Personalized Healthcare and Comparative Effectiveness Research: Realizing the Evidence on “What Works for Whom and When”

Moderator:
Kathy Wyrwich, PhD, Senior Research Leader, United BioSource Corporation

ISPOR 16th Annual International Meeting
Tuesday, May 24, 2011
1:30 PM–2:30 PM
Panelists:

- **Amy Abernethy, MD**, Associate Professor of Medicine, Duke University School of Medicine
- **Felix Frueh, PhD**, President, Medco Research Institute
- **Jens Grueger, PhD**, Vice President, Head Global Market Access, Pfizer Ltd
Amy P. Abernethy, MD

- Associate Professor of Medicine, Duke University School of Medicine
- Medical oncologist at Duke Cancer Institute
- Founder and Director of the Duke Cancer Care Research Program developing a new model of combined clinical/research inquiry in oncology, and IT-based methods to support it, in order to facilitate personalized CER
- Senior Fellow with the Duke Center for Clinical Health Policy Research
- Faculty in the Duke Clinical Research Institute
- Member, National Cancer Policy Forum with the Institute of Medicine
- A NIH and AHRQ funded investigator with a substantial portfolio focused on comparative effectiveness research (CER) and patient reported outcomes in cancer
Felix Frueh, PhD

- President, Medco Research Institute, Medco Health Solutions, Inc.
- Leads Medco’s peer-reviewed research initiatives and collaborations in the areas of personalized medicine, comparative effectiveness and chronic conditions.
- Prior to joining Medco in 2008, Dr. Frueh was Associate Director for Genomics at the U.S. Food and Drug Administration (FDA).
- Member of the Board of the Personalized Medicine Coalition.
- Adjunct Faculty member at the Institute for Pharmacogenomics and Individualized Therapy (IPIT) at the University of North Carolina (UNC).
Jens Grueger, PhD

- Vice President and Head of Global Market Access Primary Care at Pfizer
- Member, Pfizer Primary Care Global Leadership Team
- Before working at Pfizer, Dr. Grueger was the Head of Global Pricing & Health Economics at Novartis Pharma from 1999-2009
- Before joining Novartis, he founded Diversified Health Systems, a start-up company providing internet based disease management services to physician networks in Europe
AGENDA

- Introductory Comments
- Brief Responses by Panelists to Five Questions
- Discussion with the Panel
  - Q&A with Audience
  - Additional Moderator Questions
Introductory Comments - PCORI

The US Patient Protection and Affordable Care Act authorizing Patient-Centered Outcomes Research Institute (PCORI) requires that PCORI’s research project agenda:

“be designed, as appropriate, to take into account the potential for differences in the effectiveness of health care treatments, services, and items as used with various subpopulations, such as racial and ethnic minorities, women, age, and groups of individuals with different comorbidities, genetic and molecular sub-types, or quality of life preferences and include members of such subpopulations as subjects in the research as feasible and appropriate.”
PCORI

- This requirement presents the potential to discover and disseminate crucial comparative effectiveness research findings that individual patients and their clinicians need for making informed health care decisions, especially when there can be known harmful consequences to some patients.

- Achieving this enormous goal will move our nation closer to knowing what works for whom under what conditions and realizing the promise of what has often been termed as personalized medicine.
Results from genetic and molecular sub-types research have indeed advanced the ability to recommend treatments with the greatest likelihood of success given a patient’s known genotype (personalized medicine).

However, at least in the near term, treatment decision-making tools utilizing socio-demographic characteristics, such as race and ethnicity, sex, age, and comorbidity status will be more useful given the availability of these data over genetic profiles.
A more holistic definition for *personalized healthcare* should be considered that extends beyond genetic profiles and incorporates what is known about each patient/person as we seek the promise of knowing which interventions are most effective for which patients under what conditions.

*Personalize healthcare* should also incorporate each person’s:

- personal needs
- preferences
- healthcare access
- adherence attributes
Today

- In this symposium, our distinguished panelists will address some of the challenges for achieving this hope for personalized healthcare.

- Each of five relevant questions will be discussed by all panelists using brief prepared slides.
Question 1

Will healthcare product development embrace the identification of subgroup effectiveness early and throughout in the development process?
Will healthcare product development embrace the identification of subgroup effectiveness early and throughout in the development process?

**Amy Abernethy’s Response**

- As an oncologist, I am already seeing identification of subgroup effectiveness play out in the clinic.
- Drug development in my world is represented by the trials for which patients are eligible and are based upon specific biomarkers, site of origin, stage of disease, line of therapy.
- Post marketing, choices between drugs are based upon progressively narrower indications and specific requirements.
Will healthcare product development embrace the identification of subgroup effectiveness early and throughout in the development process?

Felix Frueh’s Response

– Yes, but…
  – Two thirds of drugs in the pipeline have a biomarker strategy associated, particularly important in biologics
  – Follow-through not always the case (e.g., prasugrel)
– Will not stop at, and may not always be possible in premarket (i.e., development)
  – Must look at product development as continuum into postmarket
  – Efficacy is different from effectiveness
Will healthcare product development embrace the identification of subgroup effectiveness early and throughout in the development process?

Jens Grueger’s Response

– Yes, biomarkers, genetic data and risk factor information already included in early development to guide phase III

– Subgroup analyses are already prespecified

– Several late stage personalized medicine development products at Pfizer, eg crizotinib, bapineuzumab, …
Question 2

What roles do payers and manufacturers have in realizing the hope of personalized healthcare?
What roles do payers and manufacturers have in realizing the hope of personalized healthcare?

Felix Frueh’s Response

– Infrastructure development, operational sophistication
– Education and decision support
– Create incentives
– Provide information about and evaluate alternative treatment options
– Create metrics to evaluate performance in comparative effectiveness setting
What roles do payers and manufacturers have in realizing the hope of personalized healthcare?

Jens Grueger’s Response

– Collaborate on the implementation and validation of personalized healthcare strategies

– Create systems that recognize the different value delivered in different subgroups

– Evolve coverage to include companion diagnostics
What roles do payers and manufacturers have in realizing the hope of personalized healthcare?

Amy Abernethy’s Response (Part 1)

- Payers
  - pragmatic comparative effectiveness trials that progressively define what works and generates practical evidence to inform clinical decision making
  - demonstration projects to evaluate better systems for data integration, decision support and translation of knowledge at point of care
  - reimbursement mechanisms to support participation in clinical trials that contribute to personalized medicine
  - reimbursement models that facilitate making judicious personalized decisions
What roles do payers and manufacturers have in realizing the hope of personalized healthcare?

Amy Abernethy’s Response (Part 2)

- Manufacturers
  - support mechanisms that help clinicians sort through myriad signals and information, to best match treatments to patients
  - support patient values, adherence, and social needs as a part of personalization of care
  - conduct continuous post-marketing, phase IV and real-world studies and analyses in order to better understand the implications of targeted drugs in everyday practice
  - be ready to constantly update knowledge as new data become available
Question 3

Are healthcare databases designed to address the challenges of achieving personalized healthcare?
Are healthcare databases designed to address the challenges of achieving personalized healthcare?

Jens Grueger’s Response

–No, either breadth or depth, need to make progress in connecting databases
Are healthcare databases designed to address the challenges of achieving personalized healthcare?

Amy Abernethy’s Response

- No – today’s healthcare databases don’t cut it as data are held in proprietary systems and cannot “talk”
- We need a trustworthy system based upon common data standards and semantics that allows information to be shared across boundaries
- The Office of the National Coordinator (ONC) and Institute of Medicine have described the requirements of a liquid data system to support learning healthcare and ultimately personalized medicine
Are healthcare databases designed to address the challenges of achieving personalized healthcare?

Felix Frueh’s Response

- They have not been designed with this task in mind
- But many can be used for such efforts – depends on specific questions asked
- Must look at how existing databases can be used to conduct “meta”-analyses
  - e.g., longitudinal pharmacy data with medical claims data
  - What if we could add genetic data into mix?
Question 4

What frameworks learned in other countries can assist PCORI to address the challenge of achieving personalized healthcare?
What frameworks learned in other countries can assist PCORI to address the challenge of achieving personalized healthcare?

Amy Abernethy’s Response

- Australia has a nationalized healthcare system with the option of additional private insurance coverage
  - Considers care of populations and patients simultaneously
  - Data-driven prognostication and treatment personalization
  - Developing systems for continuous monitoring of outcomes and adverse effects to ensure promotion of helpful interventions and discontinuation of ineffective or burdensome interventions
  - Invested in linked data systems, a single national healthcare ID number of each person, electronic health records, health services research, and the research engine of basic discovery
  - Integrate patient preference into health care
What frameworks learned in other countries can assist PCORI to address the challenge of achieving personalized healthcare?

Jens Grueger’s Response

–None that I am aware of
What frameworks learned in other countries can assist PCORI to address the challenge of achieving personalized healthcare?

Felix Frueh’s Response

– None others exist to my knowledge that have PCORI specific focus; however, we can learn from:
  – France: system that requires continuous evaluation of outcomes to assess drug pricing – this is one form of effectiveness that can (but doesn’t have to) include personalized healthcare
  – UK: NICE
  – EMA: regulatory views (e.g., k-ras)
– May not only have to look at other countries, but at what we have in US (e.g., integrated systems like Kaiser)
Question 5

How can PCORI research related to personalized healthcare be adopted into US policies?
How can PCORI research related to personalized healthcare be adopted into US policies?

Felix Frueh’s Response

– Policy recommendations could include
  – Coverage with evidence development
  – Regulatory consideration, incl. e.g., conditional approval
  – REMS-like approach focused on CE, incl. e.g., registries
  – …

– But: significant shortcoming if health economics is not considered
How can PCORI research related to personalized healthcare be adopted into US policies?

Amy Abernethy’s Response

- Bolster the movement towards a more integrated system of data and information to support learning healthcare, CER, and translation
- Maintain the message that personalized medicine isn’t just about genomics and genetics
  - Patient reported data such as personal values, symptoms, quality of life, adherence, and preference need to be incorporated explicitly
- Work together with payors to develop better processes for coverage with evidence development, pragmatic clinical trials, and other evidence-development schema that supports personalized medicine
- Facilitate demonstration projects and learning models
How can PCORI research related to personalized healthcare be adopted into US policies?

Jens Grueger’s Response

- Drive for appropriate databases and standards for valid subgroup analyses
Your thoughts and questions for this panel on achieving personalize healthcare
“Patient-centered outcomes” are at the core of PCORI’s name and mission. What matters to patients? How should research that is funded by PCORI identify outcomes that matter to patients?
Moderator’s Question

At the most recent PCORI Meeting (May 16-17, 2011), the Methodology Committee proposed the following Definition of PCOR:
Patient Centered Outcomes Research (PCOR) helps people make informed healthcare decisions and allows their voice to be heard in assessing the value of healthcare options. It answers questions like, “Given my personal characteristics, conditions and preferences, what should I expect will happen to me?”, “What are my options and what are the benefits and harms of those options?” and “What can I do to improve the outcomes that are most important to me?”

The characteristics of PCOR:
• Assesses the benefits and harms of preventive, diagnostic, therapeutic, or health delivery system interventions to inform decision making, highlighting comparisons and outcomes that matter to people
• Is inclusive of an individual's preferences, autonomy and needs, focusing on outcomes that people notice and care about such as survival, function, symptoms, and health-related quality of life
• Incorporates a wide variety of settings and diversity of participants to address individual differences and barriers to implementation and dissemination

PCOR may also focus on optimizing outcomes while addressing burden to individuals, resource availability, and other stakeholder perspectives.
Moderator’s Question

What outcome measures currently used in our clinical trials meet this PCOR definition?
Many thanks to

Amy, Felix and Jens

and

to all participants in this session