boxed warning very prominently advertised severe warnings, whereas the SmPC had the same warning listed in the same format as the other warnings. HCPs may be more likely to be aware of a severe product warning by reading a USPI of a product compared to the same product’s SmPC. Order of information was another significant difference between the USPI and SmPC. The highlights section for the USPI, in particular, was a significant difference that may aid HCPs in more quickly finding the product information they are seeking. Indication, Clinical Trials, and Endpoints were other areas it appeared significant differences existed between the USPI and SmPC. The USPI tended to have more indications than the SmPC, which may indicate differences between the FDA and EMA in their approval process. The SmPC described the clinical trials more in depth; however, the USPI provided more data tables to visually interpret trial results. The difference in indications and presentation of clinical trial data may affect how HCPs interpret product information and therefore,
prescribing of medications.

Limitations of this study include the small sample size and the use of a standardized, but not validated data collection tool. Therefore, further study with a larger sample size and more analysis could provide more information about how FDA and EMA choose to present product information to HCPs.

W 17  Genotoxic Evaluation of a Chloroalcohol Resulting From Acid Degradation of an Oral Pharmaceutical Containing an Oxetane Ring

Andrew Dropsey, MSc
Consultant Toxicologist, Eli Lilly and Company

Objective: The objective was to evaluate the genotoxic potential of a chloroalcohol which could theoretically be formed as a degradant at low pH in the stomach after oral administration of a pharmaceutical agent containing an oxetane ring.

Method: The neat chloroalcohol degradant was evaluated in: 1) Bacterial mutagenicity (Ames) assay; 2) in vitro chromosomal aberration (CAB) assay in CHO cells; 3) in vivo mouse bone marrow micronucleus assay; and 4) in vivo mouse Comet assay to detect DNA strand breakage in the liver, stomach and duodenum.

Conclusion: Chloroalcohol degradants resulting from the opening of an oxetane ring at low pH in the stomach have the potential to be genotoxic. The neat chloroalcohol degradant evaluated in these studies was shown to be positive in the Ames assay and the in vitro chromosome aberration essay and negative in the in vivo micronucleus and Comet assays. As a potential control strategy to ensure human safety, the Active Pharmaceutical Ingredient (API) administered orally to humans in future clinical trials could be enteric coated. In vitro experiments with enteric coated API material in HCl acid (pH 1) show the amount of chloroalcohol degradant generated under the worst case scenario would remain below the Threshold of Toxicological Concern (TTC) of 1.5 microgram/day.

W 18  Recruitment Metrics From a Direct-to-patient Approach to Enroll Patients in a Diabetes Practice-based Research Network

John Reites
Director, Operations, Quintiles Inc.

Objective: The objective of this on-going study is to assess treatment care patterns and uncover ways to improve the quality of care in type 2 diabetes patients by capturing patient-report outcomes (PRO) and clinical data from the patient’s electronic medical record (EMR).

Method: We engaged two (2) EMR companies to contract with physicians to mail information to their patients. Interested patients accessed study details by web or phone. They then consented to provide PRO data every six (6) months and to allow access to their EMR. Physicians and administrators are surveyed annually.

Conclusion: This naturalistic study design is conducted in a real-world setting of primary care practices that may not traditionally be involved in research. The site burden is limited with no mandated therapies and/or treatment transitions over the patient follow-up period of up to 4 years.

Although the study remains on-going, the first 10 months of enrollment suggest that direct-to-patient recruitment into a study that combines PRO and EMR data can be a successful method for enrollment of patients into observational research studies. While we continue to optimize the process and patient-facing study materials to increase the proportion of patients enrolled in the study (currently at 7%), the average number of patients targeted for enrollment per site (currently 27) is in line with expectations. As a result, our experience to date would suggest that the limiting factor to enrollment is the number of sites contracted to participate.

In addition to contracting with additional EMR companies and primary care sites to increase enrollment, moving forward, we will closely follow performance and patient retention metrics within this study design in order to better understand the applicability of the method to longitudinal research.

W 19  Development of a Quality Program for Clinical Research Sites of Brazilian Clinical Research Cancer Network

Debora Cristina Azevedo, MPH
Quality Manager, Brazilian National Cancer Institute – INCA, Brazil

Objective: To propose a quality program for clinical research sites
of Brazilian Clinical Research Cancer Network, with National Cancer Institute (INCA) as coordinator.

Method: A systematic review and a documental analysis were performed. The documental analysis was based on the identification and location of the main national and international guidelines regarding clinical research, including Good Clinical Practice of the International Conference on Harmonization (GCP/ICH), European Directive for conducting clinical trial, Document of the Americas and Normative Instruction number 04 from National Sanitary Surveillance Agency (ANVISA).

In the systematic review a search was carried out in the databases: Medline (via pubmed), Lilacs, Scopus, Web of Science, CINAHL (via EBSCO) and Science Direct through June 2012. The search strategy was adapted for each database. The set of studies identified was exported from original bases to a reference management program (EndNote X1 version) in order to identify and eliminate duplicate studies. Furthermore, additional materials were recovered by manual search in specific journals (Controlled Clinical Trials, from 2002 to June 2012; Clinical Trials from 2004 to June 2012 and The Monitor from 2007 to June 2012) and reference lists of relevant articles for the systematic review. The selection of studies occurred in two stages: the first stage two reviewers independently assessed the titles and abstracts according to the inclusion and exclusion criteria previously established to identify potentially relevant studies. Disagreements were resolved by consensus. In the second stage, potentially relevant studies were full reading also by two reviewers and their selection for inclusion in the review resulted in the fulfillment of the following eligibility criteria: quality standards for clinical research sites or excellence sites or quality program for clinical research sites. Disagreements were resolved by consensus between reviewers. A standardized form was used for data extraction of the studies included in the review. Two independent reviewers extracted and stored the data in Excel software. The analysis and synthesis of the data were presented in a narrative perspective due to heterogeneity of the articles included in the review. Tables and charts were made with categorization of information described in the studies included in the review.

Conclusion: This was the first study in Brazil and Latin America to propose elements for the development of a quality program in clinical research sites. Considering the high costs and inefficiency of the current model of quality assurance developed by sponsors the implementation of quality programs in clinical research sites has been a perspective increasingly considered and recommended to achieve success in the conducting of clinical trials. The systematic review, which selected nine studies showed that the implementation of quality programs in clinical research sites has been a perspective increasingly considered and recommended to achieve success in the conducting of clinical trials.

W 20 The Role of Product Identification Systems in Pharmacovigilance (PV) for Biologics in the Biosimilars Era

Thomas Felix, MD
Director, Regulatory Policy, Amgen Inc.

Objective: To review the role of multiple product identifiers (including brand name, nonproprietary name, lot number, manufacturer, and National Drug Code [NDC]) in anticipation of biosimilars in the US and assess the role of these identifiers in reporting and tracking adverse events (AEs).

Method: Case studies relevant to PV of multisource biologics were identified in peer-reviewed literature, US legislation, FDA regulatory guidance, and MedWatch/CDC safety reports. Robustness and potential utility of multiple biologic product identifiers in the context of the PV system were evaluated.

Conclusion: We conclude that current product identification systems are suboptimal for safety
monitoring. The FDA’s draft scientific guidance for biosimilars requires “adequate mechanisms in place to differentiate between the adverse events associated with the proposed product and those associated with the reference product....” Redundancies are essential to optimal product identification in a complete AE report. Our review of the current US PV system revealed multiple potential biologic identifiers but also found inconsistencies in how and in which databases they are captured. Given the potential for inconsistencies in the PV system, it is prudent to incorporate multiple redundancies into product identification systems to ensure that biologic products can be distinguished from each other when accurate and complete AE reporting requires unambiguous attribution of an event to a product. As indicated above, brand name, NDC, and lot number, while unique, are inconsistently applied for a range of reasons. A solution that also results in distinguishable nonproprietary names for biologic products would complement other product identifiers to ensure accurate and efficient tracking and tracing of AEs to the proper biologic product. Such a nonproprietary name could consist of the reference product INN/USAN combined with a manufacturer-specific prefix and hyphen (ie, manufacturer-product). This naming approach could provide a broadly applicable product identifier that facilitates effective PV.


**Diane Carpentier**  
*Director, Life Sciences Business Development, Optum*

**Objective:** Our objective was to align our non-interventional protocol templates with the post-authorization safety study (PASS) protocol guideline and further enhance these templates with instructions and optional/required design-specific language based on review of various published guidelines/literature.

**Method:** We aligned our templates the Guideline on Good Pharmacovigilance Practices—module VIII (GVP; www.ema.europa.eu) and ENCePP Checklist (www.encepp.eu), reviewed other guidelines (eg, International Society for Pharmacoepidemiology [ISPE; www.pharmacoepi.org], International Conference on Harmonisation [ICH]) for additional language. Typical study designs were identified and we searched the literature for associated design-specific language. Within each template section, potential text was evaluated for inclusion. Identified concepts and language was denoted as additional instructional or sample template text with sample text further marked as required, preferred, or optional text. Templates were further evaluated by the protocol development team participants for usability.

**Conclusion:** By utilizing multiple literature sources, our new templates for PASS studies were enhanced to include additional instructions and suggested text to meet both regulatory requirements and the need to address frequently used study designs, outcomes, and data sources. Our study-design decision tree summarized the variety of potential study designs and included frequently useful study goals and outcomes. With each included study design, common elements were included as required text and design-specific elements were included as suggested text. This additional information was to support the protocol development team in creating the final protocol in a timely manner. We were also able to use these templates when reviewing client-provided protocols and to minimize the risk of potential amendments.

**W 22 What Medical Writers Contribute and What They Need to Know**

**Barbara Stephenson, MSc,RN**  
*President, BJ Stephenson Consulting*

**Objective:** The purpose of the current study is to determine the scope of scientific research and synthesis of various guidelines for the discipline of Regulatory Medical Writing.

**Method:** Various databases (PubMed, Eric, ECONlit, Hubmed, Global Health, FDA, EMA, Health Canada) were searched to determine the extent to which the discipline of regulatory science and its communication through medical writing is documented. Introduction: Accurate and consistent measurement, interpretation and reporting of all data from clinical trials and post-marketing reports are critical for public safety. Regulatory writing involves a myriad of
guidelines from regulatory agencies throughout the world, as well as professional guidelines from professionals interested in harmonizing methodologies for scientific research and reporting results. Those results are used by physicians for prescribing, public policy makers for formulary decisions and pharmaceutical companies for evaluation of existing labeling and marketing judgments.

Conclusion: The medical writer has a key contribution to make in satisfying the expectations of all involved; that is to generate clear, well thought out protocols, analysis plans and reports on those scientific findings. This does not occur in a vacuum, but in a cross-functional team environment with the medical writer as the counterpoint of ensuring the clarity of information across the research spectrum. The pre-requisites to become an excellent medical writer require defining and formalizing. This study explores the existing knowledge and proposes new standards and targeted knowledge bases for medical writers and the discipline of medical writing.

W 23 Preventing Shortages of Biologic Medicines

Sundar Ramanan, PhD
Director, Global Biosimilars Policy, Amgen Inc.

Objective: To explore the root causes of manufacturing-related drug shortages, to relate these reports to the manufacture of highly-complex biologic medicines, and to discuss the quality systems required to avoid such shortages.

Method: Published reports were reviewed to identify manufacturing-related issues that repeatedly led to drug shortages. Manufacturing practices shared by small-molecule drugs and biologic medicines were analyzed. Quality systems required to consistently produce both drugs and biologics were identified.

Conclusion: Biologics are potentially more susceptible to deficiencies in manufacturing quality than injectable chemical drugs. Not only are they subject to the fill-finish contamination risk, but they are also very sensitive to the manufacturing conditions of their active ingredients and to the storage and handling conditions of their final dosage forms. A recent publication by the FDA (Woodcock J, Wosinska M. Clin Pharmacol Ther. 2013;93:170-176) emphasizes that current market dynamics do not recognize or reward higher quality, and this has lead to under-investment in facilities and quality oversight by some generics manufacturers. This in turn has lead to cGMP deficiencies and drug shortages. In order to prevent similar shortages of biologic medicines, manufacturers must implement adequate quality systems, must establish reliable supply chains from raw materials to finished drug products, and must focus on continuous improvements including investments in technology and modernization of production systems for both the bulk drug substance and drug product. Access to information regarding drug quality would assist payers and prescribers as they assess the ability of manufacturers to reliably supply high quality biologic medicines.

W 24 A Prospective Clinical Trial of a Scoliosis Growth Modulation Clip/Screw Device: Initial Safety Results

Joseph Reynolds, MBA
CEO, Spineform LLC

Objective: To determine the safety and early performance of a novel titanium implant designed to redirect spine growth in patients with a progressive deformity in a prospective study, from first use in humans (U.S. FDA Investigational Device Exemption (IDE), www.clinicaltrials.gov Identifier: NCT01465295.

Method: Six patients underwent endoscopic placement of clip/screw implants and were assessed clinically and radiographically. Inclusion criteria were based on high risk for scoliosis curve progression to fusion range of >50°: single main thoracic Cobb angle of 25°-40°, = 10 years, open triradiate cartilage.

Conclusion: A novel clip/screw device was tested in an FDA IDE clinical trial to redirect the spine growth of children with scoliosis and demonstrated acute safety and performance at 3-months postoperatively. No device misplacement or device failure was encountered. Blood loss was minimal and surgical times were low. Growth modulation, an emerging technology, is under development with the goal of arresting curve progression. Additional clinical study is recommended and approved.
**W 25 Comparative Risks of Organ Dysfunction Associated with Individual Antiepileptic Drugs Following FDA Black Box Warning**

Alexis Parente, MA  
Health & Economics Outcomes Researcher, Inovalon

**Objective:** To evaluate the relative likelihood of organ dysfunction associated with individual AEDs in children (aged 2-18 years) and adults (aged 19+) with epilepsy.

**Method:** This retrospective cohort study analyzed patients in a large nationally representative administrative claims database between 2006 and 2011. The sample consisted of Medicaid, Medicare, and Commercial patients continuously enrolled with both medical and pharmacy benefits for 6-months prior to the index fill for an AED. Patients were included if they had a diagnosis of epilepsy (ICD-9-CM 345.X) and had no prior AED fills (new users). Logistic regression was used to follow eligible patients up to six months after AED initiation to assess the relative odds of organ dysfunction.

**Conclusion:** Severe adverse effects resulting from treatment with AEDs is an important consideration in evaluating epilepsy treatment options. Despite the FDA black box warning for valproate, this large sample retrospective analysis found three other commonly prescribed AEDs associated with significantly greater risk of adverse events. This study provides new information about the comparative risks of individual AEDs that can be used to guide optimal prescribing practices for patients with epilepsy.

**W 26 Registry of Patient Registries (RoPR): Supporting Registries for Comparative Effectiveness Research**

Thomas Taylor  
Senior Project Manager, Outcome Sciences, Inc.

**Objective:** The objective of this project was to design and build the Registry of Patient Registries (RoPR), the first searchable, public database designed specifically to provide information about ongoing and completed patient registries.

**Method:** An iterative, stakeholder-driven process was used to determine the requirements for RoPR design and functionality. Based on stakeholder requirements, the RoPR was built, tested, and fully implemented with ClinicalTrials.gov, a well-known existing database for clinical trials.

**Conclusion:** Patient registries generate important evidence on the comparative effectiveness of different diagnosis and treatment options. Until recently, information on ongoing and completed registries was not publicly available in a central location. This made it difficult to determine the current state of CER evidence for a particular disease area, diagnostic test, or treatment, and the potential future body of CER evidence.

By making this information readily available, the RoPR facilitates research collaboration, reduces redundancy, encourages the efficient use of resources, and improves transparency in registry research. Registries are already important tools in generating comparative effectiveness evidence; the RoPR complements and advances this role by providing important summary information about ongoing and completed registries.

**W 27 A Self-service Approach to Reporting Using Dimensional Data Warehouse Architecture**

Arvind Nagaraj, MSc  
Specialist Master (Manager), Deloitte Consulting LLP

**Objective:** There is a need to consolidate different sources of adverse event data into a common platform to serve the needs of regulatory, operations, compliance and point in time reporting and to generate ad-hoc reports. We present a viable integrated dimensional data warehouse platform.

**Method:** An integrated dimensional reporting data warehouse will be described with focus on point-in-time reporting, information management, information access, traceability, auditing and archiving. In addition, a reporting framework and toolset that enables a self-service approach to reporting will be investigated.

**Conclusion:** Conclusions including process flows and model queries will be presented which will highlight an alternative, viable methodology to traditional relational reporting data warehouse.
W 28  Burden of Post-treatment Fractures in Terms of Health Care Cost and Utilization Among Osteoporosis Patients

Arun Krishna, PhD
Outcome Research Scientist, Merck & Co., Inc.

Objective: To examine the burden of post-treatment fractures among osteoporosis (OP) patients receiving pharmacological treatment.

Method: A retrospective matched case-control study using i3 Invision Datamart from 2001-2011 (study period) was conducted. Women 55 years or older who had at least 1 OP medication prescription during study period and continuous enrollment of at least 1 year before and at least 2 years after treatment initiation were included. Patients with Paget’s disease and malignant neoplasms in the study period were excluded. OP medication included alendronate, risedronate, ibandronate, zoledronate, raloxifene, calcitonin and teriparatide. Among patients who met selection criteria, those who had an OP-related fracture within 12 months after treatment initiation were classified into the fracture (case) cohort, and those who had no OP-related fractures within 24 months after treatment initiation were classified into the non-fracture (control) cohort. Index date for cases was defined as the date of first post-treatment OP-related fracture and index date for controls was a random assignment of date based on empirical distribution of index date in entire case cohort. Cases were matched to controls on using propensity scores controlling for patient characteristic such as age, gender, pre-treatment fractures, prior use of gastro-protective agents, NSAIDS, estrogen, and Charlson comorbidity index. Health care resource utilization and health care costs during the 12 months post-index (follow-up) were examined in both groups using McNemar’s test and signed rank test, respectively.

Conclusion: The study demonstrated that there is a significant economic burden associated with post-treatment fractures among OP patients receiving pharmacological treatment. Reduced fracture risk may lower healthcare costs.

W 29  The Impact of Tyrosine Kinase Inhibitors on Stage IV Distant Renal Cell Carcinoma Overall Survival

Ashley Brower
Student, Ernest Mario School of Pharmacy, Rutgers University

Objective: The objective is to determine the impact of new TKI therapy (sorafenib and sunitinib) and guideline changes on the overall survival of Stage IV (Distant) Renal Cell Carcinoma in the United States.

Method: Utilization of the National Cancer Institute SEER Database and a literature review of guideline changes and pivotal clinical trials to determine the impact of new tyrosine kinase inhibitor therapy on the overall survival of renal cell carcinoma. There was a comparison of two treatment arms: (1) Cohort A: Overall Survival of Stage IV Distant RCC Patients from 2001-2003 (before TKI treatments were available) and (2) Cohort B: Overall Survival of Stage IV Distant RCC Patients from 2006-8 (after TKI treatments were available) to compare the impact of TKI therapy on overall survival. There was also an incorporated “washout period” between the years of 2004-2005 to account for pivotal Phase III clinical trials of sorafenib and sunitinib, both of which incorporated a significant number of advanced RCC patients. In order to control the two cohorts, there was a comparison of patient demographics, including but not limited to age of diagnosis, sex, and race to determine whether there was a significant difference between patient demographics in Cohort A (2001-2003) and Cohort B (2006-2008). In order to determine statistical significance between patient demographics and overall survival, the two sided z-test was employed.

Conclusion: Research is in progress.

W 30  Factors Affecting Strategies in Asthma and COPD Clinical Trials

Vikki Brandi, DrSc
Director and Respiratory Therapeutic Strategic Lead, Quintiles Transnational Corp

Objective: A proactive survey was conducted to gain insight into current medical practice, standard of care, adherence to treatment guidelines for asthma and COPD, prescribing trends and patient profiles.

Method: Surveys (consisting of 20 questions) were sent to local Quintiles’ country offices and they were able to reach out to KOLs and Investigators, as needed. Of
the surveys sent, 55 responses (100% response rate) were received and data was collated from 3Q to 4Q 2012.

Conclusion: Although disease incidence and prevalence are often perceived as key drivers for recruitment, this is often modified by other factors required per protocol entry criteria, such as the number of previous exacerbations, disease severity and concomitant medication use allowed per protocol. An understanding of current standard of care, compliance with treatment guidelines and approved therapies is paramount to devise a successful operational strategy for an asthma and COPD study/program.

W 31 Application of Clinical Drug Trial Methodology to the Evaluation of Nutraceuticals

Gary Kay, PhD
President, Cognitive Research Corporation

Objective: To demonstrate the utility of clinical trial methodology in evaluating efficacy of a nutraceutical for regulatory approval. To present an example of a study, demonstrating the efficacy of a vitamin/nutraceutical formulation (VNF) for improving concentration, memory and attention

Method: This was a single-center, double-blind, placebo-controlled trial designed for regulatory approval. 96 healthy adults of either sex were randomized to VNF or placebo for 6 weeks. Memory testing and neurocognitive abilities were evaluated with the Rey Auditory Verbal Learning Test (RAVLT) & CogScreen computerized battery.

Conclusion: The study met endpoints and subsequent regulatory review. This example demonstrates the utility of clinical trial methodology to evaluating the efficacy and safety of nutraceuticals. The study showed that VNF improves memory, concentration and attention in healthy adults following six weeks of continuous oral treatment. This effect is particularly pronounced in working memory. The use of the two well recognized tests (RAVLT and CogScreen) was particularly useful in establishing the cognitive findings for VNF and should be considered for future studies with other nutraceuticals seeking similar cognitive claims. The 2 word difference observed between VNF and placebo treated subjects is clinically meaningful and comparable to a decrease of 20 years in cognitive aging.

W 32 Regulatory Systems Assessments in Selected Low-and Middle-income Countries (LMICs)

Hye Lynn Choi
Technical Advisor, Management Sciences For Health

Objective: The objectives of the assessments were to review the current systems and capacity of the national medicines regulatory authorities (MRAs) in the selected countries and identify opportunities for strengthening their regulatory systems to ensure the quality, safety and efficacy of health products.

Method: U.S. Agency for International Development (USAID)-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) and its predecessor Strengthening Pharmaceutical System (SPS) programs used the Regulatory Systems Assessment Tool (RSAT) to conduct structured assessments in Angola, Bangladesh, Guinea, Mozambique, Namibia, and Democratic Republic of Congo (DRC) from 2009 to 2012. The excel-based tool was developed through the adaptation of existing assessment tools including World Health Organization (WHO) national regulatory system
assessments tool, WHO Good Governance for Medicines, United States Pharmacopoeia (USP) rapid assessment of quality assurance and quality control of medicines, and SPS indicator-based pharmacovigilance assessment tool. Components of RSAT include background information on the pharmaceutical sector, regulatory framework, regulatory functions and processes, and monitoring evaluation. The tool enables analysis of options towards reform of regulatory systems to improve efficiency and timely access to health products. The assessment involved reviews of relevant policies, laws, regulations and guidance documents, analysis of regulatory processes, and interviews with key informants at the Ministries of Health (MoH) and MRAs.

**Conclusion:** The regulatory systems in LMICs should be strengthened to improve timely access to safe, effective and quality medicines and to protect public health. With limited resources in LMICs, there is a need for convergence and sharing of regulatory information so as to reduce regulatory burden and secure global supply chain. There is an opportunity to contribute to economic development through advancing the local pharmaceutical industry by strengthening regulatory capacity. Key recommendations to improve regulatory systems and capacity in LMICs are to modernize regulatory framework, pursue harmonization and networking with other international regulatory authorities to attain global standards and improve efficiency, address the critical human resources challenges, develop comprehensive quality management system, develop strategies for improving governance in regulatory activities, and build local technical capacity for regulatory affairs. Other measures to advance regulatory functions can include implementing risk-based and risk proportionate regulatory strategy, streamlining administration and improving capacity for registration for essential medicines, developing Good Regulatory Practices guidelines, revising fees charged for regulatory services to increase revenue, developing and maintaining regulatory registers, and strengthening information management system.
DIA 2014 50th Annual Meeting
June 15-19, 2014 | San Diego, CA

Share your expertise with 7,000+ life sciences professionals across all disciplines involved in the discovery, development, and life cycle management of medical products.

General Call for Abstracts
Open: August 1
Closes: September 9

Professional Posters
Open: August 1
Closes: February 10

Student Posters
Open: August 1
Closes: March 3

Registration Opens Fall 2013

Visit diahome.org/DIA2014 for more details.