European Expert Paediatric Oncology Reference Network for Diagnostics and Treatment

- Call: 4.2.2.7. Pilot networks of cooperation under Directive 2011/24/EU
Key issues addressed by the Directive

**Directive 2011/24/EU of patients' rights in cross-border healthcare**

**focussing on patients' rights & healthcare across the Union:**

- Right to **choose and be reimbursed**, under certain circumstances for, **healthcare provided** by public or private providers located in the EU.

- More **transparency about their rights**, treatment options or, the quality and safety levels of healthcare providers.

- Strong focus on **cooperation among Member States**:

**Entry into force at National level 25 October 2013**
Background

- **Second Programme in the field of health (2008-2013)**

  - Adopted on 23 October 2007, by the European Parliament and the Council
  
  - Intended to complement, support and add value to the policies of the Member States and to contribute to increased solidarity and prosperity in the EU.
  
  - Objectives:
    - to improve citizens' health security;
    - to promote health, including the reduction of health inequalities and
    - to generate and disseminate health information and knowledge.
Cancer in Children and Adolescents

A Rare Disease

➢ > 60 different diseases from newborns to teenagers
  (even more if biomarkers are considered!)
➢ 15 000 new cases each year in Europe!
➢ 3000 will die each year
➢ 1 out of 1000 adults aged 18 to 40 is a paediatric cancer survivor

... a significant Public Health Issue
What is special about Paediatric Oncology in Europe?

- EU public specialized centres
- Leukemia/Tumour specific Networking within clinical trial structures since late 60tes
  - 50% of patients treated within trials (phase I to III)
  - 30% of patients treated according to standard within prospective studies
  - Less than 5% of pharma-sponsored trials
- Many high-level research teams dedicated to paediatric tumour biology

A unique situation for an orphan disease!
A Major Academic Effort!

Survival Rates of Children and Young Adults Suffering from Cancer

- > 90% 2020
- 80% today
- <10% < 1960

Source: Forschungsbüro Mente

www.forschungsbuero-mente.de

Key:
- acute lymphoblastic leukaemia
- Acute myeloid leukaemia
- Hodgkin lymphomas
- Non-Hodgkin lymphomas
- Nephroblastoma
- Osteosarcomas
- Ewing sarcomas
- Rhabdomyosarcomas
- Brain tumours
- Germ cell tumours
- Neuroblastoma and ganglioneuroblastoma
FP7 “Network of Excellence”
Kick Off January 2011
33 Partners / 11 European Countries
18 WP: 80 Milestones
82 Deliverables
European Network for Cancer Research in Children and Adolescents

Objectives

- Improve both cure and quality of cure of children and adolescents suffering of cancer
- Facilitate access to:
  - Innovative therapies and tailored medicines
  - Standard care across Europe
- Develop biology-guided therapies
- Propose a European Virtual European Institute for Cancer Research in Children and Adolescents
European Network for Cancer Research in Children and Adolescents

WEBSITE: www.encca.eu

For previous years please check www.encca.eu
INTEGRATION: European Clinical Research Council

Chairs of European Paediatric Oncology Research Groups

- CWS (Cooperative Weichteilsarkom Studiengruppe or Cooperative Soft Tissue Sarcoma Study Group)
- EBMT (European Group for bone marrow and stem cell transplantation - Paediatric Working Party)
- EICNHL (European Inter-group cooperation on childhood and adolescent Non Hodgkin Lymphoma)
- EHL (European Hodgkin's Consortium)
- EpSSG (European Paediatric Soft Tissue Sarcoma Study Group)
- EURAMOS (osteosarcoma)
- I-BFM (The International BFM Study Group)
- SIOP-RTSG (SIOP Wilms Tumour)
- SIOPEL (SIOPE-Epithelial Liver Tumour Study Group)
- SIOOPEN (SIOP Europe Neuroblastoma Group)
- ITCC (Innovative Therapies for Children with Cancer)
- EWOG-MDS (myelodysplasia)
- EURO-E.W.I.N.G. (UK Novel Agents Subgroup)
- Germ Cell Tumours
- Histiocyte Society
- SIOP Brain tumour group

European Network for Cancer Research in Children and Adolescents
INTEGRATION: European Clinical Research Council

Chairs of the National Societies of Paediatric Haematology-Oncology in Europe

• Blue or pink: European countries with NaPHOS (blue: in EU / pink: non-EU)

• Dashed countries: European countries without a NaPHOS
NEXT LEVEL:
European Reference Networks (ERN):
Aim of Article 12:
(Directive Patient's Rights to Cross border Healthcare)

- Support the development of European Reference Networks
- Improving access to highly specialised healthcare for patients suffering of diseases and conditions:
  - low prevalence/rare
  - complex and cost-intensive
  - requiring a particular concentration of expertise
4.2.2.7. **Pilot networks of cooperation under Directive 2011/24/EU**

- European reference networks will link health care providers and centres of expertise in the Member States.
  - to improve **access to diagnosis and provide high-quality health care** to patients who have **conditions that require a particular concentration of resources or expertise**, especially where the expertise is rare and case volume low.
  - concentration of low-frequency or high complexity diagnostic and therapeutic procedures in services that have an adequate caseload and audited results.
  - It also covers an **evaluation of outcomes**.
## ExPO-r-Net Consortium

<table>
<thead>
<tr>
<th>18 Associated Partners</th>
<th>Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRI (Coordinator)</td>
<td>St. Anna Kinderkrebsforschung e.V.</td>
<td>Austria</td>
</tr>
<tr>
<td>SIOPE</td>
<td>European Society of Paediatric Oncology</td>
<td>Belgium</td>
</tr>
<tr>
<td>IGR</td>
<td>Institut Gustave-Roussy</td>
<td>France</td>
</tr>
<tr>
<td>MUL</td>
<td>Medical University of Lublin</td>
<td>Poland</td>
</tr>
<tr>
<td>HULAFE</td>
<td>Fundación para la Investigación Hospital Universitario La Fe</td>
<td>Spain</td>
</tr>
<tr>
<td>ULUND</td>
<td>Lund University</td>
<td>Sweden</td>
</tr>
<tr>
<td>AOPD</td>
<td>Azienda Ospedaliera di Padova</td>
<td>Italy</td>
</tr>
<tr>
<td>IGG</td>
<td>Istituto Giannina Gaslini</td>
<td>Italy</td>
</tr>
<tr>
<td>CAU</td>
<td>Christian-Albrechts-Universitaet zu Kiel</td>
<td>Germany</td>
</tr>
<tr>
<td>AIT</td>
<td>Austrian Institute of Technology</td>
<td>Austria</td>
</tr>
<tr>
<td>CINECA</td>
<td>Consorzio Interuniversitario</td>
<td>Italy</td>
</tr>
<tr>
<td>INT</td>
<td>Istituto Nazionale dei Tumori</td>
<td>Italy</td>
</tr>
<tr>
<td>KlinikumDo</td>
<td>Klinikum Dortmund GmbH</td>
<td>Germany</td>
</tr>
<tr>
<td>UCL</td>
<td>University College London</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UOB</td>
<td>Lund University</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>ECRMF</td>
<td>European Cancer Research Managers Foundation</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>Charité</td>
<td>Universitätsmedizin Berlin: Charité</td>
<td>Germany</td>
</tr>
<tr>
<td>ÖKKH</td>
<td>Österreichische Kinder-Krebs-Hilfe</td>
<td>Austria</td>
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</tbody>
</table>

### Collaborating partners

<table>
<thead>
<tr>
<th>Number</th>
<th>42</th>
<th>includes PARENTS &amp; PATIENTS ADVISORY COMMITTEE (SIOPE/encca – PAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern European</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Western European</td>
<td>83%</td>
<td></td>
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</tbody>
</table>
Parent Patient Advocacy Committee (PPAC)
Created at the 3rd European Member Meeting of ICCCPO in April 2012 in Schengen.

List of members (ICCCPO- European branch)
- France: ARNOLD Frederic, UNAPECLE,
- Spain: BASSET Luisa, Federacion Española de padres de Niños con Cáncer
- Luxembourg: COSTELLOE Jacqueline, Een Häerz fir kriibskrank Kanner,
- Bosnia and Hercegovina: KAMERIĆ Lejla, The heart for the kids with cancer in FBiH, KAMERIĆ Neira, Cancer Survivor Network,
- Greece: TSIROU Aimilia, Kyttaro/Greek Survivors Association,

Expert advisors
- Germany, BODE Gerlind,
- The Netherlands: NAAFS-WILSTRA Marianne

European Network for Cancer Research in Children and Adolescents
OVERALL AIM:

To reduce the current inequalities in survival by improving the quality of the current healthcare provided across Europe, in particular European countries with lower healthcare.

Link pre-existing reference centres of excellence, seeking mechanism to facilitate provision of information and knowledge (ICT tools, e-Health) and offer patients cross-border best practice health interventions to patients and families when really indicated.
Project goals

- The ExPO-r-NeT project will build a Paediatric Oncology (PO) European Reference Network (ERN) providing paramount requirements for ‘Cross-border healthcare’
  - Provision of healthcare to children and young people with cancer in a Member State other than the Member State of affiliation.
  - Identification of the target groups, i.e. children with special diagnostic and therapeutic needs with conditions requiring a particular concentration of resources or expertise, especially when the expertise with certain cancer conditions is rare and case volume low.
  - Reduction of current inequalities in childhood cancer survival and healthcare capabilities in different member states.
  - Establish a PO-ERN linking pre-existing leukaemia & tumour reference centres with tumour boards to provide cross border expertise. The latter is inherent to the Cooperative PO-Clinical Trial tumour and Leukaemia Groups which may contribute high-level diagnostic and medical expertise to rare childhood cancer populations.
  - Improving access to high-quality health care for children with cancer whose conditions require specialised resources or expertise not widely available due to low case volumes and lack of local resource.
Objectives

<table>
<thead>
<tr>
<th>Nb</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Identifying the needs</strong> of rare childhood and young people cancer types and entity subgroups with experts of the ECTG (ECRC) by addressing also the challenges (costs, resources, psychological burden and ethical aspects).</td>
</tr>
<tr>
<td>2</td>
<td>Build a <strong>Paediatric Oncology ERN–roadmap</strong> to identified and certified reference sites and tumour boards.</td>
</tr>
<tr>
<td>3</td>
<td>Establishment of a <strong>Paediatric Oncology tumour board ERN</strong> working to common standards and <strong>using IT tools based on E-Hhealth</strong> concepts for sharing and providing expertise and advise.</td>
</tr>
<tr>
<td>4</td>
<td>Defining the <strong>criteria for a common process for identification and certification</strong> of paediatric oncology <strong>expert centres in Europe.</strong></td>
</tr>
<tr>
<td>5</td>
<td>The <strong>cross-border dimension of long-term follow-up</strong> of childhood cancer survivors in Europe: the survivorship passport as an instrument for crucial treatment and follow-up data.</td>
</tr>
<tr>
<td>6</td>
<td>Integrating <strong>very rare tumors and soft tissue sarcomas</strong> into an European reference network.</td>
</tr>
</tbody>
</table>
## Structure

### 3 Horizontal Work Packages

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coordination of the project</td>
<td>CCRI</td>
</tr>
<tr>
<td>2</td>
<td>Dissemination of the project</td>
<td>SIOPE</td>
</tr>
<tr>
<td>3</td>
<td>Evaluation of the project</td>
<td>UOB</td>
</tr>
</tbody>
</table>

### 5 Core Work Packages

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>Addressing needs and challenges of cross-border healthcare co-operations and current expert fragmentation.</td>
<td>CCRI</td>
</tr>
<tr>
<td>5</td>
<td>Paediatric Oncology tumour board ERN based on E-Health and ICT concepts for sharing and providing expert advice.</td>
<td>HULAFE</td>
</tr>
<tr>
<td>6</td>
<td>Defining criteria for a common process for identification and certification of PO expert centres in Europe.</td>
<td>MUL</td>
</tr>
<tr>
<td>7</td>
<td>Cross-border dimension of long-term follow-up: survivorship passport with crucial treatment &amp; follow up data.</td>
<td>ULUND</td>
</tr>
<tr>
<td>8</td>
<td>Integrating children with very rare tumours in a European Reference Network.</td>
<td>AOPD</td>
</tr>
</tbody>
</table>
WP 4: CCRI

Addressing needs and challenges of cross-border healthcare co-operations and current expert fragmentation.

- Identifying special therapeutic needs of young people with cancer with experts of the ECTG (ECRC) requiring high expertise interventions (i.e. special surgery, radiotherapy (proton therapy), stem cell transplants).

- Addressing also the challenges (costs, resources, psychological burden and ethical aspects).

- Identify European institution ready to engage as reference centers by establishing a/o rolling out tumor boards.

- Identify European Institutions /hospitals offering top level expertise for special therapeutic interventions.

Roadmap for public health care providers and patients
To develop a strategy to build Expo-r-net TB as tools for providing access to expert care to all European children with cancer in a cross-border setting.

Implementation of modern IT tool across borders will allow TB to share expert opinions for European children with cancer in need of special cross-border settings.
Telemedicine and other IT solutions and tools are the basis for this project.

- Remote guidance and Diagnosis
- Secure exchange of Patient information, databases/registries
- Remote training
- Remote monitoring and follow-up
- Virtual clinical/tumour boards
- European Reference Network
- Member
- Member
- Member
- Member
- Member
- Local Healthcare Provider
- Local Healthcare Provider
- Remote monitoring and follow-up
- Tele-radiology
- Tele-surgery
- Tele-imaging
- Tele-dermatology
- Tele-consultation
- ....
Elements of a Biomedical Research Infrastructure

- Registries
- Biosamples Biobanking
- Literature Knowledge
- Data processing/Statistics
- Secondary Use of Electronic Patient Records
- Electronic Data Capture
- Trial Data
- Virtual Institute
  - Security and Identification
  - Document / Data Registry
  - Data/Document Storage
  - Research Services
    - Pharmacovigilance, Image Management,
What could be a solution for ERN requirements?

This situation is similar to healthcare ...

- Adoption of a solution based on the Integrating the Healthcare Enterprise (IHE)

www.ihe.net
Integrating the Healthcare Enterprise

- IHE is designed for **interoperability**
- IHE is already **established and approved** in healthcare
- IHE is based on **standards commonly used** in healthcare and biomedical research
- IHE represents a **fully open approach**

Integration of data
- document based repository
- no complete database model needed upfront
- Takes care of the diversity of data, processes and research questions
- Well poised for secondary use of data
ICT Landscape

Institutional IT Systems

Interoperability Initiatives

Directive 95/46/EC
ELGA-G
Directive 2011/24/EU

National and international Regulations

Health Information Exchange Systems

European Network for Cancer Research in Children and Adolescents
IHE - Integrating the Healthcare Enterprise
To promote high quality patient care in paediatric oncology centres through a recognised system of assessment and to reduce inequalities in care among centres and countries

- Build a Ped O ERN-roadmap to identify reference centers and tumor boards.
- Define relevant PO eligibility criteria and conditions for assessment.

Cross-border dimension of long-term follow-up: survivorship passport with crucial treatment & follow-up data.

- To build a virtual paediatric oncology expert reference network for late effects after treatment for cancer in childhood and adolescence
- To translate the Survivorship passport and relevant Guidelines into multiple European languages
The Survivorship Passport

• Riccardo Haupt
• Silvia Caruso
• Francesca Bagnasco
  IGG

• Sabine Karner
• Anita Kienesberger
  ICCCPO

• Giulia Stabile
• Maurizio Ortali
• Davide Saraceno
• Roberta Amato
  CINECA

All partners of:
ENCCA: WP 13
PanCareSurFup: WP6
The survivorship passport

### Diagnosis

<table>
<thead>
<tr>
<th>N. passport</th>
<th>Initials</th>
<th>Date of Birth</th>
<th>Date of Registration</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT001201304121011</td>
<td>DOE JHON</td>
<td>21/03/1999</td>
<td>12/04/2013</td>
<td>-</td>
</tr>
</tbody>
</table>

**Cancer category according to ICCC-3 diagnostic group/division**
In case of relapse/progression after first elective end of treatment, a separate form is available.
The survivorship passport

Data integration options

- Integration with existing data flows through **standard format files**
- Automatic or on-demand **data import** from local databases to Passport central database
- **Integration** with Clinical Trials databases
- **DB download** for hospitals according to data access rules
- Possibility to develop specific web services for seamless data integration
Clinical Recommendations for Follow-Up

- **STRONG recommendation** "is recommended"
- **MODERATE recommendation** "is reasonable"
- **WEAK recommendation** "may be reasonable"
- **NOT TO DO recommendation** "is not recommended"
The Survivorship Passport
Present status and future vision?

- A template for the individual patient at the moment of the elective end of therapies containing standardized and condensed cancer history and relevant therapy information
- Paper and electronic based, potentially including images and other relevant medical source documents.
- To provide advice and guidance on patient-specific long-term follow-up of possible late effects
- **All languages of the EU ⇒ ExPO-r-Net**
- Integration into future eHealth based platforms & tools for the survivor population allowing life long best possible care based on accurate information and paying tribute to Europe mobility
WP 8: Padova

Integrating children with very rare tumours in a European Reference Network

through the identification and connection of Pediatric Oncology Centres and Cooperative Groups with the necessary expertise

with the aim
to provide accurate diagnosis and evidence-based treatment to children with VRT in Europe (and worldwide)

Creation of a European Cooperative Group devoted to VRT
VISION:
OVERCOME INEQUALITIES IN EUROPE

A huge task and role for Information Technologies to treat Childhood Cancer and to improve outcomes!

Special thanks to IT partner in Clinical Trial Management and European Framework Projects for more than a decade
Summary
Project expected impact

The strategic relevance

- Generation of information and provision of a framework for the PO-ERN to improve standards of care for children and young people with cancer.
- Next level of integration within Pediatric Oncology
- Follow up and advise for childhood cancer survivors allowing integration of outcomes research

The innovative contribution

- A clear roadmap to approved expert referral sites and tumour advisory boards for healthcare providers = Pediatric Oncology ERN Network
- Fostering eHealth solutions based on interoperability and standardisation to allow well functioning tumour boards
European Reference Networks

Network
Rare neuromuscular diseases
(Malattie neuromuscolari rare)

Member
Azienda Ospedaliera Universitaria di Pisa — Italy