29 DIGITAL LOOP NETWORK FOR INFORMATION, COMMUNICATIONS AND ENGAGEMENT IN PEDIATRIC PALLIATIVE CARE
C. Piccarreta, C. Laterza, P. Piccarreta

40 EXPERIENCE OF AN OBESITY AND FATTY LIVER DISEASE OUTPATIENT CLINIC: APPLICATION OF A PERSONALIZED MOBILE BASED INTERVENTION (PEDIAFIT).

44 MOBILE HEALTH FOR REMOTE MONITORING OF EPILEPSY IN SOUTH AFRICAN CHILDREN
K. Fieggen, J. Wilmshurst, D. Blana, I. Muchada, E.H. Davies

46 ROPOT-THERAPY: CLINICAL TRIAL ON THE EFFECTIVENESS OF A ROBOT-HUMANOID, IN REDUCING ANXIETY AND FEAR OF NEEDLES, DURING THE CACCINAL SESSION
M. Larafa, S. Rossi, M. Ruocco

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R. Roccaldo, L. Censi, P. Buonocore, S. Ruggeri

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37 DYSLEXIA ONLINE: SCREENING FOR READING DIFFICULTIES
D. Menghini, F. Costanzo, A. Circelli, S. Rossi, C. Varuzza, G. Lazzaro, S. Vicari

41 TALKITT BETA PROJECT: TOWARDS A NEW INSTRUMENT FOR AUGMENTATIVE AND ALTERNATIVE COMMUNICATION IN DOWN’S SYNDROME
F. Costanzo, D. Ruà, A. Circelli, C. Caciolo, D. Shavit, O. Yancovich, S. Vicari, D. Weissberg

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F. Costanzo, M. Voltolini, E. Fucà, L. Tesauro, D. Menghini, S. Vicari
OPENING SESSION - TOWARD AN ECOSYSTEM FOR INNOVATION IN PEDIATRICS

13.00 - 13.30 Welcome
Mariella Enoc, CEO Bambino Gesù Children’s Hospital - Rome, Italy
Opening remarks
Bruno Dallapiccola, Scientific Director Bambino Gesù Children’s Hospital - Rome, Italy
The Rome Manifesto for an Ecosystem Fostering Innovation in Pediatrics
Alberto E. Tozzi, Bambino Gesù Children’s Hospital - Rome, Italy

13.30 - 14.00 A platform for solution matching and services for innovation
Sylvie Donansson, eHealthHub - Paris, France

14.00 - 14.30 An ecosystem for innovation for kids
Luca Tesauro, Giffoni for Kids - Naples, Italy
A session on ethics and the principles of openness that should guide innovation in pediatrics, and how to link all areas of expertise for fostering innovations based on actual needs. All stakeholders involved in innovation can contribute to discuss the path forward for expediting the development of new solutions.

ADVANCES IN CLINICAL PEDIATRICS AND PRECISION MEDICINE

14.30 - 15.00 Engineering Immunity to Treat Cancer in Children
Franco Locatelli, Bambino Gesù Children’s Hospital - Rome, Italy
Professor Locatelli will examine new technologies which allow us to “hack” the immune system to target cancer cells. First tested on leukemias, this innovative approach may be extended to solid tumors paving the way to a bright future in cancer therapy.
15.00 - 15.30 **Innovation in Lung Transplant**  
*Shaf Keshavjee, University Health Network - Toronto, Canada*

Many potential lung donors are turned away due to the low quality of the organs. Prof Keshavjee will describe a revolutionary technique to regenerate explanted lungs, a technique which has increased the number of potential donors, and the success rate of transplants, by 25%.

15.30 - 16.00 **Less Genes More Genomes**  
*Tim Watts - Cambridge, UK*

While many more genetic changes can be identified with whole exome and whole genome sequencing than with select gene sequencing, the significance of this information is sometimes uncertain. Sometimes, an identified variant is associated with a different genetic disorder that has not yet been diagnosed. The potential benefits of routine use of whole genome sequencing will be discussed in this lecture.

16.00 - 16.30 **Networking coffee break**

16.30 - 17.00 **The Digital Disruption of Academic Medicine: Nothing Will Look the Same (Even for Surgeons)**  
*Todd Ponsky, Cincinnati Children’s Hospital - Cincinnati, USA*

Prof Ponsky, a surgeon with a special focus on minimvasive surgery in children who is studying the adoption of AI for improving surgery in pediatrics, will discuss the recent changes that affect the routine clinical practices in surgery.

17.00 - 17.30 **Panel - 3D Technologies for Surgical Planning**  
*Moderator: Alessandro Inserra, Bambino Gesù Children’s Hospital - Rome, Italy*  
*Luca Borro, Bambino Gesù Children’s Hospital - Rome, Italy*  
*Andrea Del Fattore, Bambino Gesù Children’s Hospital - Rome, Italy*  
*Aurelio Secinaro, Bambino Gesù Children’s Hospital - Rome, Italy*

Surgical planning requires the translation from diagnostic images into solid or virtual models. This panel will discuss how complex surgery benefits from simulation and planning using these techniques and how 3D printers may even be used to print cells and organized tissues of different shapes.
Creating an Ecosystem for Innovation

17.30 - 18.00 **Pediatric ECMO, How Collaboration led to Innovation**

**Kevin Maher, Center for Pediatric Nanomedicine Children’s Healthcare of Atlanta - Atlanta, USA**

ECMO support in children represents a lifesaving technology that is associated with numerous potential complications. We sought to address the recurring issue of ECMO circuit thrombosis through a collaboration with engineers to define the problem and devise a solution. A novel device for ECMO systems will be presented as the outcome of this collaborative effort.

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**October 3**

**HOW TO FOSTER INNOVATION?**

08.30 - 09.00 **The Role of iSPI, an International Society Fostering Innovation in Pediatrics**

**Sherry Farrugia, GeorgiaTech - Atlanta, USA**

**Dawn Wolff, Children’s Mercy - Kansas City, USA**

A global network of pediatric hospitals is an essential driver to boost innovation for children. Discover how the International Society for Pediatric Innovation aims to be the global hub for innovation in pediatrics, enabling exploration, fostering collaboration and driving insightful change to transform child health.

09.00 - 09.30 **Innovation for Universal Health Coverage**

**Stefano Vella, Università Cattolica del Sacro Cuore - Rome, Italy**

Health care must become more accessible to people living in low income countries. Professor Vella discusses the need to consider innovation as a means for fostering equity in healthcare.

09.30 - 10.00 **Disrupting Healthcare Systems Through Innovation**

**Tony Young, NHS - London, UK**

Innovation can be used to make healthcare more sustainable. Prof Young will discuss the solutions that the NHS UK has developed to create simpler patient flows and to generate better performance of traditional healthcare at a lower cost by leveraging AI and digital technologies.

10.00 - 10.30 **Networking Coffee Break**
ARTIFICIAL INTELLIGENCE IN PEDIATRICS

10.30 - 11.00  Human with Machine Intelligence
Anthony Chang, Children’s Hospital Orange County - Orange County, USA

Medicine will not become an automatic, technology-driven process, but will be improved through the combination of human knowledge and AI technologies. Professor Chang will discuss how AI methodologies demand a close collaboration, not competition, between the physician and the data scientist. It behooves us to start thinking how we can design studies in which machine and man, can work together to be even more accurate than either can be alone.

11.00 - 11.30  Artificial Intelligence for Diagnostic Images
Gregor Thoermer - Erlangen, Germany

Radiologists will not be extinguished by AI but will be given super-powers to make better diagnoses even in complex cases. Human sight cannot recognize fine patterns that artificial intelligence tools can, and AI can be used to integrate varied clinical information with images. The future of radiology will become a very complex science in which AI will help recognizing complex patterns and increase the diagnostic power of this discipline.

11.30 - 12.00  AI and XR in GaitWay: Using tomorrow’s technology to augment pediatrics today
John Attard, Playing Forward - Santa Monica, USA

A brief summary of the current realistic picture of XR technologies and artificial intelligence (AI), and how they can be applied today on current distribution platforms (gaming systems, mobile devices, home computers). A quick outline of the GaitWay XR project being designed by Playing Forward and Los Angeles Children’s Hospital. GaitWay XR is a perfect example of how practical application of cutting-edge technologies can have enormous impact for the patients, the doctors, and even the institutions. Furthermore, how the experience in entertainment can encapsulate this type of product in a way in which it educates, engages, and entertains the community at large providing opportunities for unprecedented pro-social engagement.
12.00 - 12.30

**SELECTED ABSTRACT PRESENTATIONS**

*Introducing Trial@home in Pediatrics - Feasibility and Reliability of a Novel Non-Invasive Mome-Monitoring Platform*

Matthijs Kruizinga, Juliana Children’s Hospital, HAGA teaching hospital - The Hague, The Netherlands

*Application of Co-design Method and the development of a Toolkit to Support the Generation of Innovative Solution in Healthcare*

Enrico Bassi, Opendot Fab Lab, Milan, Italy
Antonia Madella Noja, Fondazione Together to Go - Milan, Italy

*A Machine Learning Algorithm for Crying Detection in Infants*

Ahnjili Zhuparris, Centre for Human Drug Research - Leiden, The Netherlands

12.30 - 13.30

Networked Lunch

**THE HOSPITAL OF THE FUTURE**

13.30 - 14.00

**Pop-Up Hospitals**

Narendra Kini, Nicklaus Children’s Hospital - Miami, USA

With a magic wand we could create health services when needed and then make them disappear. This is not impossible, Pop Up Hospitals give the opportunity to deliver health care services that can be created on the spot, removed, and moved to other locations. Professor Kini will describe this innovative solution that is paving the way for a revolutionary model of pediatric healthcare.

14.00 - 14.30

**Voice Technologies for Precision Care**

John Brownstein, Boston Children’s Hospital - Boston, USA

Talking is much faster than typing. Boston Children’s Hospital is innovating communications with digital voice technologies both within and without the hospital utilizing Amazon Echo and the knowledge base curated by the hospital. Combining the advantages of a phone call with digital voice applications allows institutions to standardize and speed up the communication process. In addition, voice technologies are becoming a way to allow institutions to collect subtle clinical signs of diseases.
14.30 - 15.00  **Building a Brand New Hospital**  
*Pekka Lahdenne, Helsinki University Hospital - Helsinki, Finland*

Imagine that you need to build a new hospital. How would you coordinate all of the activities? Instead of listening to an engineer, Professor Lahdenne helmed an innovative hospital in Helsinki which was designed by pediatricians, patients and other professionals, with patient comfort and lean strategies as its focus while utilizing an amazing crowdfunding campaign.

15.00 - 15.30  **Networking Coffee Break**

15.30 - 16.00  **The digital hospital evolution: creating a framework for the healthcare system of the future**  
*Dorothy Whittick - Toronto, Canada*

The Cleveland Clinic Abu Dhabi (CCAD), a new 2.2 million-square-foot multi-specialty digital hospital modeled after the world-renowned U.S. medical center, will offer the latest technologies in surgery, imaging, telemedicine and electronic medical records, integrating systems in a manner that will be the first of its kind in the country and the Middle East region.

16.00 - 16.30  **Panel - Patient advocacy and collaboration at the next level**  
*Moderator: Kiersten Pilar Miller - Bambino Gesù Children's Hospital - Bellies Abroad - Rome, Italy*  
*David Cole – Thinking of Oscar - Oxford, UK*  
*Francesca Fedeli – FightTheStroke - Milan, Italy*

Learn how patient associations may drive health innovation with outstanding initiatives. From supporting innovation fellowships to integration of artificial intelligence in diagnostic procedures to creation of an entire ecosystem for rehabilitation of children with disabilities.
16.30 - 17.30 **Panel - Innovations Created by and For Young Patients**

Moderator: Begonya Nafria Escalera MsC, Institut de Recerca Saint Joan De Deu and Fundació Sant Juan De Deu - Barcelona, Spain
Claudio Fracasso - Rome, Italy;
Donato Bonifazi, Consorzio per le valutazioni Biologiche e Farmacologiche CVBF - Bari, Italy
Mariangela Lupo, TEDDY European Network of Excellence for Pediatric Clinical Research - Bari, Italy
Young Persons Advisory Group, YPAG Barcelona and Bari
Alessandra Simonetti, Bambino Gesù Children’s Hospital - Rome Italy
Leanne West - iCan research - Altanta, USA

A panel to understand how young patients can invent and develop real innovations in networks for young innovators.

17.30 - 18.00 **Smart communities for patients: Share4Rare**

Begonya Nafria Escalera MsC, Institut de Recerca Saint Joan De Deu and Fundació Sant Juan De Deu - Barcelona, Spain

A sneak peak on Share4rare where online communities are monitored to measure engagement and activation of patients.

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**October 4**

**DIGITAL THERAPEUTICS AND DIGITAL COMMUNICATION**

08.30 - 09.30 **Panel - The Impact of Digital Therapeutics in Pediatrics**

Moderator: Roberto Ascione, Healthware International - Salerno, Italy
Giuseppe Recchia, Fondazione Smith Kline - Verona, Italy
Danny Weissberg, Voiceit - Tel Aviv, Israel
Ervin Ukaj, Oppimi Group - Montréal, Canada

Digital therapeutics are real treatments that need a fast track to be evaluated. Since the development of new drugs takes a very long time, there is an increasing interest by pharmaceutical companies to develop digital products that may complement existing traditional drugs, or that exert a therapeutic effect on their own. Two startups will present their work in the field of behavioral therapies. A discussion will follow about the opportunities and challenges of digital therapeutics in pediatrics.
09.30 - 10.00  **The Internet of Pediatrics: How to Globally Connect Devices and People**  
*Timothy Chou, Stanford University - Stanford, USA*

Clinical information often remains unused simply because the devices collecting them are not connected to each other. What if we could connect not only all devices in a single hospital, but in a network of hospitals? Professor Chou will discuss on how this can take us to completely different pediatric care models in which patients and their information move seamlessly across a global network of hospitals.

10.00 - 10.30  **Digitally Supported Collection of Patients Reported Outcomes in Pre-School and Literate Children**  
*Francesco Patalano - Basel, Switzerland*

Clinical studies often require the collection of clinical information when patients are outside the hospital. Digital tools offer plenty of choices for collecting patient reported outcomes, from tailored questionnaires to data collected through wearable sensors. Children may autonomously manage digital applications with important benefits for clinical studies.

10.30 - 11.00  **Networking Coffee Break**

11.00 - 12.00  **Panel - Digital Communication for Promoting Childhood Immunization Programmes**  
*Moderator: Anna Odone, Università Vita Salute S Raffaele - Milan, Italy  
Michael Edelstein, National Infection Services, PHE - London, UK  
Sally Jackson, Bambino Gesù Children’s Hospital - Rome, Italy  
Francesco Gesualdo, Bambino Gesù Children’s Hospital - Rome, Italy*

A panel discussing how digital tools and new media can be used to identify where and how to best communicate vaccination campaigns to parents as well as the use of innovative techniques to tailor informed consent processes in clinical trials on vaccines.
12.00 - 12.30  **Panel - Digital Applications for Children and Adolescents**  
**Moderator:** Francesco Marino, Bambino Gesù Children’s Hospital - Rome, Italy  
Elena Bozzola, Bambino Gesù Children’s Hospital - Rome, Italy  
Floriana Costanzo, Bambino Gesù Children's Hospital - Rome, Italy  

Digital applications can be responsibly used by children for therapeutic purposes with no risk of addiction. Often parents are advised to avoid early exposure to digital applications for their children. Some digital tools like serious games may be part of a pediatric therapeutic plan, including rehabilitation and therapy. The apparent contradictions between these aspects is discussed in a panel with the objective of finding the right balance between a negative effect and a positive impact on child health.

12.00 - 13.30  **The MakeToCare ecosystem**  
**Filippo Cipriani - Milan, Italy**  

**Startup Pitch Competition**

**Brave Potions**  
**Alberto Piras - Cagliari, Italy**

**Limbix**  
**Carmen Rios - Barcelona, Palo Alto, Spain**

**The Magical Garden**  
**Jacqueline Gray - London, UK**

**NemoRed**  
**Chongko Snitwong Na Aryuttaya - Bangkok, Thailand**

**Puffy’s Adventure**  
**Roberta Napolitano - Napoli, Italy**

Innovators from around the world will present creative and innovative ideas for potentially game-changing innovations to Reduce Anxiety or Pain in Hospital Settings.