

Presidential Panel Discussion

📅 Sat. Jul 12, 2025 1:00 PM - 2:30 PM JST | Sat. Jul 12, 2025 4:00 AM - 5:30 AM UTC 🏛️ Room1 (Fine Arts Center 1F Grand Auditorium)

**Presidential Panel Discussion3(III-PPD3)**

**Envisioning the Near Future of Pediatric Cardiology in Japan:  
Collaborating with International Pediatric Cardiologists**

Chair: Hiroyuki Yamagishi (Tokyo Metropolitan Children's Medical Center)  
Tsuda Takeshi (Sidney Kimmel Medical College at Thomas Jefferson University)

[III-PPD3-1]

Emerging Importance of Exercise Science in Diagnosis and Treatment of Children with Heart Diseases

○ Takeshi Tsuda (Nemours Cardiac Center, Nemours Children's Health Delaware)

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[III-PPD3-2]

Shaping the Future: Innovations and Emerging Trends in Pediatric Interventional Cardiology

○ Daisuke Kobayashi (Department of Pediatrics, Washington University in St. Louis)

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[III-PPD3-3]

Role of Pediatric Cardiologists in Adult Congenital Heart Disease: Passing the Baton or Walking Together?

○ Seiji Ito<sup>1,2</sup> (1. Washington Adult Congenital Heart Program, Cardiology, Children's National, 2. George Washington University)

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[III-PPD3-4]

Fyler Code System and beyond

○ Nao Sasaki (Boston Children's Hospital, Department of Cardiology, Division of Cardiac Imaging)

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[III-PPD3-5]

The Challenges in Managing of Pulmonary Arterial Hypertension Associated with Congenital Heart Disease in China

○ Hong Gu, Qiangqiang Li (The Department of Pediatric Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing)

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**[III-PPD3-1] Emerging Importance of Exercise Science in Diagnosis and  
Treatment of Children with Heart Diseases**

○ Takeshi Tsuda (Nemours Cardiac Center, Nemours Children's Health Delaware)

Keywords : Exercise、 Stress imaging、 Cardiac rehabilitation

Individual exercise capacity represents general wellness of the host as well as overall functional reserve of heart, lung, and muscle. Assessment of exercise capacity by cardiopulmonary exercise testing (CPET) provides objective measures of cardiovascular reserve of patients with and without heart disease. In addition to conventional respiratory gas analysis in CPET, stress imaging studies have emerged as new diagnostic modalities to identify subclinical myocardial pathology, including occult myocardial ischemia and/or myopathic changes with advanced technologies. On the other hand, exercise is an essential therapeutic modality to improve survival, daily functionality, and quality of life of patients with heart disease. Exercise enhances dynamic biological crosstalk among multiple organ systems, including cardiovascular system, skeletal muscle, bone, immune cells, nervous system, endocrine system, gut, and adipose tissue. These beneficial interactions exert thorough endocrine, paracrine, or autocrine pathways via cytokines called “exerkines”. This principle supports the concept of cardiac rehabilitation program for those with underlying heart disease. The molecular mechanisms of these complex interactions, however, warrant further investigations. As more and more children with heart disease, especially those with single ventricle physiology or complex congenital heart disease who underwent multiple surgical interventions, have survived into adulthood, further evolution of exercise science would open a new academic arena in pediatric cardiology.

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**[III-PPD3-2] Shaping the Future: Innovations and Emerging Trends in Pediatric  
Interventional Cardiology**

○ Daisuke Kobayashi (Department of Pediatrics, Washington University in St. Louis)

Keywords : Pediatric Interventional Cardiology、Innovation、Japan

Pediatric interventional cardiology in Japan has long been distinguished by a high level of technical expertise and procedural innovation, particularly among experienced operators who have adapted available devices to address unique anatomical and clinical challenges. However, systemic hurdles - such as delayed introduction of new devices, restrictions on off-label use, and a decentralized structure with low procedural volumes per center - have limited further advancement. In addition, there is reduced exposure to global trends and scientific exchange, partly due to fewer opportunities for international training and conference participation. Despite these challenges, Japan's strengths - including its universal health coverage, highly skilled physicians, and growing collaborative networks - provide a strong foundation for future growth. As a Japanese interventional cardiologist practicing in the U.S., I propose a forward-looking strategy that includes expanding international exchange, developing a centralized database to support evidence generation, fostering early-career specialization through structured fellowships, and accelerating regulatory harmonization for novel devices. This presentation will highlight global trends and innovative practices in interventional cardiology to help envision a brighter, more globally connected future for pediatric cardiology in Japan.

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**[III-PPD3-3] Role of Pediatric Cardiologists in Adult Congenital Heart Disease:  
Passing the Baton or Walking Together?**

○Seiji Ito<sup>1,2</sup> (1. Washington Adult Congenital Heart Program, Cardiology, Children's National, 2. George Washington University)

Keywords : Pediatric cardiology、Adult congenital heart disease、Healthcare system

Pediatric cardiologists and health care workers in this field played- and continue to play- a foundational role in the evolution and advancement of adult congenital heart disease (ACHD) care. Their contributions span from innovations in neonatal care to the refinement of lifelong management of congenital heart diseases. In the current era, over 90% of children with congenital heart disease, including those with complex lesions, are expected to survive into adulthood. However, many patients develop complications related to their native defect or prior surgeries or additional acquired heart diseases, including valvular heart disease, heart failure, arrhythmia, thromboembolism, and other non-cardiac medical comorbidities. The evolution of cardio-obstetrics care and the reproductive health of this population also emerged. In response, ACHD programs were developed in major U.S. cities and expanded nationally to address the multifaceted needs of this growing heterogeneous population. The launch of ACHD subspecialty board certification in 2015 under the American Board of Internal Medicine marked a milestone in formalizing the care. Nevertheless, challenges remain- including a significant shortage of ACHD specialists and systematic barriers in healthcare and socioeconomic systems. This presentation will explore the current landscape of ACHD care in the United States, emphasizing the critical and ongoing role of pediatric cardiologists and associated healthcare workers while outlining possibilities and the path forward for sustainable, high-quality ACHD care delivery.

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**[III-PPD3-4] Fyler Code System and beyond**

○ Nao Sasaki (Boston Children's Hospital, Department of Cardiology, Division of Cardiac Imaging)

Keywords : Fyler Code System、artificial intelligence、congenital heart disease

1968年、ボストン小児病院のファイラー教授により、ニューイングランド乳児心臓病プログラム（NERIP）が設立され、先天性心疾患に関する包括的なデータベース構築が開始されました。当時、疾患を分類する体系が存在しなかったため、教授は独自にファイラーコーディングシステム（FCS）を開発しました。FCSは外来診療、心電図、カテーテル検査、手術所見、さらには手技に至るまで、あらゆる診療情報を分類・記録する仕組みであり、ボストン小児病院は早期に電子化を導入しました。1950年以前のデータも手作業で入力され、後に心エコー、MRI、CTなどの画像診断にもFCSは適用されました。現在FCSのコード数は330万を超え、所見や診断の迅速な検索が可能となり、臨床研究や診療支援に大きく寄与しています。このシステムの特筆すべき点は、単なる外部データベースではなく、患者のカルテそのものであることです。医師は診療中に所見を再入力する必要がなく、記録がそのまま臨床に活かされます。50年以上前に構築されたこのシステムの先見性には敬意を表するものであり、日本においても同様の取り組みが広がることが期待されます。近年ではAIの急速な進歩により、全国の先天性心疾患データをAIで分類・統合し、専門医が必要な情報に迅速にアクセスできるシステムの実現が視野に入ってきました。これにはデータサイエンティストとの協力、さらに若手医師や医学生のAI技術習得が不可欠です。日本では出生数が減少しているとはいえ、2021年時点で先進国の中ではアメリカに次いで第2位を維持しています。先天性心疾患は出生数に比例して発症するため、日本には多くの症例が存在し、データベースの構築と臨床応用を通じて、予後の改善に貢献する責任があります。今後も新技術を積極的に取り入れる姿勢が求められます。

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**[III-PPD3-5] The Challenges in Managing of Pulmonary Arterial Hypertension  
Associated with Congenital Heart Disease in China**

○ Hong Gu, Qiangqiang Li (The Department of Pediatric Cardiology, Beijing Anzhen Hospital, Capital Medical University, Beijing)

Keywords : Congenital Heart Disease、Pulmonary Arterial Hypertension、targeted medical therapy

Pulmonary arterial hypertension (PAH) is a major complication in patients with congenital heart disease (CHD) and is associated with increased mortality and morbidity. PAH associated with CHD is classified into four clinical groups: Eisenmenger syndrome (ES), PAH associated with prevalent left-to-right shunts, PAH with small/coincidental defects, and postoperative PAH. Advances in neonatal screening, diagnostic techniques and cardiac surgery have led to improvement in early identification and treatment of cardiac defects at early age, preventing the development of PAH in most patients. In China, because of the large population base and regional differences in medical resources, there are still considerable number of patients with advance pulmonary vascular disease related to CHD and require efficient management. CHD's have been the top birth defect since 2004 in China. Recently, data from a prospective multi-center registry study revealed that PAH-CHD accounts for 45.2% of all patients being the most common etiology in Chinese PAH patients. Our center reported 507 patients with PAH-CHD, of whom 235 cases (46.4%) were diagnosed with ES, 193 cases (38.1%) were postoperative PAH, which is related to the late diagnosis and surgery time. The management strategies are different among the 4 clinical groups of PAH-CHD, there is no doubt that the defect closure shouldn't be considered in patients with Eisenmenger syndrome. For patients with CHD-PAH (including ES、PAH with small/coincidental defects, and postoperative PAH), targeted medical therapy such as Bosentan may be beneficial in improving the clinical symptoms and long-term survival. Special clinical issues such as the management of ACHD and pregnancy complicated CHD and PAH are also particularly noteworthy and challenging.