



SIEMENS

Health-e-Child

Dr. Alok Gupta

Genoa, 27 October 2007

Megatrend Healthcare

**Efficient,
Effective,
Personalized, yet
Affordable**

healthcare is one of the
most important challenges
of the future



Quality ↑

Cost ↓

Why pediatric focus?

>> **Children aren't just small adults** <<

Oct 11: 14 branded **infant cough & cold medicines** withdrawn voluntarily by drug manufacturers in US and Europe

Oct 18-19: A panel of health experts called by FDA, which looked at how **safe and effective** antihistamines, decongestants, antitussins and expectorants are in children, said it is **not appropriate to take data from adults and apply it to children under 12.**

→ After a two-day hearing, the panel called for **more studies about how the medicines affect children.**



>> Children aren't just small adults <<

More studies?

**Aren't these the “Common Medicines” for
Common cold and flu?**

What about treatments for less common diseases?

What about diagnosis of less common diseases?

What about diagnosis & treatment of rare diseases?

>> Children aren't just small adults <<

The Pediatric Sector

- Many medical disorders in children are little understood and some diseases are rare
- Incentives to invest in research are low
- Access to latest knowledge in pediatric medicine is not widely available

Health-e-Child Project

- Knowledge Discovery
- Making Knowledge Actionable
- **Project Idea:** Build a European wide biomedical information platform that will lead to innovative and better healthcare solutions in pediatrics

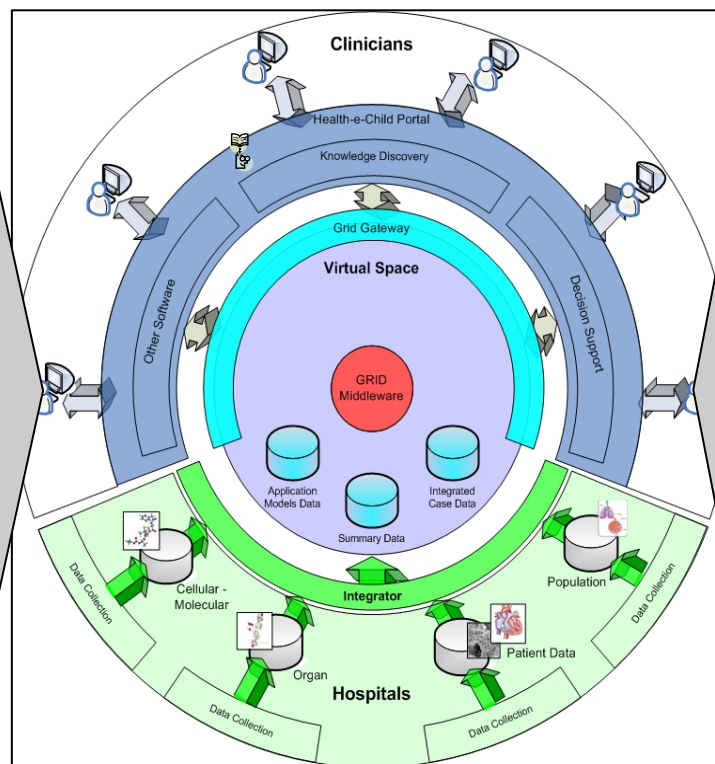


Health-e-Child – Motivation

- Demonstrating leadership in bringing hospitals, research institutions and industry together to solve highly complex healthcare challenges that any single entity can not address
- Positioning at the forefront of research on the integration of traditional and emerging sources of biomedical information
- Creating and providing access to biomedical knowledge repositories for personalized and preventive healthcare
- Facilitating the dissemination of the clinical excellence across Europe by setting up new technologies, clinical workflows and standards
- Helping to advance the practice of medicine for children with rare diseases

Launching an Integrated Information Platform

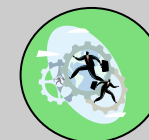
- Initiate consortium of leading research institutions and private companies
- Leverage opportunities provided by the European Union's 6th Framework Program
- Focus on state-of-the-art scalable technologies for information sharing and knowledge discovery (Grid)
- Start collecting multimodal biomedical information (clinical, genomics, lab, imaging)



Networks across



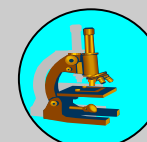
Clinical Sites



R&D



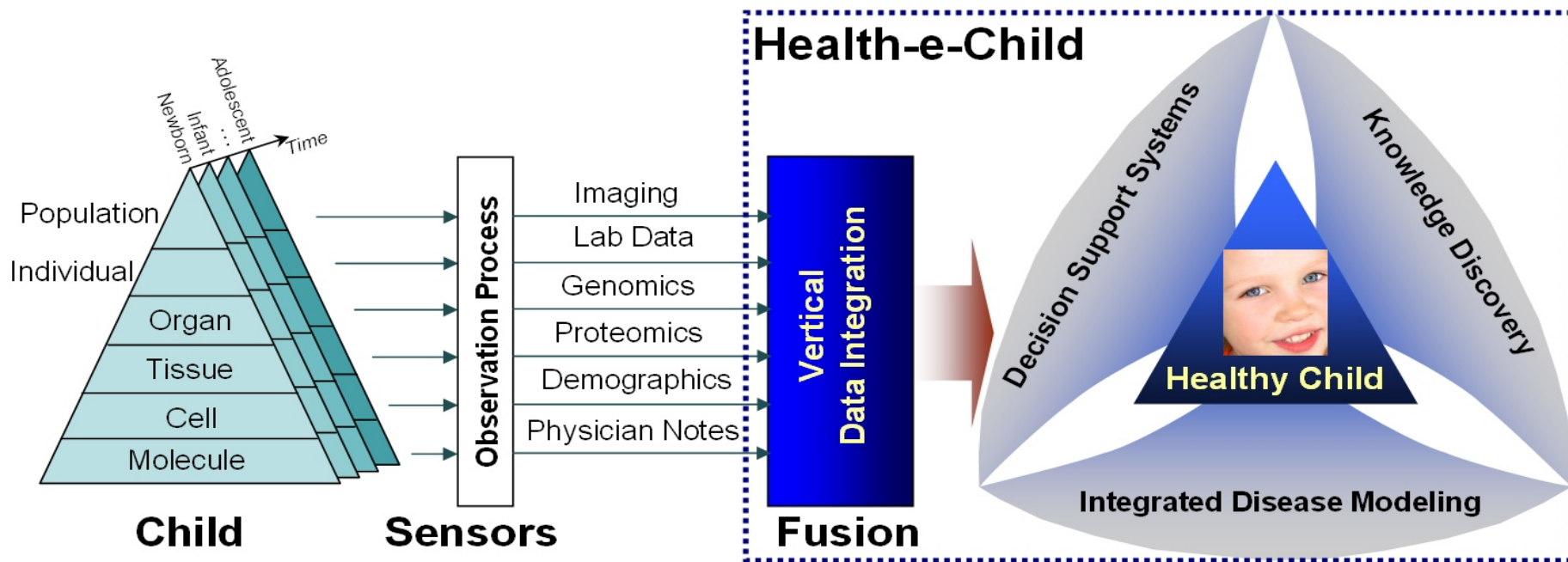
Individual Doctors



Universities

Medical practice and research are highly dependent on data and IT

Making Knowledge Actionable at Point-of-Care



European Network of Clinical Excellence in Pediatrics

- Siemens leading the consortium
- Several pediatric hospitals
 - Gaslini, Genoa, Italy
 - GOSH, London, UK
 - Necker, Paris, France
- Research on three pediatric disease areas: brain tumours, arthritis, and cardiac disorders
- Strong interdisciplinary team across
 - countries and languages
 - private companies, medical institutions, universities
- Joint effort of Med and CT groups in both Europe and US

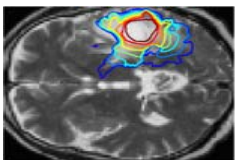


Major Achievements



- Scalable integration platform being set-up at the partner hospitals in France, Italy, UK

Health-e-Child demonstration awarded by the main European conference on Grid Computing



- Advanced knowledge discovery research projects bring together clinicians, biologists, mathematicians and computer scientists

Health-e-Child data suggests a biological difference between tumors located in different parts of the brain, potentially opening the road for better, personalized brain tumor treatment



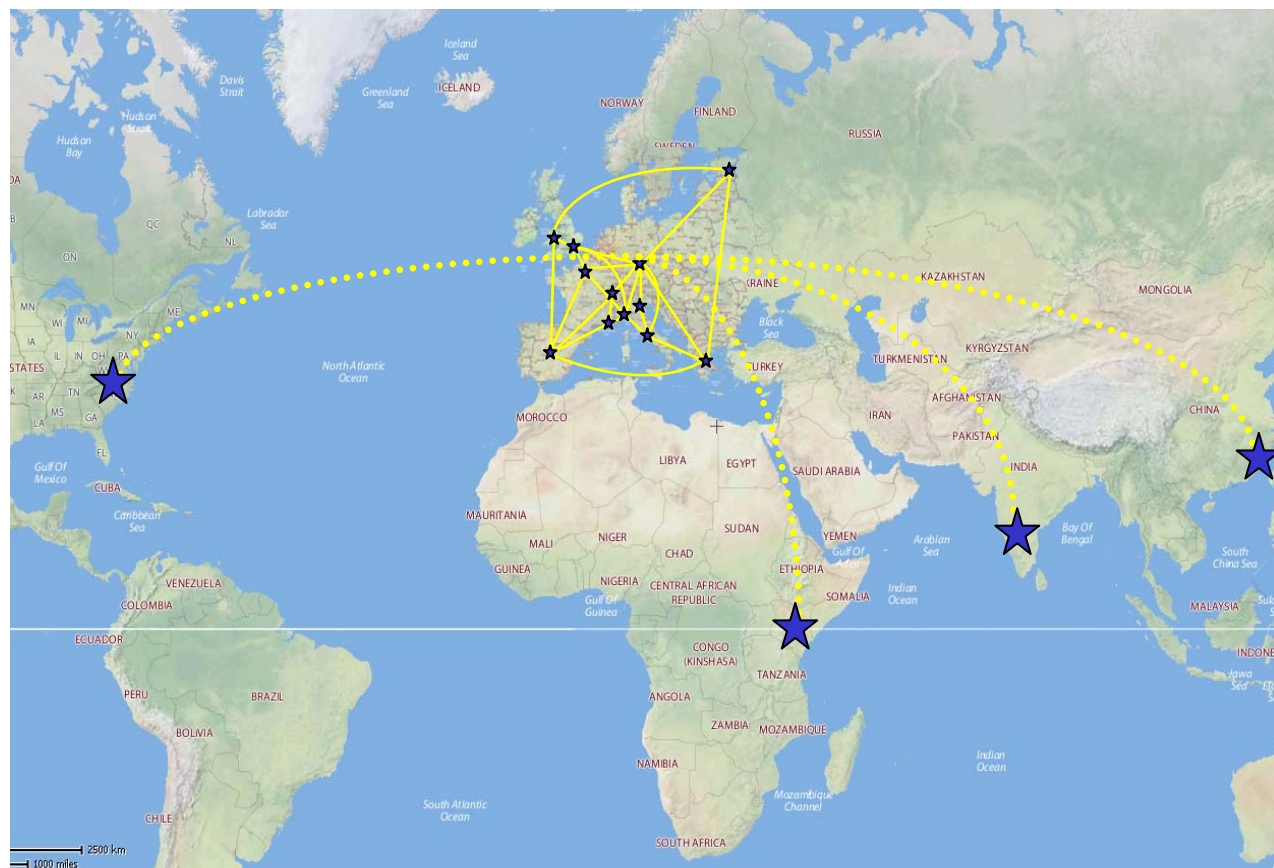
- Design and delivery of interdisciplinary training courses to both the Health-e-Child Consortium and the larger biomedical community

First Health-e-Child training activities have been held in 2007 in Bologna, Italy, covering the training course "Genetics of Pediatric Inflammatory Diseases"



Next Objective: World-Wide Platform for Pediatrics

- New leading hospitals join the Health-e-Child Network (e.g., in US)
- Provide low-cost access to clinical knowledge repositories to hospitals in underdeveloped countries
- Large scale information-based biomedical research
- Support for patient centric healthcare



Our Partners

Prof. Pongiglione is certain that above all the (Health-e-Child) database will serve as a medium for expanding knowledge and experience.



Prof Martini: "With Health-e-Child, I hope that step-by-step we will be discovering factors that enable us early to predict the course of the disease."

Prof. Giacomo Pongiglione and Prof. Alberto Martini
of the Giannina Gaslini Hospital,
the largest publicly funded pediatric hospital in Italy

The future of pediatric knowledge discovery and decision support

9.30 Chairman's Opening Address

Alok Gupta, Ph.D., M.B.A., Vice President, IKM Division, Siemens Medical Solutions

9.45 Introduction

Edwin Morley-Fletcher, President of Lynkeus

"Towards Personalised Healthcare through Health-e-Child clinical and technological innovation"

10.00 Scientific Breakthroughs of Health-e-Child

Giacomo Pongiglione, Clinical Coordinator of HeC, IRCCS G. Gaslini

"Best Clinical Practices and Integrated Disease Modelling"

Yannis Ioannidis, University of Athens

"Knowledge Discovery Mechanisms applied on Integrated Databases "

Dorin Comaniciu, Siemens AG

"Developing Clinical Decision Support Systems in Paediatrics"

11.20 Coffee break

11.40 Cutting-edge Applications of Health-e-Child

David Manset, Maat G Knowledge, Toledo

"Health-e-Child: Pushing the security and functionality boundaries of GRIDDS for eHealth"

Alessandro Verri, Università di Genova, DISI

"Examples of computer generated disease modelling in cardiology, rheumatology and paediatric oncology"

12.20 Discussants

Gianfranco Bottazzo, Direttore scientifico, Ospedale Pediatrico Bambino Gesù

Allan Everett, Pediatric Cardiology, Johns Hopkins Children's Center, Baltimore

13.00 Closing Remarks

Festival della Scienza

Key Take Aways

- ✓ The interdisciplinary Health-e-Child project exploits advances in medical research and information technology for the progress of pediatrics
- ✓ Clinical knowledge sharing across hospitals in multiple countries and continents
- ✓ Dissemination to remote clinical sites and developing countries
- ✓ The project drives key interdisciplinary activities, while bringing direct benefits to the pediatric community
 - access to large biomedical knowledge repositories
 - information-driven medical research
 - advanced integrated disease models
 - comprehensive view of a child's health

