



CSRC Think Tank:

NOAC Use in the Pediatric Population: Defining the Path Forward

**ACC Heart House
2400 N Street, NW
Washington, D.C. 20037
Washington, DC**

Thursday, April 4th, 2019

7:45am – 8:00am

CSRC Welcome - Jonathan Seltzer, MD, MBA, MA, and
Diptee Gajjar, BPharm, PhD

8:00am – 8:15am

Keynote speech, including Goals of the Think Tank: Ann Farrell, MD (FDA)

8:15am – 9:15am Session I: Current Landscape of use of Anti-Coagulation in the Pediatric Population. Focus on Defining Unmet Medical Need

What are the current indications for which anti-coagulation is used? Treatment vs thrombo-prophylaxis? Does use differ in different age-subgroups? Where are areas of unmet medical need? What are the current industry and academic barriers for pediatric research?

- **Courtney Thornburg, MD** (Rady Children's Hospital, San Diego)
- **Thomas Diacovo, MD** (University of Pittsburgh)
- **Diptee Gajjar, BPharm, PhD** (Bristol-Myers Squibb)

Discussion: What are the major issues and needs in the development of pediatric cardiac indications for anticoagulation? **Speakers and**

- **Christoph Hornik, MD** (Duke Medical Center)
- **Patricia Massicotte, MD** (University of Alberta)
- **Shetarra Walker, MD (FDA)**
- **Christopher Almond, MD (Stanford)**(Remote)

9:15am – 10:20am Session II: Introduction to Session III Regulatory Considerations in Using Adult Data for Pediatric Indications

- **Shetarra Walker, MD (FDA)**
- **Mona Khurana, MD** (FDA) Pediatric drug development – US Perspective
- **Dirk Mentzer, MD** (PDCO chair EMA/NL) – Pediatric drug development - European/UK Perspective (Remote)
- **Sudharshan Hariharan, PhD** (FDA) Clinical Pharmacology Perspective on Biomarkers and Extrapolation

Discussion: Speakers and

- **Jacqueline Corrigan-Curay, JD, MD (FDA)** RWE expert
- **Angeliki Siapkara, MD (MHRA, UK)**(Remote)

10:20am-10:30am Break

10:30am - 12:30pm Session III: Thromboprophylaxis and Thrombosis treatment: need to develop NOAC for these 2 indications? Define study population and relevant endpoints for NOAC pediatric development

Define unmet medical need for thromboprophylaxis.
Define unmet medical need for thrombosis treatment
Define special characteristics of children for both indications. Define children age group for both indications
Are there any similarities and differences in coagulation cascade between adult and pediatric population and accordingly, the condition of thrombus development?

What are the patient characteristics (e.g, age and other demographics, underlying diagnoses and other comorbidities, more 'social' needs) that are of relevance for NOAC development for pediatric use?

What are the appropriate trial efficacy and safety endpoints? Is there a correlation between the adult and pediatric endpoint and/or biomarkers?

- **Christoph Hornik, MD** (Duke Medical Center)
- **Neil Goldenberg, MD, PhD** (Johns Hopkins)
- **James Revkin, MD** (Pfizer)
- **Nicholas Richardson, DO, MPH** (FDA)

Discussion: Are currently available agents sufficient for thrombosis treatment? If not, what pediatric indication development is critical using NOACs? Define pediatric population for NOAC research. Which pediatric anticoagulation outcome measures are clinically meaningful for approval? Which to demonstrate long term benefit?

Speakers and

- **Charlotte Jones-Burton, MD** (Bristol-Myers Squibb)
- **Sudharshan Hariharan, PhD (FDA)**
- **Lori Ehrlich, MD (FDA)**
- **Mark Rothmann, PhD (FDA)**

12:30pm - 1:15pm Lunch



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1:15pm - 2:15pm Session IV: Regulatory requirements for trial design: A Practical Example

What areas of study design for pediatric studies need to be addressed in order to ensure that trials meet regulatory standards? What are the gaps in knowledge in children for these indications? What data need to be generated from pediatric clinical trials? What trials require a written request? Which meet PREA requirements? What trials require PIP? Is a trial needed to match each adult indication? How is long-term benefit demonstrated?

- [Lynne Yao, MD](#) (FDA)
- [Dirk Mentzer, MD](#) (PDCO chair EMA/NL) (Remote)
- [Daniel Keene, MD](#) (Health Canada)

ROUNDTABLE DISCUSSION

- [Lynne Yao, MD](#) (FDA)
- [Robert Temple, MD](#) (FDA)
- [Daniel Keene, MD](#) (Health Canada)
- [Lori Ehrlich, MD](#) (FDA)
- [Norman Stockbridge, MD](#) (FDA)
- [Dirk Mentzer, MD](#) (PDCO chair EMA/NL) (Remote)
- [Diptee Gajjar BPharm, PhD](#) (Bristol-Myers Squibb)
- [Peter Aprile](#) (Pfizer)
- [Christoph Hornik, MD](#) (Duke Medical Center)
- [Thomas Diacovo, MD](#) (University of Pittsburgh)

Discussion: What type of trials are needed to address the knowledge gap? Do different pediatric age groups require different trial designs? Different indications? What are the regulatory pathways? How can populations be defined? How can we overcome trial enrollment challenges especially for young children (<6 years)?

2:15 - 2:30pm Break

2:30pm - 3:30pm Session V: Practical challenges for conducting pediatric clinical trial

How can a trial be designed to be successful for enrollment and getting relevant information to support regulatory approval? Role of patient network. Operational barriers? Consent issues? How to increase participation/enrollment of patients in pediatric studies, especially very young patients including neonates by overcoming the barriers of pediatric clinical trial design?

ROUNDTABLE DISCUSSION

- [Daniel Keene, MD](#) (Health Canada)
- FDA: [Lynne Yao, MD](#), [Jacqueline Corrigan-Curay, JD, MD](#), [Donna Snyder, MD](#), [Robert Temple, MD](#), [Norman Stockbridge, MD](#), [Nicholas Richardson, DO, MPH](#)
- [Dirk Mentzer, MD](#) (PDCO chair EMA/NL) (Remote)
- [Angeliki Siapkara, MD](#) (MHRA, UK) (Remote)
- [Christoph Hornik, MD](#) (Duke Medical Center)
- [Janette T. Reyes, NP](#) (University of Toronto)
- [Angela Bates, MD](#) (University of Alberta)
- [Sitara de Gagne](#) (Child and Family Centered Care & Patient Advocacy)
- [Liza \(Miriam\) Pina, MD](#) (Johnson and Johnson)

3:30pm - 4:00pm Session VI: Summary and Next Steps

- [Diptee Gajjar, BPharm, PhD](#) (Bristol-Myers Squibb)
- [Jonathan Seltzer, MD, MBA, MA](#) (ACI Clinical)