Rare cancers' policy:

A comparative analysis of the priorities and recommendations on rare and paediatric cancers based on National Cancer Control Programmes (NCCPs), Rare Diseases Plans, EU funded initiatives and priorities for patients' organisations

TASKS 1.1 and 1.2, WP10

Joint Action on Rare Cancers (JARC)

Co-funded by
the Health Programme
of the European Union

ñThis Deliverable is a part of the joint action ñ724161/JARCò which has received funding from the European Unionôs Health Programme (2014-2020)ò.

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FOREWORD

This work was carried out in the framework of tasks 1.1 and 1.2 of WP10. Two relevant findings can be extrapolated. On the one hand, rare cancers are hardly addressed in National Cancer Control Programmes (NCCPs) or Rare Disease Plans, the former mainly focusing on common cancers. On the other hand, the actions and priorities from these different plans and strategies allowed for the synthesis and development of a transversal view of a range of responses to the needs of rare cancer patients. The recommendations proposed in this report are based on a shared vision, built upon the plans of Member States. The recommendations also emphasise that these cancers, due to their rarity, have a strong European added value. Given that no one country can tackle the issue of rare cancers alone, a European approach to the management of rare cancers is recommended.

TASK 1.1, WP10, JARC

COMPARATIVE ANALYSIS OF PRIORITIES AND RECOMMENDATIONS ON RARE AND PAEDIATRIC CANCERS IN NATIONAL CANCER CONTROL PROGRAMMES (NCCPS)

1. INTRODUCTION

This report examines the National Cancer Control Programmes (NCCPs) of 15 EU Member States in order to understand and compare the different policies and planning strategies that exist for rare and paediatric cancers. The work reported here corresponds to task 1.1 under Objective 1 of the Work Package on Rare Cancer Policy, part of the Joint Action on Rare Cancer (JARC).

The working hypothesis of this research is that rare cancers (including paediatric cancers) have a lower presence in NCCPs compared to more common oncological pathologies, despite the fact that together these cancers comprise the 22% of the total cancer cases diagnosed every year in the EU-28 (Gatta et al, Eur J Cancer. 2011). According to some estimates, there are around 200 different types of rare cancers, including rare adult solid tumours and rare haematological cancers as well as all childhood cancers. For children aged up to 14 years, cancer is the second most frequent cause of death and the first one by disease in children above one year. But these pathologies tend to have less social visibility and attract less research interest than other oncological pathologies.

In line with the results of the present report, rare adult cancers have only a modest presence in cancer plans, and related content is highly variable. Paediatric cancers are present in some of the documents analysed, but a comprehensive approach is also lacking. Individual and comparative analyses between the two groups of pathologies reveal both the situation of each disease group and the distance separating one from the other. Taken together, however, our findings show the need for greater institutional attention toward all rare cancers.

This document lays the foundation for developing recommendations on policy measures to address rare cancers in national plans and strategies on cancer and rare diseases.

2. METHODOLOGY

Design

We performed a documentary analysis on the information, priorities, actions and recommendations in the area of rare and paediatric cancers in different European countries. Primary documents were the NCCPs of selected European countries.

Document retrieval

Our document search benefited from previous work that identified cancer plans during the EPAAC (European Partnership for Action Against Cancer) and CanCon (Cancer Control) Joint Actions. Two relevant sources of information for retrieving cancer plan documents were the EPAAC website[1] and the International Cancer Control Partnership (ICCP) portal[2]. The 2016 survey carried out as part of the CanCon initiative and published under the name *National Cancer Control Programmes/Cancer Documents in EU in 2016. Report on the basis of the analysis of data from the survey* was also of great help. The report describes the various terms used to refer to cancer plans, including 'programme', 'plan' and 'strategy'. Although this heterogeneity also extends to some degree to the contents of the documents, we will refer to them collectively (and synonymously) in this report as NCCPs or cancer plans.

Following the data collection process, we examined 15 NCCPs (see Annex 1) written in languages that our research team could comfortably work in or which were translated to English. Countries with included NCCPs are detailed in table 1.

Table 1. NCCPs included in the analysis in relation to all EU Member States

COUNTRIES WITH INCLUDED NCCP					
Austria	✓	Hungary		Romania	
Belgium	✓	Iceland		Slovak Republic	
Bulgaria		Ireland	✓	Slovenia	✓
Croatia		Italy	✓	Spain	✓
Cyprus		Latvia		Sweden	✓
Czech Republic	✓	Lithuania		UK-England	✓
Denmark		Luxembourg		UK-Wales	
Estonia	✓	Malta	✓	UK-Ireland	
Finland		Montenegro		Uk-Scotland	
France	✓	Netherlands	✓		
Germany	✓	Poland			
Greece		Portugal	✓		

[1] www.epaac.eu.
[2] www.iccp-portal.org/map

Analysis

We first identified the thematic areas related to rare and paediatric cancers that the NCCPs cover. Taking advantage of the existing templates created during the analysis of the cancer plans under CanCon, we summarised these areas in tables 3 and 6.

This identification enabled the extraction and organisation of data regarding the content of the plans along each of those areas. Data were tabulated by country and section of the corresponding NCCP to facilitate subsequent access (Annexes 2 and 3). In addition, we assessed the extent to which the included plans contained information related to rare and paediatric cancers. The level of information contained for each group of diseases was categorised as follows.

(1) No reference to rare or paediatric cancers is made.
(2) Rare or paediatric cancers should be prioritised but no information or specific planning criteria are given.
(3) Some information and planning criteria or recommendations are given.
(4) Specific information and planning criteria or recommendations measures are given.
(5) Comprehensive approach

Following the content identification, we performed a thematic analysis, grouping data into topics to allow a narrative description of the status of rare and paediatric cancers in European NCCPs (tables 4 and 7). The analysis concluded by comparing the results along three axes:

- ✓ *Common priorities and recommendations in the areas of rare and paediatric cancers*
- ✓ *Well-developed priorities and recommendations in the area of paediatric cancers*
- ✓ *Well-developed priorities and recommendations in the area of rare cancers*

The reporting of results follows the priorities and recommendations made in each cancer plan; these are tagged with an alphabetical code. Annex 4 describes the association between codes and countries.

Limitations

We were not able to include all cancer plans in the analysis. First of all, not all countries have published their plan, which limited the availability of the documents to us. Moreover, each plan is written in the national language(s) of the country, but its translation to English is infrequent. At the same time, we excluded plans published before 2008, as we assumed they

were no longer in force. It is also worth noting that some regional plans exist, but our analysis was limited to those at a country level.

In addition, we extracted only information that exclusively related to rare and paediatric cancers. That is, we did not formally consider how services for these cancers may have been influenced by policies or cross-sectional measures developed for all oncological diseases.

3. RESULTS. PRIORITIES AND RECOMMENDATIONS FOR RARE CANCERS IN ADULTS IN EUROPEAN NCCPS

Of the 15 cancer plans we analysed, 8 considered rare cancers to some extent, while 7 contained no information. Table 2 summarises how well the topic is developed in the plans, according to the categories described in the Methods.

Table 2. Degree of information and development of measures in the field of rare cancer

COUNTRY		COUNTRY	
Austria	1	Malta	4
Belgium	3	Netherlands	2
Czech Republic	1	Portugal	1
Estonia	1	Slovenia	3
France	5	Spain	1
Germany	1	Sweden	1
Ireland	3	UK-England	3
Italy	4		

Note: (1) No reference to rare or paediatric cancers is made. **(2)** Rare or paediatric cancers should be prioritised but no information or specific planning criteria are given. **(3)** Some information and planning criteria or recommendations are given. **(4)** Specific information and planning criteria or recommendations measures are given. **(5)** Comprehensive approach.

Level of information	Countries
(1) No reference to rare or paediatric cancers is made	Austria, Czech Republic, Estonia, Germany, Portugal, Spain, Sweden
(2) Rare or paediatric cancers should be prioritised but no information or specific planning criteria are given	Netherlands
(3) Some information and planning criteria or recommendations are given	Belgium, Ireland, Slovenia, UK-England
(4) Specific information and planning criteria or recommendations measures are given.	Italy, Malta
(5) Comprehensive approach	France

After identifying the cancer plans that contained information on rare cancers, we analysed the content to identify 10 areas covered (table 3). In table 4, we have reorganized these under five broader topics to facilitate the analysis and presentation of results.

Table 3. Areas covered by NCCPs on rare cancers.

COUNTRY	1. Definition of rare cancers and epidemiology	2. Linkage to rare diseases	3. Organisation of cancer services	4. Effective patterns of referral	5. Linkage to international centres of excellence	6. Histopathological and imaging diagnosis and early detection	7. Clinical research	8. Patients' involvement and availability of information	9. Evidence assessment and access to orphan drugs	10. Population-based databases, registries, biobanks
Austria	—	—	—	—	—	—	—	—	—	—
Belgium	—	—	x	—	—	—	—	—	—	—
Czech Rep	—	—	—	—	—	—	—	—	—	—
Estonia	—	—	—	—	—	—	—	—	—	—
France	ð	x	x	x	x	x	x	x	ð	ð
Germany	—	—	—	—	—	—	—	—	—	—
Ireland	x	—	x	x	x	—	—	—	—	—
Italy	x	x	x	x	—	x	x	x	x	—
Malta	x	x	—	x	x	x	x	x	x	x
Netherlands	—	—	x	—	—	—	—	—	—	—
Portugal	—	—	—	—	—	—	—	—	—	—
Slovenia	x	—	x	—	—	x	—	—	—	—
Spain	—	—	—	—	—	—	—	—	—	—
Sweden	—	—	—	—	—	—	—	—	—	—
UK-England	x	—	x	—	—	—	x	x	x	—

Note: "X" signifies explicit mention in cancer plan; "—"indicates that the area was not covered.

Table 4. Areas of rare cancers covered by NCCPs, according to five broad topics

Areas covered by NCCPs	Topics
1. Definition of rare cancers and epidemiology 2. Linkage to rare diseases	**(a) Epidemiology and link to the rare disease field**
3. Organisation of cancer services 4. Effective patterns of referral 5. Linkage to international centres of excellence	**(b) Healthcare organisation and quality**
6. Histopathological and imaging diagnosis and early detection 7. Clinical research	**(c) Clinical Practice and Research**
8. Patients' involvement and availability of information	**(d) Patients' involvement and availability of information**
9. Evidence assessment and access to orphan drugs 10. Population-based databases, registries, biobanks	**(e) HTA and data registration**

Our results indicate that despite their contribution to the overall cancer incidence, rare cancers are not a prominent topic in NCCPs, the principal instrument used by European countries to organise their cancer services. Thus, of the 15 cancer plans analysed, only 8 contained some information on rare cancers, and only 3 of these described specific measures to address this disease group or took a comprehensive approach.

(a) Epidemiology and link to the rare diseases field

Five countries provided details on the incidence of rare cancers in their populations (IT,IE,MT,UK,SI), three of which (IT,IE,MT) referred to the lack of an internationally accepted definition for this group of diseases. NCCP authors highlighted the contrast between the definition of rare diseases based on prevalence (no more than 5 per 10 000 persons in the EU) and the threshold set by RARECARENET (i.e., incidence of less than 6 per 100,000 population per year). The latter threshold would situate the incidence of rare cancers in different European countries from around 15% to 22%, or as an absolute measure, anywhere from 100 to 5200 new cases per year. Furthermore, two cancer plans (IT,MT) subclassify rare cancers by the population group affected: rare adult solid tumours, rare haematological cancers and all childhood cancers (13%, 8% and 1%, respectively for MT). There is also one plan that describes "very rare cancers" with an incidence established at <1/100.000 pop./year.

These two plans (IT,MT) are the only ones that explicitly define rare cancers as rare diseases, highlighting the need to functionally integrate these two areas in the context of care networks (IT).

(b) Heath care organisation and quality

The quantity and variety of information on health services administration across different NCCPs is significant, as is the set of strategies intended to improve access to high-quality care in a context requiring increasing multi-level coordination (hospitals with different levels of complexity, primary care, etc.). In that sense, it is worth making a distinction between the strategic dimension that focuses on health system changes and the specific proposals that address the organisation of health services.

With regard to the strategic dimension, rare cancer care is denominated 'quarternary care' (IE) due to the high level of specialisation that it involves and the need to reorganise services to improve the diagnostic and therapeutic approach. Changes are described at all levels: responsibilities for this type of patients within expert teams, changes in decision-making processes at the geographic level (among others), and infrastructure requirements. From this macro perspective, another plan (UK) alludes to the necessity of commissioning the services dedicated to these pathologies at the national level, together with paediatrics, adolescent health and young adult health. Both perspectives share the idea of establishing a specific policy framework for rare cancers that enables improvements in their control and the related care.

A second health system strategy, connected to the organisation of services, responds to the need to centralise case management or (from a similar perspective) to identify centres of excellence (IT,IE,SI,NL,BE,FR). The explicit logic for these strategies resides in the need to offer patients with rare cancers the best clinical expertise available, and indirectly to improve professional specialisation within the health system by increasing the volume of cases handled in specific centres. The plans also mention the need to seek economies of scale with regard to high-tech resources (IT) and the importance of setting qualitative as well as quantitative thresholds. The corollary is that the centres responsible for caring for patients with rare tumours should also be responsible for the resources (including the specialised human resources) and organisation needed to provide it (BE). The concentration of rare cancer cases in expert centres is the preeminent strategy for these diseases in cancer plans.

Within the dimension of health services organisation, one element stands out in several NCCPs: the role that expert multidisciplinary teams (MDTs) should play at the national level (IE,Ff,SI,NL,BE,FR). Two cancer plans highlight the need for cancer networks to facilitate access to such teams (FR,IT). In that sense, a distinction can be made between the countries where certain teams will take on all cases (IE), for example for soft tissue sarcoma or neuroendocrine cancer, and the countries with two broad levels of expertise: one at the regional and one at the national level. According to the latter model, some teams may be accredited to carry out diagnostic and treatment services for some rare cancers, but they must validate the treatment strategy with highly specialised teams of experts or directly refer patients to these teams if the complexity of the case crosses an established threshold (FR,UK).

The policy of centralisation lies at the intersection between the need to have expert teams and the decision on how much to centralise services (then increasing volume and promoting specialization), with the result that there may be ‘expert teams’, ‘nominated physicians’ (IE) in ‘designated centres’ (IE), ‘centres of excellence’ (IT), ‘tertiary institutions’ (SI) or ‘centres of expertise’ that assume these cases.

A second organisational element present in the cancer plans is continuity of care. This entails, for example, the need to specify the professionals and tasks in the coordinated care chain, including the GP, extramural carers and hospitals (when necessary) (NL). The identification of tasks in hospitals is an essential condition for the effectiveness of procedures, logistics and communication functions between hospitals or with the patients themselves. In that line, another cancer plan recognises geography as a challenge for coordinating care in patients with

rare cancers, proposing the development of 'cancer specialist nursing roles' as one measure to address it (UK).

Another organisational element that is relevant in the cancer plans is effective patient referral. In one NCCP, planners describe the need to establish clear pathways for the diagnosis and treatment of rare cancers, which implies easy access – and timely transfer of care – to reference centres and MDTs (IE). Another plan states that the identification of centres of excellence should contemplate referral in the context of patient migration (IT). Patients' freedom of choice with regard to centre and across different healthcare areas should be underwritten by the reimbursement mechanisms that permit it (MT,IT); likewise, barriers to choice (such as waiting lists) should also be minimised (IT). Linking effective referral with the guarantee that patients are treated with the level of complexity they require, another cancer plan highlights the importance of rapidly managing patients and of approaching any individual condition or level of complexity with an adequate response at regional or interregional level (FR). The objective, as stated, is to ensure that patients do not miss any opportunities for the most adequate treatment (including innovative therapies) or services. Thus, the role that expert MDTs play in these decision-making processes is critical. Local clinical teams may be able to manage these types of patients, but the expert MDTs will be responsible for validating the proposed treatment strategy or for assuming care of the patient directly (FR).

Finally, three island countries (or countries with some island territory) highlight the importance of linkage to international centres of excellence for improving management of people diagnosed with different forms of rare cancers (IE,MT,FR). Planners argue that the transfer of specialist knowledge and expertise should include cross-border centres, including through participation in ongoing activities at EU level in the field of rare cancers (MT). This change should include the establishment and maintenance of contacts and communications with relevant experts based on instruments that facilitate connectivity, for instance telemedicine, digital pathology systems or international centres of excellence. Some of these statements have been made previously or in parallel to the creation of the European Reference Networks (ERNs).

(c) Clinical practice & research

Diagnosis and clinical research for rare cancers are two key elements within cancer plans. Early detection and diagnostic processes are critical in the field of rare cancers, and four cancer plans emphasise this point in order to improve patient access to the maximum range of treatment options (FR,IT,SI,MT). In that sense, one measure that stands out is the facilitation

of double readings at pathological and image level. Errors in histopathological diagnoses are frequent in rare tumours, which should lead to a diagnostic review in centres of excellence or direct referrals to these centres for diagnosis. Expert pathologists and radiologists should be based in these centres or have a priority role there in order to provide a high-quality service. International collaboration should also be enabled through this approach.

Supporting double reading processes has led to the recommendation of certain measures to facilitate its implementation. Some plans have proposed specific mechanisms for reimbursement (IT,FR), while another plan recommends situating these processes within a general framework that is coherent with the care that patients with a rare cancer receive. In turn, this should occur while harmonising the organisation and financing of the devices that these patients assume (FR). In general, plans also emphasise the importance of centralising more complex diagnostic tests to favour the efficient distribution of resources (SI).

In the area of treatment and research, several cancer plans promote research into rare cancers, considering these fields to be "underserved" (IT,MT,UK,FR). The research can be performed in an academic or independent context, using dedicated funds (P) or financing from industry partnerships (FR). Planners also mention the opportunity offered by the new EU Clinical Trials Regulation to reduce the time it takes to set up studies, which opens the door to additional clinical trials in the area of rare cancers. There are also generic references to the fact that the quality of care should be equivalent for every provider and that centralising diagnosis and the planning of treatment strategies in expert centres should be organised in line with the best international practice.

(d) Patients' involvement

Generally, rare cancer patients report less satisfactory experiences in relation to care provided than patients with common cancers (UK). One critical aspect covered in different cancer plans has to do with the available information, as this can demand a greater effort on the part of the patients to find reference centres and specialists for diagnostic, treatment and post-treatment services. In that sense, the role of provider is key (IT,UK); centres should offer patients a directory of services, with signposts for how and where to find the most appropriate specialists. Another issue highlighted is the importance of involving the patients' communities (IT) and using patient-reported outcome measures (PROMs) and evaluations of care experiences to promote interaction with clinical research, thus amplifying patients' perspectives and priorities (MT).

(e) HTA and data registration

The specificity of rare cancers has led some NCCPs to introduce relevant considerations on the assessment of available evidence, particularly given the implications that this might have in terms of patient access to drugs or other therapies (IT,UK,MT). Avoiding discrimination against this patient profile may entail not applying the same quality standards to evidence evaluation in the decision-making processes around indications, which could result in a higher degree of tolerance of risk-adverse approaches. In this line, there are proposals for methodological innovation for adapting the biostatistical concepts of validity and precision to the circumstances of rare cancers (IT). As a corollary, the conditions for using drugs in Phase II studies (‘compassionate use') should be relaxed even if there is only partial evidence of positive outcomes and an international consensus exists. A further issue covered is the need to protect access routes to drugs for people in unique circumstances, like having a rare cancer (MT).

Finally, one cancer plan sets the objective of collecting specific population-based information on diagnosis and treatment of rare cancers (MT), lamenting the scarcity of registries and tissue banks for these pathologies.

3. PRIORITIES AND RECOMMENDATIONS FOR PAEDIATRIC CANCERS IN EUROPEAN NCCPS

Of the 15 cancer plans analysed, 10 contained some information on paediatric cancer, while 5 did not. Table 5 summarises how well the topic is developed in the plans, according to the categories described in the Methods.

Table 5. Degree of information and development of measures in the field of paediatric cancer

COUNTRY		COUNTRY	
Austria	4	Malta	4
Belgium	3	Netherlands	2
Czech Republic	1	Portugal	1
Estonia	1	Slovenia	3
France	5	Spain	2
Germany	1	Sweden	1
Ireland	3	UK-England	3
Italy	4		

Note: (1) No reference to rare or paediatric cancers is made. **(2)** Rare or paediatric cancers should be prioritised but no information or specific planning criteria are given. **(3)** Some information and planning criteria or recommendations are given. **(4)** Specific information and planning criteria or recommendations measures are given. **(5)** Comprehensive approach.

Level of information	Countries
(1) No reference to rare or paediatric cancers is made	Czech Republic, Estonia, Germany, Portugal, Sweden
(2) Rare or paediatric cancers should be prioritised but no information or specific planning criteria are given	Netherlands, Spain
(3) Some information and planning criteria or recommendations are given	Belgium, Ireland, Slovenia, UK-England
(4) Specific information and planning criteria or recommendations measures are given.	Austria, Italy, Malta
(5) Comprehensive approach	France

After identifying the cancer plans containing information on paediatric cancers, we analysed the content to identify 13 areas covered (table 6). In table 7, we have reorganized these under five broader topics to facilitate the analysis and presentation of results.

Table 6. Areas covered by NCCPs on paediatric cancer

COUNTRY	1. Epidemiology and age distribution	2. Management of side effects of cancer treatments	3. Centralisation and networking	4. Quality of care	5. Rehabilitation	6. Psycho-social care	7. Palliative care	8. Transition gap between children's and adult services	9. Clinical research and enrolment to clinical trials	10. Access to drugs and development of new therapies	11. Biobanks	12. Health promotion and primary prevention	13. Patient and family needs
Austria	X	X	X	—	X	X	X	—	—	—	—	X	X
Belgium	—	—	X	X	—	—	X	—	—	X	X	X	X
Czech Rep	—	—	—	—	—	—	—	—	—	—	—	—	—
Estonia	—	—	X	—	—	—	—	—	—	—	—	X	—
France	X	—	X	X	—	—	—	X	X	X	—	X	X
Germany	—	—	—	—	—	—	—	—	—	—	—	—	—
Ireland	X	—	X	—	—	—	—	X	—	—	—	X	—
Italy	X	X	X	X	—	—	—	X	X	—	X	X	X
Malta	X	X	X	—	—	—	—	X	—	—	—	X	X
Netherlands	—	—	—	—	—	—	—	—	—	—	—	X	X
Portugal	—	—	—	—	—	—	—	—	—	—	—	—	—
Slovenia	—	X	X	X	—	—	—	—	—	—	—	X	—
Spain	X	X	X	—	—	X	—	X	X	—	—	X	X
Sweden	—	X	—	—	—	—	—	—	—	—	—	X	—
UK-England	X	X	X	—	—	—	—	X	X	—	X	X	X

Note: "X" signifies explicit mention in cancer plan; "—"indicates that the area was not covered.

Table 7. Areas of paediatric cancers covered by NCCPs, according to five broad topics

Areas covered	Categories of analysis
1. Epidemiology and distribution by age group 2. Management of side effects of cancer treatments	**(a) Epidemiology and side effects of cancer treatments**
3. Centralisation and networking of centres 5. Quality of care 6. Rehabilitation 7. Psychosocial care 8. Palliative care	**(b) Healthcare organisation and quality**
3. Effective patterns of referral and continuity of care 4. Transition between children and adult services	**(c) Continuity of care and transition between children and adult services**
9. Clinical research and enrolment to clinical trials 10. Access to drugs and development of new therapies 11. Biobanks	**(d) Clinical research and access to cancer drugs**
12. Social needs of patients and families	**(e) Social needs of patients and families**
13. Health promotion and primary prevention	**(f) Health promotion and primary prevention**

Of the 15 plans analysed, 8 contained some information on paediatric cancer, although only 4 of these contained specific information and planning measures or took a comprehensive approach. The limited number of NCCPs that include specific measures for childhood cancers indicates that there is potential for progress to achieve a comprehensive approach.

(a) Epidemiology and side effects of cancer treatments

Childhood and adolescent cancers are rare, and they have different histological, clinical and epidemiological characteristics than adult cancers. The most common tumours are leukaemia, lymphomas and tumours of the central nervous system, which together account for around 60% of all childhood and adolescent cancers (AT). More than 70% of children and adolescents with cancer, in other words nearly 4 out of every 5 (FR) can be cured, and some paediatric cancers have a very high cure rate (AT). In their approach to this area, some cancer plans distinguish between two or three age groups and discuss the difficulties entailed in establishing cutoffs in the provision of services, especially for adolescents and young adults. For example, one plan distinguishes between childhood and adolescent cancers (ES), while another speaks generically about paediatric cancer but points out the importance of eliminating age as a barrier to service continuity in the framework of paediatric oncology and

proposes the consideration of an age group of 15–21 years if necessary (IT). Another plan sets the upper age limit for paediatric cancers at 24 years (MT). The approach taken by the latter country is coherent with other plans that discuss the differential service provision among children, teenagers and young adults (UK,AT).

Some NCCPs report epidemiological data related to absolute incidence and survival for paediatric cancers (IE,MT,UK,FR). For example, one plan contrasts the 5-year survival rate for cancers diagnosed in 1970 (40%) with cancers diagnosed today (82%) (UK), even though some types of children's cancers are still very hard to treat. The increased survival has come about thanks to intensive treatments, including surgery, radiotherapy and systemic treatment. Some of these therapies have proven particularly effective in treating certain forms of cancers in children and adolescents (SI). For the same reasons, though, many patients suffer long-term physical and psychological consequences of their treatment into adulthood. In other words, a considerable proportion of cancer patients experience long-term sequelae, but due to the greater possibilities of a cure, this represents an ever greater portion of overall cancer prevalence (SI). Indeed, most cancer plans that cover paediatric cancers highlight the importance of addressing the potential for possible sequelae, late effects, or complications later in life that occur because of the disease and the treatment (SE,ES,MT,SI,UK,IT,FR). Late effects may include organic sequelae of a cardiac, pulmonary, endocrinological or neurological nature (for example, pulmonary fibrosis) or psychological disorders, and these can lead to various levels of disability and even to second primary tumours and premature mortality (IT,ES,SI). For this reason, it is important to develop adequate follow up, transition to adult medicine, and the set up of health organisations to take care of these patiens.

With more specificity, some plans call for therapeutic planning in childhood neoplasia to also consider an assessment of quality of life and specific evaluations on possible sequelae from the disease and treatments (IT,ES). In this line, some plans also recommend that the design of treatment protocols envisage the possibility for modifications or reduced intensity in children with a good prognosis, whereas treatments should be intensified in children with tumours that are still considered incurable (FR,UK,ES,IT). As a principle of action, it is essential to try to avoid causing chronic disease in the future when treating childhood tumours in the present (ES).

Aside from the strict dimension of clinical practice, it is relevant to note that the consideration of late effects in paediatric cancer has led two NCCPs to include survivorship care plans (MT) or a "survivorship passport" (AT) for paediatric patients (including adolescents) upon finalising

treatment (see section b: *healthcare organisation and quality*). One plan also calls for greater research efforts on late effects in order to prepare a response for future needs (SE).

(b) Healthcare organisation and quality

Nine cancer plans referred to the need to centralise or establish reference centres for paediatric oncology (IE,IT,MT,UK,BE,EE,ES,SI,FR) in order to offer patients access to high-quality care. By designating these centres in the context of the health system, planners intend to catalyse a 'volume effect' in the oncopaediatric area (MT), an initiative that reserves an active role for healthcare authorities. The idea underpinning this concept is not only the centralisation of services for its own sake, but as an avenue to reconfigure providers in order to offer comprehensive specialist services for children (UK). In addition, four cancer plans relate centralisation processes to the establishment of centres for paediatric oncology, staffed with multidisciplinary teams with accreditation that can attest to their excellence (ES,IT,BE,UK,FR). One of these plans even stipulates the possibility of establishing criteria for both the designation and 'de-designation' of these centres (UK). Other specific issues mentioned include the concentration of diagnostic services (particularly anatomical pathology) in a few centres, which should be equipped with high-tech laboratories for performing molecular diagnostics (IT,SI,FR), and the need for paediatric oncology centres to have fully up-to-date clinical protocols (ES).

Due to the small size of some countries and/or political will in the area of cancer control, some plans designate specific centres that should handle the cases of paediatric cancer patients (IE,BE,EE,SI); these descriptions include interhospital collaboration as a key element. For example, in one case the NCCP lists eight centres designated for the treatment of paediatric tumours, calling on them to collaborate through a network and take advantage of professional specialisations (BE). Another plan indicates which centre should take on the most complex cases, while also establishing a framework of collaboration with other 'shared centres' (IE). Finally, one plan identifies the reference centres while also noting that these should be part of an institutional network (EE).

One plan puts a special emphasis on the need to have reference centres and specialised teams whose work is based on dividing paediatric oncology (including cancers in adolescents and young adults) into two levels: teams that concentrate on the clinical services with the most demand in their geographic context, and national reference teams with specific skills that respond to more complex or rare situations (including highly specialised techniques like proton therapy). These levels should be coordinated by ensuring access to MDTs that communicate

virtually in order to promote the integration of decision-making based on the best available evidence and expertise in the care process (FR). This could involve the validation of the proposed treatment plan at a regional level or, again, the direct referral of the patient to the centre of excellence.

In addition, in the area of strengthening quality in areas that could present deficits, NCCPs detail the need to develop (or reinforce) centres that handle oncological treatments specifically for young adults (UK) or to create a centre in the context of the tertiary activity centralising the "management of side effects of oncology treatment" (SI).

Another relevant dimension in cancer plans is the need to guarantee the quality of care. In that line, the most prominent elements relate to the clinical competencies that professionals should have as well as the need to share common protocols and have adequate structures – all of which should be subject to quality assurance audits (IT,FR). The plans insist on the importance of recognising paediatric oncology as a specialty and to offer staff training to improve professional skills in all centres that treat patients with paediatric cancer (IT,SI). Some plans also allude to the need to have expert MDTs in the area of paediatric oncology, across the disciplines comprising diagnostic, therapeutic and supportive care specialties and including a biologist in the pre-clinical field (IT,FR,BE,ES).

Other aspects that are relevant in some cancer plans are presented below, along the care phases that patients follow.

Diagnosis

- Guaranteeing and harmonising devices for double reading samples of malignant tumours at a paediatric age (FR).
- Improve access and reduce delays in obtaining results of genetic sequencing tests (FR).
- Facilitate the possibility of obtaining a second opinion without having to break off the relationship with the patient's reference team (FR).
- Frame healthcare services for adolescents and young adults within a context of respect for their social relationships. Communication and information towards paediatric patients and their families, particularly during the diagnostic and treatment planning phase, deserve a specific framework that involves professional training, an adequate physical environment, tailored information and psychological support with the aim of achieving consistent care processes and effective participation from patients (FR).

Treatment

- Guarantee clinical expertise for treating pain in reference centres (FR,IT).

Rehabilitation and psychosocial care

- Ensuring the provision of adequate, family-oriented rehabilitation for patients with solid tumours, leukaemia and lymphoma, but especially for those with tumours of the bones, brain and nervous system and those treated with stem cell transplantation. Patients' family members should be able to benefit from rehabilitation services at the same time as the child (AT).

- From the moment of diagnostic confirmation, children and adolescents should be guaranteed access to comprehensive psychosocial care. Not only oncologists, but also psychologists, psychotherapists, occupational therapists, physiotherapists and social workers should be involved in this specific area (AT,ES).

Survival

- The development of survivorship care plans or a "Survivorship Passport" (AT) for paediatric patients (including adolescents) upon completing treatment presents an opportunity to address different health objectives. This instrument can concentrate and organise all the information on the pathology and the treatments received, as well as information on the follow-up required and individual risks and implications of recurrence, second neoplasms and/or complications, facilitating access to the information for all medical contacts. In the long term, these plans can help to promote prevention and health promotion measures tailored to each patient. The European projects Encca (www.encca.eu) and PanCare Surf Up (www.pancaresurfup.eu) are cited as initiatives in this direction.

Palliative care

Two plans include considerations for children with advanced non-curable disease.

- One proposes a specific programme to manage the communication and coordination needs between hospital and home care for patients aged 0 to 18 who have a reserved prognosis (in most cases terminal). Services should be provided regardless of the specific disease and location of the patient's residence, for the purpose of helping the patient to return (and stay) home; grief support should also be included. This

programme implies structurally financing an inter-university team made up of three nurses and (as required): a paediatrician, psychologist and physiotherapist (BE).

- The other cancer plan calls for developing MDTs for managing care in children with palliative care needs. These teams should be well connected with paediatric oncology services, as oncology services for adults are not adequate for children's clinical situation or for the involvement of and communication with family members. This initiative should include external or mobile oncology services that allow paediatric patients to be at home for as much time as possible (AT).

(c) Continuity of care and transition between childhood and adult services

In their description of the situation of paediatric cancer, four cancer plans (ES,IT,BE,UK) acknowledge the existence of different levels of complexity and actors with the capacity to intervene, as well as the need for effective coordination and access to guarantee equitable service provision. Planners describe the need for specialist care to be integrated into the care provided by primary physicians and the patient's paediatrician, spanning all phases of the disease, from prevention, diagnosis and treatment to the management of complications and follow-up for early detection of eventual recurrences (IT). The primary care physician and paediatrician are also described as relevant when having to treat pain and confront the final phase of the patient's life (IT).

Two cancer plans describe coordination during the diagnostic phase in particular detail (UK,ES). The first stipulates that one specialised oncology nurse per geographical service area should coordinate the diagnostic pathways and other services meant to ensure the early diagnosis of the disease (UK). Although this professional would be responsible for all types of paediatric cancer, special attention is paid to tailoring the position to cases of brain tumours, as a disproportionate number of patients present for the first time at the emergency department (UK). The second plan promotes the creation of preferential diagnostic circuits for suspected childhood cancers; this entails the need for continuous professional training for paediatricians and family doctors on paediatric cancers (ES).

Involving all the actors of a given territory in order to guarantee continuity of care and improve effectiveness and coordination in different interventions is a common principal of action among all the plans.

Furthermore, the capillarity of the care network should help paediatric patients to receive an answer that responds to their needs and preferences and according to the level of complexity required (IT). Volunteer associations could also be integrated within this network.

However, the critical dimension related to continuity of care, with the most presence in the cancer plans studies, is related to the transition between paediatric and adult oncology services. The reason for this is that adolescent patients can end up in a no man's land between services for childhood and adult cancers (IT). Several factors can cause problems for paediatric patients transitioning towards adolescence or directly for the provision of oncological care for adolescents:

- Many hospitals envisage offering paediatric services up to age 16, but adult services are not formally offered until age 18 (UK).
- Children, adolescents and young adults have post-treatment requirements that overlap with some of those that adults have, but other needs may also be substantially different (UK).
- The non-structured pathways between specialised centres and other services cause many problems for patients (UK).
- The 15–29 years age group is the one that participates the least in clinical trials (IT).
- Two thirds of adolescent tumours are considered paediatric tumours, but the percentage of patients aged 15 to 19 who are treated in paediatric oncology services is low (IT).
- The child's age complicates hospital treatment and may be associated with lower adherence to treatment, requiring specific support (FR).

Planners call for addressing potential transition gaps between children's and adult services. This task would begin by identifying the transition points, which today are poorly managed, including considerations on treatments provided at home (Ff). The following recommendations are along these lines.

- An early transfer to the paediatric haemato-oncological centre should be guaranteed. These centres should be part of a network that shares treatment guidelines, consistent clinical protocols and active participation in clinical research (AT).

- Care for adolescents should be performed in centres of paediatric oncology that have expert MDTs and the infrastructure necessary to provide psychosocial care and schooling (ES,AT).
- Centres should be specifically created for treating adolescents (IE) and young adults (UK), or a specific care model should be developed for these age groups (AT).
- Age-related support services (MT), for instance specific psychosocial and/or keyworker services (UK), should be developed.

(d) Clinical research and access to cancer drugs

Planners call for a prioritisation of new therapies in the area of paediatrics (UK,FR,IT), with improvements in accessibility and speed of access to cancer drugs (BE). More specifically, one cancer plan points out that survival in paediatric cancer has been improving, but this progress is less evident in adolescents and young adults (UK,IT) and especially in patients aged 15 to 29 years, independently of what type of tumour they have (IT). Another plan discusses the need to increase participation in clinical trials in these two subgroups, which is low compared to the participation observed in children (UK).

One NCCP emphasises the continuing need to coordinate clinical, basic and epidemiological research in paediatric oncology among the different centres of paediatric oncohaematology (ES). Another proposes the establishment of specific centres dedicated to paediatric patients in order to develop premature trials, facilitating logistical elements for patients and their families in order to eliminate barriers to access (FR). Also mentioned is the need to make additional efforts to adapt clinical trials to the conceptual evolutions derived from targeted therapies (FR), as the understanding of molecular characteristics is the basis for carcinogenesis in paediatric cancer (IT). Another research focus should be the possibility of optimising some treatments in order to reduce the secondary effects while keeping the same efficacy (FR).

The molecular diagnosis of paediatric leukaemia and solid tumours allows the definition of individualised prognostic and treatment factors for the patient (ES). In that sense, one plan highlights the need to develop new approaches that go beyond the frontiers imposed by clinical trials. For example, analysing tissue to better understand the molecular characteristics of cancer could transform the way research on new therapies is generated (UK). Indeed, three cancer plans (IT,BE,UK) call for strengthening biobanks. One plan recognises that it is essential that basic researchers have access to the biological material that can allow the validation of prognostic factors and enable the development of new treatments (IT). Another point that is

highlighted is the importance of international collaboration among biobanks, particularly in the case of haematopoietic stem cells and cord blood banks (BE).

(e) Social needs of patients and their families

The cancer plans studied contain numerous proposals aimed at minimising the impact of cancer in the lives of children and their families and achieving full social reintegration. Planners recognise the importance of children maintaining social relations (FR), and particularly for adolescents, they describe specific problems derived from being seriously ill in the period of time when people are most striving for independence and autonomy. Adolescents are, in this situation, more dependent on their parents, and the disease constitutes a hindrance to their intellectual, athletic and social aspirations (ES). For both children and adolescents, healthcare should be organised in a way that integrates the fulfilment of personal, family and social needs (UK,IT,FR), for example by considering the emotional repercussions on children and their parents (NL) and including families in processes around the death of the child (ES). To that end, the third, social sector can take on a relevant role in covering these needs (IT), or post-operative rehabilitation can be considered a comprehensive process for physical and emotional recovery that includes not only the patients but also their family and community (AT).

In that line, two cancer plans call for promoting effective communication with children and their families (BE,FR), allowing professionals more time to explain the situation. Another plan comments on the importance of allowing the parents of children with cancer to receive the support they need to accompany their child and/or to reduce the distress and loneliness that they might experience, with special considerations for the possible loss of income the families may sustain in caring for their child (BE). Different professionals within and outside of healthcare services can play a key role, including teachers, physiotherapists, occupational therapists, social workers, volunteers or educators (AT,IT). From a social perspective, some cancer plans indicated the need to protect people who had cancer in their childhood from practices that limit their ability to find work or to purchase health or life insurance (IT,MT).

(f) Health promotion and primary prevention

The cancer plans address two dimensions in the area of primary prevention and health promotion: promoting healthy behaviours and avoiding specific risks for the development of cancer. With regard to the first dimension, three cancer plans (NL,MT,UK) associate healthy lifestyles in childhood with school health interventions. ‘Healthy school’ interventions (NL) are

seen as a window of opportunity for influencing the health-related behaviour of children, adolescents and their families, and they should include tailored content relating to common signs and symptoms of cancer (UK). Two main objectives underpin the interventions: on the one hand, to raise awareness on the signs and symptoms of cancer to favour early diagnosis and reduce time to first treatment (AT), and on the other, to contribute to the prevention of childhood obesity, a risk factor for cancer that has an alarming prevalence. Two cancer plans envisage school-level interventions as a way to provide young people with the confidence to make the best use of primary care services later in life, for example by teaching them how to have constructive conversations about their health and to involve their parents (UK,MT).

In parallel, the idea is raised of establishing agreements with food manufacturers to promote healthy diets, including through more complete labelling and restricting advertising for high-calorie products aimed at children and young people (NL). This initiative is also mentioned in other plans, although it forms part of another strategy that focuses on nutrition, obesity and promotion of regular physical activity (ES). At least one hour of physical activity is recommended per day (NL). It might also be relevant to develop a comprehensive model for health promotion and education of children and youth (SI), which two plans also frame in terms of specifically addressing social inequalities (NL,MT).

The other dimension to underline relates to specific risks. These are presented below in order of the frequency they appear in cancer plans.

- Tobacco consumption among children, young people and pregnant women (SE,EE,MT,FR). Avoid passive exposure to tobacco in children and pregnant women (B,ES,SE), including in open spaces and workplaces where children may be present (BE,MT). Ban smoking in cars when children are riding (IE).
- Ultraviolet radiation as a risk for melanoma (SE,ES,NL,EE). Avoid exposure to sun in babies (ES).
- Human papillomavirus (HPV), with a recommendation to vaccinate against this disease (SI,MT).
- Environmental and occupational exposures during the pregnancy (MT).
- Environmental contaminants/carcinogens in food and water (MT).
- Hepatitis B, with a recommendation to vaccinate against this disease (ES).
- Electromagnetic fields: their association with cancer has not been confirmed through experimental research, but a statistical association does exist (IT).

TASK 1.2, WP10, JARC

REVIEW OF RARE DISEASES PLANS, PAST AND PRESENT EU FUNDED INITIATIVES ON RARE DISEASES, AND POLICY OPTIONS AND PRIORITIES FOR PATIENTS' ORGANISATIONS RELEVANT FOR RARE CANCERS POLICY

1. INTRODUCTION

The patients affected by rare cancers (RCs) often fall between the world of cancers and the world of rare diseases.

Since RCs share the hallmarks of cancer, they belong to this group of diseases from a healthcare point of view. Therefore, in the public healthcare system of each EU Member State (MS), RCs (including paediatric cancers) are addressed in National Cancer Control Plans / Programmes (NCCP). Most EU MS have adopted a NCCP.

The National Rare Diseases Plans or Strategies of EU MS do not specifically include rare cancers, they address rare diseases as a whole, following a specific review of these plans. As of end July 2018, 25 EU MS have adopted a National Rare Disease Plans or Strategies (NRDP/NRDS).

As described in the introduction to the JARC, the **main issues** concerning the quality of care and feasibility of research are essentially the same for RCs and rare non-neoplastic diseases due to the rarity of these conditions.

Over the last two decades, since the adoption of the EU regulation on orphan medicinal products (EC) N°141/2000, the movement around rare diseases has been very successful in bringing a greater attention to these diseases – which had been long neglected - and fostering the development of a European and national policy framework for organising the offer for care for the patients affected by rare diseases as well as enhancing research efforts.

Paediatric cancers constitute a distinct field where the impact of the orphan regulation has been very limited [11,12]. Here, the policy environment has been influenced by a highly organised pan-European cooperation in the community since more than 50 years. This collaboration gave rise to the multi-stakeholder endorsed SIOPE Strategic Plan – A European Cancer Plan for Children and Adolescents, supported by the EU FP7 ENCCA project. The Plan sets strategic objectives and puts forward implemenation models to achieve them in the period 2015 - 2025 [13].

Likewise, “in order to more effectively address the RCs’ challenges, it is crucial to strengthen the connection between the cancer world and the rare diseases world. The oncology community may learn from the rare disease community to appreciate the distinct issues pertaining to rare conditions. On the other side, the oncology community can provide the expertise it has developed in dealing with such a challenging disease as cancer” (Prof Paolo Casali, Coordinator of the JARC).

In 2015, EURORDIS mapped out the similarities and differences between RCs and rare diseases (RDs) (see Annexe 5), with inputs from EURORDIS member rare cancer patients’ organisations - 60 from 21 European countries, including both patient organisations for paediatric cancers and RCs in adults - and from the Steering Committee of Rare Cancers Europe (multi-stakeholder initiative bringing together academia, industry and patient organisations, and dedicated to putting rare cancers on the European policy agenda).

This mapping serves as a starting point to highlight the specificities of patients affected by RCs, irrespective of their age, and identify converging needs between RC and RD patients. Providing a picture of RC patients’ needs and problems encountered can help inform public health authorities to design and develop a specific healthcare organisation / programme to address these patients’ challenges. The optimisation of care not only reduces patients’ sufferings and increases their chances of recovery, but also decreases healthcare spending.

2. COMMONALITIES AND DIFFERENCES BETWEEN RARE CANCERS AND RARE DISEASES

(a) Definition of rare cancers and rare diseases

It is acknowledged today that there are over 6000 RDs versus nearly 200 identified RCs. This number evolves over time as research progresses. About 80% of RDs are of genetic origin, the others being rare cancers, auto-immune diseases, congenital malformations, toxic and infectious diseases. Altogether, they affect about 30 millions of patients living in the EU.

There are differences in the definitions of RCs and RDs, the former being based on incidence and the latter being based on prevalence. The project RARECARE has provided an incidence rate for RC of **less than 6/100,000/year**. In the US, the estimated incidence rate for RC is less than 15/1000/year.

One should consider that a whole group of cancers, pediatric cancers, are rare. This leads pediatric oncologists to make further distinctions between hematological malignancies, brain tumors and solid cancers that are all rare but commonly diagnosed in children and

adolescents. In addition, some cancers occurring in children and adolescents are very rare with an incidence of less than 2 cases/million/year [14] such as pancreatoblastoma and pleuropulmonary blastoma, or adult malignancies diagnosed in young people such as colon adenocarcinoma in children.

As regards RDs, the EU Regulation (EC) No 141/2000 of the European Parliament and of the Council of 16 December 1999 on orphan medicinal products defines that a condition is rare when it affects **"not more than five in 10 thousand persons in the Community" (or less than 50/100,000).**

(b) The concept of rarity and the severity of the diseases

The patients (and their families) affected either by RCs or RDs all share the same burden: the rarity of the diseases and the many resultant complex and often devastating challenges.

Due to their rarity, both RCs and RDs are complex and often heterogeneous diseases, very difficult to diagnose and treat. The medical expertise on various RCs/RDs may exist but is scarce and scattered throughout Europe.

The patients as well as their families who care for them, often feel marginalised by the healthcare systems, and thus feel alone and isolated with their rare disease/ rare tumour.

These patients and their families share many of the same challenges:

- difficulty in accessing an accurate and timely diagnosis with often (very) long delays;
- difficulty in accessing highly specialised care and adequate treatments (difficulties in finding the right specialists / medical experts, long travels to access specialist centres…);
- lack of research in comparison to more common diseases;
- lack of registries and databases: many registries for rare diseases and rare cancers are scattered and/or not up-to-date. Sometimes the operation of registries is stopped due to lack of funding;
- few clinical trials because of the difficulties of organising clinical trials in small patient populations.

The majority of RDs and all RCs are life threatening. Due to the severity of both RCs and RDs, patients can suffer greatly reduced quality of life. The patients' families are also significantly impacted by the severity of the disease and the distress it causes.

These are the reasons why patients living with RCs and RDs deserve a much greater focus of attention in terms of support, information, access to specialised healthcare professionals and adequate follow-up.

(c) Diagnosis

In 2015, the 60 rare cancer patient organisations, members of EURORDIS, assessed that accessing a timely and correct diagnosis remained one of the major challenges for patients affected by RCs, as it was also the case for RD patients.

The specialised diagnostic centres are relatively few. There are major discrepancies amongst EU MS and even within EU MS to access genetic testing and genetic counselling where appropriate, as well as second opinions on pathology results for RCs and RDs.

The long delays in accessing a correct diagnosis contribute to a worsening of the patient's condition and increasing the psychological burden of the disease on both the patient and his/her family. In the case of RCs, the survival rate is often at stake given that the disease can progress rapidly.

Therefore, for both RC and RD patients, there is an urgent need to map out specialised centres, able to provide or confirm accurate diagnosis, at regional, national and European levels.

(d) Access to specialised care at national and European level

During the last two decades, the RD patient community, healthcare professionals and representatives of national public health authorities, as well as the European Commission, discussed several ways and options to address challenges raised by rare diseases, due to the rarity, complexity and heterogeneity of these conditions.

As a result, **the solution** supported by the RD patient community – which also includes rare cancer patient organisations - as well as by other stakeholders, is the mapping out and official designation at national level of hospital units, called **Centres of Expertise (CE)**, specialised in the treatment of a single RD/RC or group of RDs/RCs. The CEs bring together multidisciplinary competences and concentrate highly specialised expertise. They share the mission of providing patients with the highest standards of care. Indeed, for many RC and RD patients, there is still a long journey to access the appropriate expert care.

It is also important to emphasise that some rare diseases lead to (rare) cancers/tumours, e.g. neurofibromatosis, von Hippel–Lindau syndrome, tuberous sclerosis (to name only a very few), and these diseases also necessitate to be treated at Centres of Expertise.

The national designation of CEs for rare diseases and specialised oncology centres need to be further promoted.

Moreover, the collaboration of these centres need to be fostered at the European level. Indeed, both RCs and RDs have a strong European added value since expertise on these rare conditions is not necessarily available in each EU MS but only in some EU MS.

The RD and RC patient community, as well as other stakeholders, have promoted the establishment of **European Reference Networks** (ERNs) of the specialised Centres of Expertise as the most effective way to exchange knowledge and speed up access to diagnosis and appropriate care. The section 3 further elaborates on the ERNs.

(e) Research, clinical trials

For both RCs and RDs, the research effort needs to be significantly boosted and amplified.

On one hand, more research projects for RCs and RDs have been undertaken over the last years, notably with European funding from FP6, FP7 and now Horizon 2020.

However, on the other hand, many RCs and RDs still do not attract sufficient interest from academic researchers, pharmaceutical companies and potential funders because of their small patient populations and the perceived small return on the major investment in time and money which it takes to bring a therapy to market.

The clinical trials in small and vulnerable populations face the same major difficulties that are often challenging to overcome for the sponsors and researchers for legal, regulatory and financial reasons:

- few patients;
- few or no patients' registries for each RC and RD;
- difficulties in setting up multicentre trials in different countries;
- conventional statistical methods to evaluate new therapeutic approaches for any given RC / RD are limited due to the small number of patients concerned, and therefore are not appropriate to demonstrate the efficacy and safety of therapies;

In order to address the challenges raised by both RCs and RDs in the field of clinical trials, several initiatives have been launched at the European and international levels, as well as recommendations issued:

- In 2007, the **European Medication Agency (EMA)** issued the "Guideline on Clinical Trials in Small Populations"
  www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2009/09/WC500003615.pdf

- **Rare Cancers Europe** issued the "Methodological recommendations for clinical studies in rare cancers: a European consensus position paper" (www.rarecancerseurope.org)

- Three EU projects were funded under FP7 (2013 – 2017) to explore new methods for the design and analysis of clinical studies in small population groups. All three projects brought together experts in clinical trial methodology and statistics in small populations, and patient organisations from across Europe:

  - **ASTERIX project** led by Professor Kit Roes at UMC Utrecht, Netherlands
    www.asterix-fp7.eu

  - **IDEAL project** led by Professor Ralf-Dieter Hilgers at the RWTH Aachen University, Germany
    www.ideal.rwth-aachen.de

  - **InSPiRE project** led by Professor Nigel Stallard at the University of Warwick, United Kingdom
    www2.warwick.ac.uk/fac/med/research/hscience/stats/currentprojects/inspire

In paediatric oncology, the following projects supported by the EU framework programme for research have been contributing to clinical trial development:

- **ENCCA project** (FP7, 2011 – 2015) led by Prof. Ruth Ladenstein at CCRI, St. Anna Children's Hospital is a network of excellence that gathered all stakeholders (including parent and patient advocates) in the process of further structuring paediatric cancer research in Europe (www.siope.eu/encca).

- **ITCC-P4 project** (IMI2, 2017 – 2022) led by Prof. Stefan Pfister at the German Cancer Research Centre and Dr. Louis Stancato at Eli Lilly aims to establish 400 new patient-derived preclinical models of high-risk pediatric solid tumors which will be fully characterised (molecularly, immunologically, pharmacologically and clinically well-annotated) and to build a sustainable comprehensive platform to use these models for medicine testing (www.itccp4.eu).

- **ChiLTERN project** (H2020, 2016 – 2020) led by Prof. Keith Wheatley at the University of Birmingham is a comprehensive research programme connected to the single largest clinical trial ever undertaken amongst the paediatric population with the aim to cure more children with liver cancer, expose fewer children to chemotherapy with potential long-term toxicity and ensure their surgery is both effective and safe. (www.birmingham.ac.uk/generic/chiltern/index.aspx)

- **EORTC** – the European Organisation for Research and Treatment of Cancer – has launched SPECTArare, specially dedicated to clinical trials in rare cancers (www.eortc.org).

- **IRDiRC** - International Rare Diseases Research Consortium. This transatlantic research initiative, launched in 2010 by the EC and the NIH, is aimed to enable all people living with a rare disease (including rare cancers) to receive an accurate diagnosis, care, and available therapy within one year of coming to medical attention (www.irdirc.org).

- **IRCI** - International Rare Cancers Initiative - is a joint research initiative between Cancer Research UK (CRUK), the US National Institute of Health Research Clinical Research Network: Cancer (NIHR CRN: Cancer), the US National Cancer Institute (NCI), EORTC, the Institut National Du Cancer (INCa), Clinical Oncology Society of Australia (COSA), Japan Clinical Oncology Group (JCOG) and Canadian Cancer Trials Group. “The aim of this initiative is to facilitate the development of international clinical trials for patients with rare cancers in order to boost the progress of new treatments for these patients” (www.irci.info).

- **ITCC** - Innovative Therapies for Children with Cancer (ITCC) - is a European academic consortium and network of expertise that runs a comprehensive clinical and biological early evaluation program of anticancer medicines for the paediatric population. It is a member of the SIOPE Clinical Research Council. As of 2018, the ITCC network counts centres in 14 countries: 12 EU Member States, Switzerland, and Israel (www.itcc-consortium.org).

From the patient organisations' point of view, it is clear that patient groups for RCs and RDs must be involved in all aspects of research. This includes, for example, early input into the design of clinical trials, being involved in the work of ethics committees, and playing an active and meaningful role in regulatory approvals and health technology assessment (HTA) mechanisms. The patients, notably due to the rarity of their disease, have become experts of their condition. They can help researchers by reporting clinical outcomes (Patient Reported Outcomes) and assess the impact of treatments on their quality of life.

(f) Access to specialised treatments and orphan drugs

Accessing adequate treatments, including orphan drugs, is a prominent issue for both RC and RD patients. Very often, RC and RD patients need innovative treatments, which are costly and not available in all of the 28 EU MS, or lack from the development pathway as in the case of paediatric cancers.

In the specific case of orphan drugs, on one hand, the EU Regulation (EC) No 141/2000 on orphan medicinal products was a cornerstone to provide economic incentives to develop drugs for rare diseases (including rare cancers but excluding paediatric cancers – see below). It is true that this Regulation has considerably boosted the development of drugs intended for small populations. To date, about one third of marketed orphan drugs are intended to treat rare cancers in adults.

On the other hand, the high price of most of these orphan drugs are a real barrier and prevent some EU MS to purchase them, thus creating inequalities in accessing potential-life-saving treatments for EU citizens.

The common assessment of the clinical added value of a product is a key factor for setting its price. Agreeing on a common assessment of the clinical added value of an orphan product is aimed at accelerating its marketing authorisation's approval by the EC and its access to patients in EU countries.

In order to reduce access inequalities, the EUCERD (European Union Committee of Experts on Rare Diseases) adopted in September 2012, a Recommendation on the "Clinical Added Value of Orphan Medicinal Products Information Flow" (CAVOMP).

In parallel, the European Commission has launched an initiative on "Mechanism of Coordinated Access to Orphan Medicinal Products" (MoCA-OMP) to seek collaborative ways to

identify and assess the added value of orphan medicinal products between a company and competent authorities. Some EU MS have joined this initiative on a voluntary basis.

In a nutshell, **CAVOMP and MoCA-OMP** are intended to bring together relevant stakeholders in order to establish an early dialogue and gather enough data to find a consensus on the potential clinical added value of a specific product intended for a small population of patients. The stakeholders involved are the sponsors, clinicians, patients, healthcare professionals and competent authorities, namely the EMA and HTA agencies.

In January 2018, EURORDIS published a position paper entitled "**Breaking the Access Deadlock to Leave No One Behind".** This Paper is the result of several years of work with EURORDIS members and stakeholders involved in the development and approval of new therapies/orphan drugs. It offers a synthesis of their analysis, reflections and perspectives on the issue of access to rare disease therapies (which include rare cancer therapies as well).

The position paper sets out a new four-pillar approach to tackling the challenges that prevent patients' access to care and medicines, as well as the ambition to have 3 to 5 times more new rare disease therapies approved per year by 2025, 3 to 5 times cheaper than in 2018. EURORDIS members call for an early dialogue amongst all stakeholders as also recommended in the CAVOMP and initiated in MoCA-OMP.

In addition, the **EUNetHTA** Joint Actions, bringing together 81 partners (HTA national agencies as well as other stakeholders, including patient organisations) from 26 EU MS, and Norway, Sweden and Switzerland, have worked towards the establishment of a favourable environment for "creating, facilitating and promoting sustainable Health Technology Assessment (HTA) cooperation in Europe", which is particularly key in the field of both RCs and RDs.

The RC and RD patient communities as well as healthcare professionals hope that the future EU regulation on HTA, which notably takes stock of twelve years' work of EUNetHTA projects and Joint Actions, will include legal provisions for EU joint assessment reports on the clinical added value of orphan drugs/advanced therapies, with a view to ensure that adequate treatments are available for all citizens throughout the EU in a timely fashion.

Pediatric cancers are a distinct area where the impact of the orphan regulation has been very limited due to the prioritisation of the adult indication to trigger the incentive mechanism [11,12]. The EU paediatric regulation (EC) N° 1901/2006 has been a potentially more relevant instrument to foster development of innovative medicines for children with cancer, as it includes an obligation to undertake paediatric investigation plans. However, only very few new

medicines have been authorised for cancer affecting children since the paediatric regulation came into force, and its implementation in this disease area has been characterised by major delays and waivers [15]. SIOPE together with parents and patients have been advocating jointly formulated changes [16], and in 2016, the European Parliament voted on a Resolution on the paediatric regulation calling for revisiting the legislation and the way it is put into practice [17]. An assessment of the overall legislative landscape for diseases such as paediatric cancers is currently ongoing at the EU level, together with a stakeholder reflection process on improving the implementation of the paediatric regulation [12,18].

Due to the challenges in innovative medicine development for children in the pre-marketing authorisation phase, the paediatric cancer sector has so far been less present in the pricing debate. This topic may become more relevant with the advent of newly authorised immunotherapy medicines for children with cancer.

The paediatric cancer community has also been working to foster equal access to standard care (in both diagnosis and treatment), expertise and clinical research in light of a 10 to 20% difference in 5-year survival [19] across Europe. The European Reference Network for Paediatric Oncology (ERN PaedCan) has an important role in reducing inequalities by providing high-quality, accessible and cost-effective cross-border healthcare to children and adolescents with cancer, regardless to where they live.

(g) Beyond medical care, access to specialised services

Patients living with a rare disease or a rare cancer face the difficulty of finding social services and psychological support adapted to their needs. This is due to the rarity of each disease, the extensive variations of expressions of the diseases, the paucity of medical experts as well as professionals in the social area to help patients and families.

Therefore, there is a great demand for social support as well as psychological support as patients and their families are often very isolated and deserve to be helped. Care should not be restricted to medical and paramedical aspects, it should also take into account social support, inclusion in the society (at school, at work) and psychological and educational development.

To resolve the lack of sufficient information and aid from public services, in many cases, the patients and/or the parents of patients have established their own patients' organisations. They provide other patients and families with relevant information on:

- the description of the disease;
- where to find medical experts (whenever possible);
- where to find informed social workers;
- rights of the patient;
- access to social aid.

Patients' organisations also help patients and families find solutions for integration at school, in workplaces, and in society at large. Some patient organisations have set up their own helpline to provide assistance and psychological support to patients and families.

There exists in some EU countries resource centres which provide holistic care like in Sweden, with the centre Agrenska, and in Norway, with the centre Frambu. There are also public-private partnerships for providing recreational therapies for young patients and respite care centres.

Nevertheless, these initiatives are too few in Europe compared with the number of patients suffering from RCs and RDs in the EU. This issue of social support is still quite neglected and the RC and RD patient communities call for their specific social needs to be recognised by public relevant authorities, through European and national programmes / plans.

(h) Healthcare and social costs

For both RC and RD patients, and their families, overall healthcare and social costs can be much higher than for those with a "common" condition, because treatments are often very expensive and not always reimbursed (e.g., off label use, therapy rejected by HTA because it has been deemed not to be cost effective, etc).

Referrals for a second opinion, if in fact a second opinion is available, are not always covered by health insurance. The legislation in each EU MS can differ. In addition, travel costs to access appropriate care are often not covered by insurance. This adds to the economic burden of the disease on the patient and family.

Furthermore, caregivers - often a parent or a husband or wife - of people with RC or RD often have to themselves stop working and be subject to a major reduction in their family's economic stability because they have to stay home and take care of their loved ones.

Therefore, both RC and RD patients and their families can be driven to the edge of destitution as a result of the diagnosis of an RC or RD. The social and economic burden on the patients and families, in addition to the suffering caused by the disease, should be emphasised and quantified in order to encourage social and healthcare authorities to take appropriate measures to improve the situation.

(i) Patient empowerment and expert patient

Given the rarity of each disease, the patients who are affected or the parents of patients, do spend a lot of time searching for validated information on their own disease (or their child's disease), potential care and treatments. This exercise is quite difficult as validated information is not only scarce but scattered.

The internet has dramatically changed the landscape in accessing information as well as enabling online trainings. Patients' organisations (when they exist) and healthcare professionals have a major role to play in guiding the patients and parents through finding validated information and useful forums for exchanging experiences.

Over the last decade, training programmes intended for patients and parents of patients have increased. Indeed, the patients/parents of patients who themselves have acquired a lot of knowledge on their disease and set up their own patient organisations, have established trainings for other patients and their families. Professional trainings are offered as well (e.g. the programmes of the European Patients' Academy – EUPATI, the Masterclasses of the European Society for Medical Oncology – ESMO, and the European School of Oncology – ESO). The training programmes can focus on biological mechanisms of the diseases, genetics, the development of a medicinal product from pre-clinical research to its marketing authorisation, access to therapies, ethics, social care…

The patients and their families affected by either RC or RD have often been enrolled in training programmes, have searched for information, shared their experience to break the isolation and thus have become what we call more commonly now **"expert patient".**

Today, the expert patient and their families want to be part in the decision making-process regarding the care they receive. In the case of children, the parents have this role.

The patients' organisations, who bring together the patients and parents of patients of a specific RC/RD or group of RCs/RDs, need to be recognised **as an equal stakeholder and partner** in research projects, clinical trials, as they can bring invaluable information on the

needs of the patients and what their main expectations are. In areas where data are scarce, this is a win-win collaboration with researchers and healthcare professionals.

Since the RC/RD patients' organisations know so well the problems faced by the patients on a daily basis, they must be included in scientific, regulatory, HTA, public health decision-making committees / steering groups to discuss concrete measures for patients.

At the European level, the scientific committees of the EMA have two to three seats for patients' representatives, renewed after a three-year mandate:

- Committee for Orphan Medicinal Products (COMP), established by the EU Regulation on orphan medicinal products (EC) No 141/2000
- Committee for Paediatric Drugs (PDCO), established by the EU Regulation on paediatrics (EC) No 1902/2006
- Committee for Advanced Therapies (CAT), established by the EU Regulation on advanced therapy medicinal products (EC) No 1394/2007
- Pharmacovigilance Risk Assessment Committee (PRAC), established in line with the EU pharmacovigilance legislation which came into effect in 2012

The EMA Management Board also includes one seat for a patient representative.

Furthermore, "expert patients" (either patients, parents of patients or their representatives) are invited to the EMA scientific advice and protocol assistance's meetings to provide their expertise and perspective on the development of a product intended for their disease.

At national level, expert patients can be member of institutional committees. In the field of Rare Diseases, in some EU MS (e.g. France, Germany), expert patients are members of the Steering Committee of the National Plan for Rare Diseases.

3. POTENTIAL SYNERGIES BETWEEN RD POLICIES AND RC POLICIES

As described in the section 2, both RC and RD patients share many similarities and face the same hurdles.

The rare cancers field should benefit from **efficient connections** with both general oncology and rare disease sectors. Thus, innovation in oncology should continue to feed the field of rare cancers. Since RCs are addressed in NCCPs, smart links should also be made with national rare disease plans / strategies, integrating EU regulations, policies and recommendations intended for rare diseases, while taking into account the specificities of paediatric cancers and rare cancers in adults.

On 11 November 2008, the European Commission adopted the Communication **"Rare Diseases: Europe's Challenges"** along with a proposal for an EU Council Recommendation, addressed to the European Parliament, the Council [of the EU], the European Economic and Social Committee and the Committee of the Regions. On 8 June 2009, the Council of the European Union adopted the **Council Recommendation on an action in the field of rare diseases** (hereafter Council Recommendation).

These two European policy documents constitute two key milestones in establishing a comprehensive and integrated strategy to support EU Member States on issues including diagnosis, treatment and care for rare disease patients throughout Europe.

Furthermore, the Council Recommendation has encouraged EU Member States to adopt a national plan or strategy for rare diseases by 2013. The EU co-funded project EUROPLAN has helped support the development of national RD plans and strategies. In 2009, only five EU MS had a national plan for rare diseases. As of end July 2018, 25 EU MS has adopted a national rare disease plan or strategy (NRDP/NRDS). This is a significant achievement and the recognition of RDs as a public health priority (long advocated for by the RD patient community).

The NRDP/NRDS are built around the seven pillars of the Council Recommendation:

- Governance;
- Adequate definition, codification and inventorying of rare diseases;
- Research (including clinical trials, development of innovative therapies, orphan drugs);
- Centres of Expertise and European Reference Networks;
- Gathering the expertise on rare diseases at European level;
- Empowerment of patient organisations;

- Sustainability.

The main synergies between rare cancer and rare disease plans would be in the following areas:

- the medical offer for people living with a rare condition (Centres of Expertise, European Reference Networks);
- research on rare diseases and development of, access to orphan drugs/innovative therapies (while noting that paediatric cancers operate in a distinct research and access scenario which is specific to the field);
- supportive care beyond medical care;
- the place of patients' organisations in decision-making processes.

(a) Centres of Expertise

As emphasised in the section 2(d), Centres of Expertise (CEs) concentrating in one location a high level of knowledge and experience as well as providing a multidisciplinary approach to care are needed to diagnose and treat rare and complex diseases.

The Council Recommendation recommends EU MS to "(11) identify appropriate centres of expertise throughout their national territory by the end of 2013, and consider supporting their creation".

The European Union Committee of Experts on Rare Diseases (EUCERD), bringing together the 28 EU MS' representatives, EEA representatives as well as experts from academia, industry and patient organisations, adopted the "Recommendations on quality criteria for centres of expertise for rare diseases in member states" on 24 October 2011. The two key principles are **patient centeredness and multidisciplinarity**. These recommendations are intended for rare diseases but can be adjusted to rare cancers.

The CEs' mission is to provide a safe environment for patients and their families, where they can feel welcome and understood by specialists of their diseases. The CEs contribute to establishing a timely and appropriate diagnosis and deciding on the best treatment options for the patient. To that end, the CEs have necessary partnerships with specialised laboratories, as well as with other medical experts, at national, European and international level. Since CEs bring together the best experts on specific rare pathologies, these experts can issue and / or update clinical practice guidelines, which are often lacking for many RDs and RCs. They also participate in clinical trials. The CEs' responsibilities include as well training of healthcare professionals and paramedical professionals. The trainings on the management of RDs and RCs

can be extended and adapted to non-healthcare professionals (school teachers, social workers…) in partnership, for instance, with patients' organisations.

In order to help CEs function in an efficient manner and achieve their mission, a specific budget needs to be allocated by the MS to each centre according to its size and the number of patients treated annually.

With regard to patients affected by RCs, both children and adults, they are usually treated in **(paediatric) oncology centres**. Therefore, the existing infrastructure is already in place to focus on people with cancer. However, the expertise in dealing with RCs needs to be comprehensively developed in existing cancer centres and specialised multidisciplinary teams need to be put in place.

Based on rare disease policies, in order to effectively organise the offer for care for RC patients, all EU MS could include specific provisions in their NCCP to map out the specific expertise on RC, including paediatric cancers, in their country and officially designate hospital units / Centres of Expertise, specialised either in treating children, adolescents or adults with a rare cancer.

The responsibility of the designation process lies with the Member State, as mentioned in the EUCERD recommendations. This process is adapted according to the MS's healthcare system and specificities such as size and population. The designation of a centre is always for a defined duration and subject to quality-based review against defined indicators.

With a view to tackle the issue of delayed diagnosis, and even misdiagnosis, the EU MS should identify and designate as well specialised pathology centres and ensure that a good collaboration is established between these pathology centres and designated treating centres.

As an example, France has put in place specific healthcare pathways for children and adults affected by rare cancers. Specialised care centres for children and for adults as well as specialised pathology centres have been designated against high-level quality criteria. This policy is embedded in the French NCCP. The organisation of care for adult patients with a RC has been inspired by the French national rare disease plan (the latter has led to the designation of 363 CEs for RDs throughout the territory over the last ten years, organised into 23 national care networks).

The transition from childhood to adult care is a critical issue. Therefore, national plans need to include measures for ensuring a smooth transition in order to provide young patients with an adequate and coordinated follow up.

Another major issue is to bring the expertise to the local level and facilitate the treatment of the patients where they live in order to avoid them having to travel with the families to the CEs, usually located in big cities, and thus increase health-related expenses as well as unnecessary fatigue. To that end, it is advisable that EU MS foster a greater collaboration between CEs and local hospital units and General Practitioners (GPs) to follow up the patients in their proximity. The use of information and communication technologies such as telemedicine can facilitate this organisation.

In the case of small-sized EU MS, referral agreements with their neighbouring countries or other EU countries are needed if they do not exist, as sometimes, the diagnostic tools and healthcare professionals for some specific RCs are not available in their country.

The national authorities (for instance, the Ministry of Health) need to communicate widely about designated CEs. Indeed, it is very important that these centres are clearly identified in the healthcare system and known to non-specialist doctors, notably GPs, and to patient organisations in order to direct the patients to the right specialised centre.

(b) Cross-border healthcare and European Reference Networks

Networking of CEs is a key element to optimise patient diagnosis and care. CEs at MS level are the nodes of newly formed European Reference Networks (ERNs) for RDs and RCs which facilitate virtual medical consultations on difficult cases for diagnosis and treatments. In the context of ERNs, expertise travels rather than the patient.

The rarity and often complexity of diseases require the pooling of scarce and scattered expertise. The healthcare professionals need to discuss the case of a patient with their counterparts, share images and/or biological samples within and/or outside their country.

Over the past ten years, all stakeholders from the rare disease community, including EU and national authorities, have discussed the development of ERNs linking together the CEs by groups of rare diseases. The main idea behind it is to improve **equal access to** diagnosis and care to the patients, wherever they live in the EU.

The Council Recommendation encourages EU MS to "(12) foster the participation of centres of expertise in European reference networks respecting the national competences and rules with regard to their authorisation or recognition".

The legal framework of ERNs is provided in the article 12 of the EU Directive 2011/24/EU on the "application of patients' rights in cross-border healthcare", 9 March 2011. As stipulated in the article 12(4) & (5), the European Commission, on 10 March 2014, issued the:

- Delegated Act on "setting out criteria and conditions that European Reference Networks and healthcare providers wishing to join an ERN must fulfil";
- Implemented Acts setting out criteria for establishing and evaluating European Reference Networks.

On 31 January 2013, the EUCERD adopted the "Recommendations on European Reference Networks for Rare Diseases" regarding their mission, vision, governance, composition, funding and evaluation as well as their designation.

The European Commission Expert Group on Rare Diseases (replacing the EUCERD) adopted an addendum to these Recommendations, on the specific grouping of rare diseases and also, on patient involvement in ERNs (10 June 2015).

On 1st March 2017, the official launch of 24 ERNs for various groups of rare diseases and rare cancers was one of the biggest achievements of the European Commission and the rare disease community over the last decade. Dr Vytenis Andriukaitis, European Commissioner for Health and Food Safety, said that the "value of EU collaboration is particularly clear in the case of rare and complex diseases" (Ljubljana, ERNs launching meeting, March, 2017).

In the field of RCs, three ERNs have been established:

- EURACAN for rare cancers, solid tumours in adults*
- PaedCan for paediatric cancers (which is the continuity of the pilot project ExPO-r-Net)
- EuroBloodNet for rare haematological disorders, including rare haematological malignancies in adults.

*EURACAN includes the clinical families or domains identified by the project RARECARE: 1. Sarcoma, 2. Female genital rare cancers, 3. Male genital and urogenital rare cancers, 4. Rare neuroendocrine tumours, 5. Digestive rare cancers, 6. Tumours of the endocrine organs, 7. rare Head & Neck cancers, 8. Rare thoracic cancers, 9. Rare skin cancers and non-cutaneous melanoma, 10. Brain tumours.

The ERN GENTURIS – Genetic Tumour Risk Syndromes – includes rare diseases which may give rise to cancers, e.g. neurofibromatosis, Lynch syndrome, as well as some inherited rare cancers (e.g. cases of inherited breast, ovarian cancers…).

The referrals to the centres of these ERNs need to be adequately organised at national level, and cross-border care facilitated when a patient has to travel to a centre in another EU MS.

(c) Research, clinical trials and access

As underlined in the section 2(e), the research effort on rare tumours, both in children and adults, needs to be amplified. Given the difficulty to conduct research on rare tumours, European and international collaborations must be fostered in order to collect more necessary data and optimise research costs. Each EU MS should be aware of current existing European and international research programmes for rare cancers and rare diseases provided, for instance, by the European Commission, EORTC, IRDiRC, IRCI, and SIOPE platforms such as QUARTET and PARTNER, and encourage, facilitate the involvement of their researchers in these programmes.

The patients affected by RCs, notably children and young adults, are a vulnerable population due to the rarity and severity of their disease. Their inclusion in clinical trials may be sometimes a way to save their lives and should be facilitated by EU MS. In this respect, national policies for rare cancers should prioritise the inclusion of these patients in clinical trials. The **MoCA-OMP** initiative could be further extended to rare adult cancers, with a view to facilitate an early dialogue with all concerned stakeholders, namely sponsors, healthcare professionals, regulators and patients' representatives. In paediatric cancers, the ACCELERATE platform gathers all stakeholders including academia, industry, parents, and regulators to develop solutions to the access issues. Specific proposals include running the Paediatric Strategy Forums jointly coordinated by ACCELERATE and the European Medicines Agency (EMA) to share information and advance learning in a pre-competitive setting, and breaking the 18-years dogma for participation in clinical trials [20].

Moreover, the establishment of dedicated ERNs will further help develop clinical research on RCs through the participation of the ERNs' members (centres) in clinical trials. The EU MS should support research initiatives carried out by ERNs.

As regards access to therapies intended for paediatric cancers and rare cancers in adults, it has been discussed in many committees and fora that the assessment of the clinical benefit of an innovative therapy needs to be performed jointly by EU MS given the relatively little number

of patients, for which conventional analysis designed for frequent diseases do not apply. The EUNetHTA's members have notably worked a lot on the issue of access to therapies for people affected by rare conditions and on joint assessment reports by EU MS. The outcomes of their work have fed in the EC's proposal for an EU regulation on HTA. This EU Regulation, once adopted, might bring the needed solutions for improving timely and fair access to innovative therapies / orphan drugs for all patients throughout the EU.

(d) Supportive care beyond medical care

Both RD and RC patients face major issues beyond access to medical care. The complexity and severity of their conditions also require adapted psycho-social support.

In the field of rare cancers, many patients suffer important late side effects following their treatments. The long-term toxicity of treatments need to be addressed and adequately managed. Children, adolescents and young adults are particularly exposed to late side effects which have a serious impact on their quality of life.

In light of the above, the EU MS need to include specific measures in their plan for providing **adequate support care** to children, adolescents and adults affected by rare cancers, according to their specific needs.

To date many rare cancer patient organisations, for both children and adults, provide their members with information on:

- recreational therapeutic programmes for children;
- physical therapy programmes;
- respite care centres;
- adapted social services;
- integration at school or at work.

However, this information should not only be provided by patients' organisations but also by relevant public services and hospitals for the long-term follow up of the patients affected by rare cancers. For instance, the French NCCP includes provisions for the development of individualised social support during and after cancer.

In addition, an emphasis should be placed as well on **psycho-oncology**. Rare cancers being very severe and life-threatening diseases, the patients suffer from major distress which contributes to worsen their health. Psycho-oncology has become more available, even if not yet

adequately resourced. This discipline should be part of the multidisciplinary team as patient organisations have acknowledged psychological support as greatly important in helping people with rare malignancies.

Since people who suffer from rare conditions need to access multidisciplinary care, consult several specialists for their disease and find the social support adapted to their specific needs, it is very difficult for the patient or the family of the patient to cope with the management of the disease alone. The model of a **case manager** has been praised by the patients, their families and other stakeholders to coordinate global care, from healthcare to adapted services.

In the UK, in the field of cancer, and rare cancers, there are specialised nurses who provide this type of service to the patients.

Therefore, the case manager model for helping RC patients on the daily basis would need to be further explored and introduced in NCCPs as a way to help coordinate care based on an holistic approach.

(e) the place of patients' organisations in decision-making processes

As described in the section 2(i), the patients and their families affected by a rare cancer or a rare disease have become expert of their condition. Indeed, due to the rarity of each condition, they are more inclined to search for information and follow various training courses to better understand the disease and its consequences.

To date, the RC and RD patient organisations are better recognised as major players in the patients' journey as well as in research projects. The image of patient organisations has changed a lot compared to 15 years ago. They voice patients' needs in many fora, high-level working groups and regional, national, European and International decision-making committees. They are partnering with healthcare professionals as well as researchers.

In the field of rare diseases, some EU MS have appointed RD patient organisations' representatives as members of the drafting committee for the elaboration of a RD national plan and, once the plan adopted, as members of the steering committee responsible for monitoring the implementation of the national rare diseases plan or strategy.

This example could be followed in the field of rare cancers as the contribution from patients / patients' representatives could be very valuable to come up with adapted measures for the treatment and management of RC patients (children, adolescents and adults).

TASK 1.1 AND TASK 2.2. (WP10): CONCLUSIONS AND POINTS FOR DISCUSSION

Based on the content analysis and comparative analysis carried out on priorities, recommendations and best practices related to rare and paediatric cancers in NCCPs, as well as based on the description of rare disease policies which could be relevant for rare cancer policies and priorities highlighted by the patients, their carers and representatives, we propose a series of **points for discussion**:

Common priorities and points for discussion in the areas of rare and paediatric cancers

1. Centralising care for patients with rare cancers in reference centres emerges as a necessary condition for effecting change in the organisation of services at different levels, especially: personalising care, having fully up-to-date clinical protocols, improving professionals' clinical competencies, assessing care quality in health centres, increasing patients' participation in clinical trials, and improving the conditions for research and development on new therapies.

2. Care for rare cancers should be based on expert MDTs, which should in turn be articulated with other levels of care. The patient's reference centre needs to be fully coordinated with other expert centres at national and/or international level, avoiding silo models. Centralisation should not impede the fluidity of knowledge exchange between professionals and specialised centres.

3. The possibility of treating a rare cancer (e.g. sarcoma) in one centre should not prevent collaboration with other centres in the case of a pathological subtype (e.g. bone sarcoma) or particular clinical condition. In these cases, administrators should facilitate the transfer of knowledge so that the anatomopathological diagnosis and/or treatment plan is validated with the highest available level of expertise, or that the case is directly transferred to the most expert centre.

4. Continuity of care is a critical dimension. The health system should manage the possible changes in centres, services and reference professionals derived from patients' changing needs (clearly in the transition from childhood to adult care) and difficulties in access due to geographic distance. Team leaders or other professionals with a specifically designated role should manage transition points, for example referrals to expert centres or a patient's decision to change centre.

5. Centralising patients in expert centres, combined with quick referrals for services therein and a financing system that does not disincentivise the practice, is a key way to

promote equity, in that patients will not lose the opportunity to access the maximum range of treatment options, including innovative therapies.

6. Avoiding errors in anatomopathological diagnosis is crucial. In a context of centralised care, special consideration should be made of guaranteeing high-quality anatomopathological diagnosis and being equipped with high-tech laboratories for performing molecular diagnosis. Systems for double reading should contribute to this measure, making it relevant to adapt the organisation of services and centres in line with the objective of increasing clinical safety and guaranteeing maximum equity in the diagnosis.

7. Clinical research and the development of new treatments are considered 'underserved' in this area. Accelerating development of new clinical trials is a priority, but so is incorporating other methodological and research perspectives, for example, tissue analysis for understanding the molecular characteristics of cancer in the development of new therapies; relaxing some conditions in the evaluation of evidence in order to indicate treatments; perform academic clinical trials; and launch public-private partnerships. In this context, accelerating and strengthening biobank networks is essential to enable the validation of prognostic factors and develop new treatments.

8. Health authorities cannot simply be 'one more' actor in the area of rare cancers. Rather, their role should be very active, especially in establishing quality criteria for services, designating and consolidating reference centres, coordinating providers and improving research conditions.

9. The third social sector (non-profits) can play an important part in meeting some of patients' necessities.

Well-developed priorities and points for discussion in the area of paediatric cancers

10. There is a need to further integrate care and research and support stable and sustainable clinical trial platforms and international collaborations.

11. The development of new drugs can be accelerated through the existing networks of specific research centres for performing early phase (I/IIa) clinical trials in paediatric patients; barriers to accessing these centres should be eliminated.

12. Paediatric cancer care takes a long-term view from the perspective of service planning due to the importance of anticipating information and management needs around the

late effects that patients may experience as adults. However, some of the proposals considered constitute a model that can be applied to all rare cancers; for example, the survivorship passport is an instrument that concentrates information the treatments received and the centres attended, as well as individual risks and other personalised aspects related to quality of life. In both paediatric and adult rare cancers, there may be diagnostic and treatment-related uncertainty as well as discontinuity in the care received, so having quick access to these key details from the clinical history in order to seek out medical advice or treatments is critical. In addition, there is the need to establish models of care in alignment with the national health sector organisation for patients in long-term follow up.

13. Quality assurance is an area that has been developed with more detail in the paediatric arena. Recommendations are given for all phases of the care process, including rehabilitation, palliative care, pain therapy and psychosocial care. Moreover, special emphasis is given to strengthening professionals' clinical competencies through specialisation and specific training.

14. A number of best practices are illustrated in the area of palliative care. These aims at ensuring that the expert care provided in a hospital environment is also offered to patients receiving home-based palliative care. The involvement of reference MDTs for each patient, the existence of mobile oncological units, and consistent communication with patients and their families are key practices.

15. The care processes in paediatric cancer are conceived as processes that should be consistent in terms of communication, tailored information and engagement with the patient and family as members of the care team. Special concern is given to the time needed for patients and families to understand the diagnosis and the disease, receive the needed psychological support, and limit the disruption on their lives. The initiatives in this area extend beyond specialised care, involving other care levels and services.

16. It is important to help patients obtain a second medical opinion when desired, without necessarily breaking ties with the reference care team. Normalising this situation is relevant for clinical safety and for reducing the distress that patients and families may feel.

17. Raising awareness on signs and symptoms is important (e.g. at schools), and this work can also extend to all rare cancers, especially in actors who are best placed to identify these diseases.

Well-developed priorities and points for discussion the area of rare cancers in adults

18. The centres that treat patients with rare cancers should be the main source of information for patients on the most adequate range of specialists and services for their care.

19. The drive to improve care and research into rare cancers requires amplifying the patient's perspective. Involving patients when establishing priorities for clinical research and service provision can be articulated, for example through the use of patient-reported outcome measures.

20. Telemedicine and the use of digital pathology systems can be normalised in order to improve the connectivity between centres that treat patients with rare cancers, thus ensuring the transfer of expert knowledge.

Points for discussion with a European perspective

21. All of the 28 EU MS are recommended to delineate in their NCCP specific and adapted healthcare pathways for treating paediatric cancers and rare cancers in adults. The transition from childhood to adult care also needs to be adequately managed.

22. The field of RCs can benefit from the longstanding experience and expertise of the oncology community in dealing with such a severe disease as cancer. In addition, RCs can benefit from RD policies in order to better address the challenges raised by the rarity of the disease, in the field of research, medical expertise, clinical trials and support and social care.

23. There are interlinkages between adult rare cancers and paediatric haematology oncology, and cross-communication, right referral pathways, and clinical trial extrapolation methodologies are needed.

24. Due to the rarity of each single disease, rare diseases and rare cancers have a strong European added value as no one country alone can tackle the issue of both RDs and RCs. Since European regulations, policies and recommendations have been developed to address the challenges paused by the rarity of a disease, we recommend EU MS to integrate relevant European policies for paediatric and rare cancers in adults in their NCCPs.

25. The establishment of European Reference Networks is seen as a major step forward in pooling together the scarce and scattered knowledge on rare diseases/ rare cancers, facilitating exchange of knowledge and data amongst EU MS, fostering research and

ultimately providing necessary care to the patients in a timely and equitable fashion. We also recommend EU MS to strongly support the development of ERNs in the field of rare cancers, the national expert centres who are members of these ERNs, and the connection between ERN members and other healthcare professionals to optimise the offer for care.

Annex 1. Titles of the NCCPs/Cancer documents.

COUNTRY	TITLES
Austria	Title/s: Krebsrahmenprogramm Österreich / Framework programme on cancer control in Austria
Belgium	Title/s in English: National Cancer Plan 2008-2010
Czech Republic	Title/s: Národní onkologický program / National Cancer Control Programme
Estonia	Title/s: Riiklik vähistrateegia aastateks 2007–2015 / National Cancer Strategy 2007–2015. Available at: www.sm.ee/sites/default/files/content-editors/eesmargid_ja_tegevused/Tervis/Aruanded/rta_2009-2020_2012_eng.pdf
France	Title/s: Plan Cancer 2014 - 2019 / Guérir et prévenir les cancers : donnons les mêmes chances à tous, partout en France / Cancer Control plan 2014 - 2019/ To cure and prevent cancers : to provide equal opportunity to all across France
Germany	Title: Nationaler Krebsplan. Handlungsfelder, Ziele und Umsetzungsempfehlungen. 2012. Available at: www.bundesgesundheitsministerium.de
Ireland	Title/s in English: National Cancer Strategy 2017- 2026. Available at: http://health.gov.ie/wp-content/uploads/2017/07/National-Cancer-Strategy-2017-2026.pdf
Italy	Title/s: Documento técnico per ridurre il carco di malattia del cancro 2011-13
Malta	Title/s in English: The National Cancer Plan for the Maltese Islands 2017-2021 www.iccp-portal.org/system/files/plans/MinistryForHealth-Cancer%20Plan.pdf
Netherlands	Title: National Cancer Control Programme (part I) 2005-10 and Progress Report on Cancer Control in the Netherlands (2010)
Portugal	Title/s: Programa Nacional para as Doenças Oncológicas 2017-2020 / National Programm for Oncological Diseases
Slovenia	Title/s: Državni program za obvladovanje raka 2010-2015 / National Cancer Control Plan 2010-2015
Spain	Title/s: Estrategia en Cáncer del Sistema Nacional de Salud (2010) / Cancer Strategy of the Spanish National Health System (2010): http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/cancer.htm
Sweden	Title/s: En nationell cancerstrategi för framtiden (SOU 2009:11) (A National Cancer Strategy for the future.. Available at: www.regeringen.se/contentassets/e343b40615eb46b395e5c65ca38d1337/summary-sou-200911
UK - England	Title/s: Achieving World-Class Cancer Outcomes: A Strategy for England 2015-2020. Available at: https://www.cancerresearchuk.org/sites/default/files/achieving_world-class_cancer_outcomes_-_a_strategy_for_england_2015-2020.pdf

Annex 2. Content analysis of NCCPs on rare cancer.

1. Definition of rare cancers and epidemiology
Italy - Definition of RARECARE based on incidence (5/100.000/year; around 15% of tumours), which changes the accepted definition for rare disease (based on prevalence: 50.000/year). - Main groups: paediatric, hematologic neoplasms and solid tumours in adults. - It is mentioned the existence of "very rare cancers" (<1/100.000/year). **Ireland** - Annual incidence of less than six cases per 100,000, which comprise about 20% of all cancers, with approximately 5,200 new cases annually. **Malta** - The cancer is an unusual type that may need special treatment. Examples can be rare sub-types arising in common cancers sites such as angiosarcoma or lymphoma of the breast. The growing prominence of molecular diagnostics is enabling the differentiation of more subsets of rare cancers within the broader categories of frequent tumours and that are responsive to targeted therapies. Less than 2-6 in 100,000 people are diagnosed with the specific cancer type each year (Cancer Research UK, 2014). There is no internationally agreed definition of rare tumours. In the RARECARE project they have been defined as those cancers with an incidence of ≤ 6/100,000. - Around 200 different types of rare cancers have been identified. Collectively they represent about 22% of all cancer cases diagnosed in the EU28 each year, including rare adult solid tumours (13%) and rare haematological cancers (8%) as well as all childhood cancers (1%). **UK England** - A total of 280,000 individuals are now diagnosed with cancer in a year, a number which has been growing by around 2% per annum. Around half of these diagnoses will be of the most common cancers and the other half will be of rare or less common types. **Slovenia** - Annual incidence of around 100 new cases.
2. Linkage to rare diseases
Italy - Rare cancers should be considered rare diseases. - Care for rare tumours and rare diseases should be functionally integrated in rare cancer networks, if possible.
3. Organisation of cancer services
Italy - An appropriate number of centres of excellence are required to have adequate clinical expertise. - HA should favour collaboration of centres through a network approach or directly using the networks in place. These relations should include the effective patterns of patients' referral and the exploitation of economies of scale related to high-tech resources. **Ireland** - Reorganisation of cancer services (including multidisciplinary working and infrastructural requirements) in relation to diagnosis, treatment planning and initial treatment has taken place since the 2006 Cancer Strategy. This area is referred as "quaternary care". - Reference MDTs at national level should be in place, for instance soft tissue sarcomas and neuroendocrine tumours. All rare cancer patients should be assessed by specialised MDTs.

- Concentration of cases in a small number of designated centres is prioritised in order to increase the specialisation and the need for nominated clinicians to link with rare cancer networks overseas.

UK England

- It is strongly encouraged the establishment of national or regional MDTs for rarer cancers where treatment options are low volume and/or high risk [recommendation].
- All treatment services for rare cancers (fewer than 500 cases per annum across England, including all paediatric, teenage and young adult services) should be commissioned nationally.
- There is an urgent need for investment in cancer specialist nursing roles, particularly in rarer cancers and certain geographies.

Slovenia

- The need for the best possible expert treatment of patients has brought about a concentration of diagnostics and treatment for thyroid and testicular cancer, soft-tissue sarcomas, melanoma, malignant lymphoma and rare tumours. Tertiary institutions should carry out the treatment of rare cancers (alongside some secondary activities), as well as the most complex surgical procedures and training of surgeons, who will specialise in carrying out oncology activities.
- For some years, certain types of cancer have been operated on in a concentrated manner only in the larger centres. Usually these are relatively rare tumours with a specific localisation.

Netherlands

- It is recommended the concentration of the diagnosis and treatment of rare cancer, ensuing multidisciplinary oncological care to improve quality of care. At the same time, it is acknowledged the need to allocate task in the coordinated care chain, including different hospitals (if needed), GPs and extramural carers.
- Allocation of tasks within hospitals is vital to the effectiveness of procedures, logistics, and communication protocols between hospitals (or with patients).

Belgium

- Setting a qualitative and quantitative threshold for the care and treatment of rare tumours. Launch of a study by the Belgian Healthcare Knowledge Center, or KCE, to define the qualitative and quantitative criteria for the treatment of rare tumours. The KCE will answer questions such as: Is the current standard of 400 cases per year to define a rare tumour in Belgium a correct figure? What skills are available in Belgium to care for rare tumours? What are the quantitative and qualitative. [Action 13: Care for rare tumours]

4. Effective patterns of referral

Italy

- The identification of centres of excellence should include the possibility and ways for patients' migration. Regardless of the organisational settings in place, patterns of referral to streamline patients' access to expert centres are critical. This perspective should include an adequate funding framework in order to allow patients freely moving across the different healthcare areas to receive the therapy.
- Waiting lists for patients' referred cannot be a barrier.
- Quality should be equivalent at every provider.

Ireland

- There is a need for clear care pathways for the diagnosis and treatment pf rare cancers, with particular emphasis on timely treatment planning at national MDT level, involving subspecialty expertise in diagnosis and treatment and with linkages to international centres of excellence for specialist advice and intervention.
- Timely transfer of care between settings is required.

Malta

- Ensure sustainability and growth (as required) of the referral systems that involve the transfer of patients abroad for diagnosis and treatment in specialised centres of expertise in the UK and

elsewhere.

France

- Action 2.1: Garantir aux patients, avec l'appui du médecin généraliste ou de l'équipe de premier recours, un premier rendez-vous avec l'équipe de cancérologie la plus adaptée à leur situation et dans un délai rapide.

Aider le médecin généraliste ou l'équipe de premier recours à adresser rapidement leurs patients vers l'équipe de cancérologie adaptée en améliorant la lisibilité de l'offre locorégionale (voire interrégionale pour les cancers de l'enfant ou les pathologies rares ou très complexes), grâce aux réseaux régionaux de cancérologie, en lien avec les ARS en charge de l'organisation de cette offre.[Réduire les délais entraînant des pertes de chance] *(asegurar una cita ràpida i millorar la visisbilitat de l'oferta regional o interregional que millor pot donar resposta a les necessitats dels pacients)*

- Action 2.10: Garantir à chaque malade que la proposition thérapeutique qui lui est faite a pu s'appuyer sur l'avis d'une RCP spécialisée lorsque la situation ou la complexité de sa prise en charge le justifient. Dans un certain nombre de situations complexes, lorsque l'opportunité d'une prise en charge très spécifique répondant à des indications précises doit être discutée, ou lorsque plusieurs options thérapeutiques très différentes sont envisageables, mais que l'équipe locale n'a la maîtrise que d'une partie d'entre elles, le dossier du patient doit être adressé pour avis à une RCP spécialisée. Le but est d'élargir les compétences mobilisées pour parvenir à une proposition thérapeutique ayant étudié la pertinence d'une prise en charge spécifique ou la mobilisation d'une thérapeutique innovante, pour éviter toute perte de chance pour le patient, dans une logique comparable à ce qui est mis en place avec l'organisation de la prise en charge des cancers rares. [Garantir une prise en charge adaptée aux malades nécessitant un traitement complexe] *(asegurar que no hi ha pèrdues d'oportunitat dels pacients en rebre els tractaments i serveis més adequats; tota condició particular o que revesteix complexitat ha de rebre una proposta terapéutica recolzada per un RPC especilitzat en la patología o situació en qüestió)*

5. Linkage to international centres of excellence

Ireland

- Linkages to international centres of excellence for specialist advice and intervention should be developed. International links can bring a view to learning from advances made in other countries and to sharing experiences. The centralisation of diagnosis, treatment planning and surgical services for these cancers will be organised in line with best international practice.

Malta

- Transfer of specialist knowledge and expertise should include cross-border centres.
- On an annual basis near to 50% of all referrals through the National Highly Specialised Overseas Referrals Programme are for cancer patients diagnosed with different types of neoplastic disease and most of these can be classified as low frequency tumours.
- Follow-up and participate in ongoing activities at EU-level in the field of Rare Cancers.
- Support for the establishment and maintenance of contacts and communications with relevant experts will be strengthened particularly with the upgrading of tools that will facilitate connectivity such as with the exploration for the introduction of digital pathology systems.
- Seek to further develop systems for the transfer of specialised knowledge and expertise needed for the improved management of people diagnosed with different forms of rare cancers. Specialised knowledge and expertise is required for several phases of the cancer care pathway of these patients including the aftercare phases following their return from treatment abroad.

France

- Action 2.21 : Développer la télémédecine notamment pour les départements d'outre-mer dans le cadre de la Stratégie nationale de santé.

Garantir les conditions de réalisation de la téléexpertise pour les cas complexes et rares dans tous les

établissements autorisés. (telemedicina per a la Guayana etc)

6. Histopathological and imaging diagnosis, and early detection

Italy

- Errors in the histopathological diagnosis, frequent in the field of rare tumours, should be avoided by reviewing cases in the centres of excellence or even managing there the first diagnosis. Specific reimbursement can be included.

Malta

- Double reading especially in the diagnostic process by expert radiologists performed in conjunction with expert pathologists working in appropriate centres of expertise are an important practice to ensure and further cultivate high quality diagnostic services. Processes to double reading should be supported.
- Importance of early detection to allow a wider range of treatment options.
- Provide the support needed to consolidate and further develop processes that allow for double reading for tumour diagnostic and intervention processes especially when this requires collaboration with expert radiologists working in centres of expertise abroad.

Slovenia

- Directed, complex and expensive tests within specific organ systems can be found at the tertiary level, which are directly connected to therapeutic fields (for example, […] rare tumour oriented diagnostics, […]).

France

Action 2.14 : Harmoniser l'organisation des dispositifs de double lecture des prélèvements tumoraux entre les différents cancers rares de l'adulte et mettre en place un dispositif de double lecture des tumeurs solides malignes del'enfant.

- L'objectif de cette action est d'harmoniser les financements et organisations des dispositifs de double lecture anatomocytopathologique des cancers rares et des lymphomes de l'adulte dans un souci de cohérence globale de prise en charge des maladies rares, et de permettre aux enfants atteints de cancer de bénéficier d'une double lecture en cas de tumeur maligne solide. [Objectif 2 : Garantir la qualité et la sécurité des prises en charge]

7. Clinical research

Italy

- Academic, collaborative research may make up for the lack of research in the current pharmaceutical market. Independent research should be encouraged and funded.
- Specific funds for research are implemented.

Malta

- Promoting research in emerging or 'underserved' areas related to cancer care and control such as rarer cancers.

UK England

- It is mentioned that the new EU Clinical Trials Regulation offers a real opportunity to reduce the time it takes to get studies set up. This will open up the prospect of additional clinical trials, particularly in rarer cancers and in younger people, if implemented appropriately.

France

- La recherche translationnelle et la recherche clinique concrétisent les découvertes issues de la recherche fondamentale en trouvant leur application au lit du malade. Une recherche intégrée couplant aux questions cliniques une recherche biologique de qualité est le gage des progrès médicaux. (…) Les populations les plus vulnérables, en particulier les enfants et les personnes âgées, ainsi que les formes de cancers les plus rares et les plus graves doivent être au coeur de ces recherches. [Objectif 5 : Accélérer l'émergence de l'innovation au bénéfice des patients]

- Action 5.3: Poursuivre l'effort de développement de centres d'essais precoces (CLIP2) pour une meilleure couverture territoriale et favoriser la création de centres dédiés aux enfants.
La labellisation prochaine des CLIP2 devra corriger la couverture territoriale (par exemple dans le Nord et les DOM) et identifier spécifiquement des centres dédiés aux enfants, afin de leur permettre un accès facilité à l'innovation. Cette démarche de soutien aux centres d'essais précoces devra être menée égalementau plan européen. Des partenariats avec l'industrie pharmaceutique devront être développés pour accélérer la prise en compte des cancers rares et des cancers pédiatriques. [Objectif 5 : Accélérer l'émergence de l'innovation au bénéfice des patients]

8. Patients' involvement and availability of information

Italy

- All the activities with rare tumours should foresee involvement of patients' community.
- Public information on rare cancers is of relevance. Initiatives from centres of excellence/patients organisations should be funded.

Malta

- Increased patient participation in cancer research requires the amplification of interaction with patients in particular research fields (such as rare diseases) in which patient experiences and patients reported outcomes have the highest potential to enrich findings.

UK England

- Generally, rare cancer patients report less satisfactory experience in relation to care provided than patients with common cancers.
- Patients want to know what the best treatments are. They want to know where they can access specialist treatment for their specific cancer, and what is available to support them both during and posttreatment. This information is often not easily available. Providers should maintain a directory of local services for people with cancer, their carers and families, and signpost to appropriate services. This directory should cover all types of cancer; people with rare and less common cancers in particular often report difficulties in accessing this kind of information.

9. Evidence assessment and access to orphan drugs

Italy

- The different quality of the evidence cannot entail discrimination for rare cancer patients. A higher degree of tolerance towards "risk averse" approaches should be considered for these patients.
- The conditions of use for drugs in Phase II studies ("compassionate use") should be relaxed whether some evidence of positive outcomes exists (even if partial) as well as international consensus.
- Innovation in statistical methodology is needed in order to adapt "the validity and the precision of biostatistics" to the rare cancers' situation.
- Difficulties to generate evidence of any kind are particularly clear for "very rare" cancers.

Malta

- The exceptional route to be followed when there is a need for a drug in unique circumstances such as rare or childhood cancers is to be protected.

UK England

- CRGs [care commissioning institutions] should take responsibility for developing minimum service specifications where patient volumes are too low to be covered by a NICE clinical guideline, for example for rarer cancers.

10. Population-based databases, registries and biobanks

Malta

- Collection of specific population-based information/databases on diagnosis and treatment of rare cancers [Process indicator].
- Few available registries and tissue banks [general problem referred]

Annex 3. Content analysis of NCCPs on paediatric cancer.

1. Epidemiology and age distribution
Italy - L'oncologia pediatrica si occupa dello studio e della cura delle neoplasie dell'età pediatrica. Il range di età teorico è di 0-15 anni, tuttavia, nella realtà, il limite dei 15/21 anni viene esteso indefinitamente per alcune neoplasie tipiche del bambini che si presentano, sia pure eccezionalmente, in età adulta. Etc. [3.4.1 Considerazioni generali] **Ireland** - Approximately 200 children and young adolescents (0-16 years of age) are diagnosed with cancer each year. [Chapter 9. Getting the diagnosis right] **UK-England** - Cancer is the biggest cause of death from illness or disease in every age group, from the very youngest children through to old age, with mortality significantly higher in men than in women. Etc. [1. The current landscape of cancer in England] - Cancer services for children, teenagers and young adults (CTYA) have improved significantly and deliver better outcomes for patients. In children (aged 0 – 14) in particular, five-year survival has increased from 40% in the early 1970s to 82% today. [5.6.2 Children, teenagers and young adults]. **Spain** - El cáncer en la infancia y adolescencia presenta unas características histológicas, clínicas y epidemiológicas distintas al de los adultos… Etc. [1.3.4. Tumores infantiles] **Malta** - Cancers in children and young people are rare but it is nonetheless a major health issue. In Malta, about 25 children, adolescents and young adults (up to the age of 24) are diagnosed with cancer each year. [A2.2.3: Paediatric oncology and cancer in adolescents and young adults (AYA)] **Austria** - Das Spektrum der Krebserkrankungen im Kindes- und Jugendalter unterscheidet sich grundlegend von dem im Erwachsenenalter. Zu den häufigsten Tumoren zählen Leukämien, Lymphome und Tumore des Zentralnervensystems, die gemeinsam etwa 60 Prozent aller Krebserkrankungen von Kindern und Jugendlichen ausmachen. Über 70 Prozent der krebskranken Kinder und Jugendlichen können heute geheilt werden, bei einigen Krebserkrankungen überleben nahezu alle. Die Behandlung ist intensiv, langdauernd sowie komplex und eine Herausforderung für alle Beteiligten. [6. Spezifische Aspekte für die Zielgruppe der Kinder und Jugendlichen] **France** - Le cancer chez l'enfant est une maladie rare qui représente 1 à 2 % de l'ensemble des cancers. On dénombre environ 1 700 nouveaux cas chaque année en France chez les moins de 15 ans, et plus de 700 nouveaux cas chez les adolescents de 15 à 19 ans. Des progrès considérables ont pu être enregistrés au cours des dernières décennies, permettant aujourd'hui de guérir plus de quatre enfants sur cinq. [Répondre aux besoins des enfants, adolescents et jeunes adultes atteints de cancer]
2. Management of side effects of cancer treatments
Slovenia - Over the past decade, aggressive oncology treatment, which encompasses surgery, irradiation and systemic treatment, has proven to be particularly effective in treating some forms of cancer that occur in childhood and adolescents. Due to the greater possibility of later side effects, which are demonstrated by worsening function of individual organs and psychic troubles, which lead to various

levels of disability and even to newly developed treatment-related cancers, this problem must be given special attention. A smaller portion of cancer patients are affected by this, but due to the greater possibilities of a cure, this represents an ever greater portion of overall cancer prevalence. [3.3.8 Management of Side Effects of Oncology Treatment]

Italy

- Il miglioramento della sopravvivenza ha consentito di riconoscere con maggior accuratezza i danni tardivi delle terapie antitumorali. Nella pianificazione terapeutica di ogni neoplasia infantile deve sempre essere tenuta in considerazione la valutazione dell'entità delle sequelae e, per quanto possibile, la guarigione dovrà essere raggiunta limitando i danni oggi riconoscibili. Il danno può essere irreversibile e talora anche progressivo (v. fibrosi polmonare) tanto da essere incompatibile con la vita. Il rischio pertanto di guarire un bambino dal tumore e farne un adulto con malattia cronica deve essere tenuto costantemente presente. A questo concetto è strettamente collegato quello della valutazione della qualità di vita legata al programma di cura per quel paziente con quella data neoplasia. [3.4.4 Danni iatrogeni]

UK-England

- However, some types of children's cancer remain very hard to treat. Furthermore, many patients suffer long-term physical and psychological consequences of their treatment in to adulthood. Over the last few decades, the impact of some of these longer-term consequences has reduced, as we have better understood them and reduced the intensity of treatments given. [5.6.2 Children, teenagers and young adults].

Spain

- Es motivo de preocupación en la actualidad los efectos secundarios derivados del tratamiento del cáncer infantil y del adolescente, de forma que en el diseño de nuevos protocolos de tratamiento se trata de modificar o reducir el tratamiento para aquellos niños con buen pronóstico, mientras continúa intensificándose el mismo en aquellos tumores aún incurables. Son bien conocidas las secuelas del tratamiento del cáncer en el niño: muerte temprana, tumores secundarios, secuelas orgánicas (cardíacas, pulmonares, endocrinológicas, neurológicas) y psicológicas. [1.3.4. Tumores infantiles]

Malta

- 4. Address the special needs of young cancer patients and cancer survivors, in particular through the involvement and education of their parents and through the elaboration of careful survivorship plans that address the social, educational and long-term implications of surviving cancer from a young age.

Sweden

- However, they are at risk of being affected by complications later in life, both from their disease and from treatment which in some cases makes heavy demands on them. Many people need specialist care and rehabilitation for a long time after their treatment has been completed. To meet future needs it is, in our view, crucial that greater effort is put into research and development of knowledge on side-effects. Adequate resources and expertise are required to meet the increased need for follow-up, care and support in the event of late complications. [Children and young people]

Austria

- 6.2 Operatives Ziel: Implementieren eines „Survivorship Passports" für Kinder und Jugendliche

I. Alle erfolgreich behandelten jungen Krebspatientinnen und -patienten sollten unbedingt über längere Zeit beobachtet werden, um nicht nur das Überleben, sondern auch die Lebensqualität und die möglichen Langzeitfolgen der Behandlung zu dokumentieren. Zwei aktuelle FP7 [46] geförderte Projekte, encca (http://www.encca.eu) und PanCare Surf Up (http://www.pancaresurfup.eu/) haben die Basis für die gezielte lebenslange Nachsorge nach Krebserkrankung im Kindes- und Jugendalter geschaffen. Der sogenannte **„Survivorship Passport"** greift den Wunsch von betroffenen Jugendlichen und jungen Erwachsenen auf, am Ende der Behandlung Information gebündelt zu ihrer Krebserkrankung, d. h. zu erhaltenen Therapien und allfälligen Komplikationen sowie eine Einschätzung des individuellen Risikos für mögliche Spätfolgen zu bekommen. Dieser Survivorship Passport

ermöglicht bei jedem weiteren Arztkontakt im künftigen Leben die wesentlichen Informationen medizinisch geprüft und rasch zur Verfügung zu haben und ermöglicht dementsprechend auch eine risikoadaptierte Nachsorge.

II. **Maßnahme A:** Erarbeiten eines »Survivorship Passports« basierend auf internationalen Erfahrungen.

III. Messgröße A1: »Survivorship Passport" ist entwickelt.

Messgröße A2: Alle erfolgreich behandelten jungen Krebspatientinnen und -patienten erhalten einen "Survivorship Passport" nach dem Abschluss ihrer Behandlung.

3. Centralisation and networking

Italy

- Riconoscimento dell'eccellenza delle strutture accreditate per l'oncologia pediatrica
- 4.1.6. Prestazioni da centralizzare in ambito regionale o concentrare in poche strutture di eccellenza di Anatomia Patologica e/o (limitatamente alle neoplasie ematologiche) di Ematologia dotate di laboratori diagnostici di alto livello tecnologico. [4.1.6.]

Ireland

- All of these children are referred to the National Paediatric Haematology and Oncology Centre (NPHOC) to have their diagnosis established, treatment planned and follow-up mapped out. [Chapter 9. Getting the diagnosis right]
- NPHOC also acts as an advisory and response service for 16 shared care centres throughout the country. [Chapter 10 Getting the treatment right]

UK England

- The NHS needs to consider the best structure for CTYA cancer services to ensure we continue to improve on the care and experience that patients receive. Outside London, only four centres treat more than 100 children with cancer per year, across all types of cancer. There is an opportunity to consider whether outcomes could be improved through further reconfiguration of services. Any review should be based on patient outcomes, including patient experience, as few centres offer comprehensive specialist services for children. [5.6.2 Children, teenagers and young adults].
- Establish clear criteria for designation and de-designation of treatment centres for TYA patients. [5.6.2 Children, teenagers and young adults]

Malta

- Review to concentrate on: i. volume effect in paediatric oncology.

Belgium

- 1. Recognition of the 8 existing paediatric oncology centres as unique reference centres for the treatment of paediatric cancer.
- It is essential to support the 8 reference paediatric oncology centres and to create a specific care program in paediatric oncology to further improve the quality of care for children with cancer.
- networking and specialisation of the 8 existing paediatric oncology centres. These centres must each have the necessary specialised staff. [Action 12: Definition and funding of a paediatric cancer care program]

Estonia

- At present there are two local hospitals in Estonia that measure up to the requirements of all-round cancer center: Tartu University Hospital and North Estonia Medical Center. Besides this Tallinn Children Hospital deals with children`s systemic chemotherapy and biological therapy. The development of the network of cancer treatment institutions has been regulated by the social`s ministers regulation nr. 103 of 19.08.2004 "The requirements for different types of hospitals". [5. Diagnostic and treatment of tumours]

Spain

- El objetivo de la oncología pediátrica en España debe ser no sólo curar el cáncer del niño y del

adolescente sino lograr que sea un adulto sano desde el punto de vista físico, psicológico, social y espiritual. Por lo tanto se recomienda: que los niños y adolescentes diagnosticados de cáncer deben ser tratados en Unidades de Oncología Pediátrica de carácter multidisciplinar y designadas por las CC.AA. para que reciban el mejor tratamiento basado en la evidencia científica según los protocolos de consensuados por las sociedades científicas nacionales e internacionales en vigor.

Slovenia

- Tasks and Measures: 1. A Center for Management of Side Effects of Oncology Treatment must be established in the framework of IOL as a tertiary activity. [3.3.8 Management of Side Effects of Oncology Treatment]
- An actual concentration of diagnostics has only come about for types of cancers where treatment is carried out in specifically defined institutions (lymphomas, hematologic malignancies, paediatric cancer, germ cell cancer, cancer of soft tissues and bones and thyroid cancer) [3.2.1 Cell-tissue and molecular diagnostics].

Austria

- Behandlung in einem Zentrum durch ein multiprofessionell und interdisziplinär zusammengestelltes Team. Es hat sich gezeigt, dass die Überlebenschancen der Kinder mit Krebserkrankungen höher sind, wenn Diagnose und Behandlung durch ein Expertenteam in einem spezialisierten Zentrum erfolgen. Daher ist eine ehestmögliche Transferierung in ein pädiatrisches hämato-onkologisches Zentrum sicherzustellen. Diese Behandlungszentren bilden ein Netzwerk, arbeiten nach einheitlichen Therapieanleitungen und Studienprotokollen und sind aktiv in die klinische Forschung eingebunden. Kinderonkologische Schwerpunktzentren verfügen in Österreich auch über erfahrene Tumorboards mit der notwendigen fachspezifischen Expertise zur Steuerung von Diagnostik und Therapie. [6. Spezifische Aspekte für die Zielgruppe der Kinder und Jugendlichen]

France

- Il s'agit notamment de l'organisation de la cancérologie pédiatrique permettant la tenue de RCP interrégionales qui a permis d'harmoniser les pratiques en répondant aux situations les plus fréquentes. Ce dispositif doit être renforcé par un accès au recours pour des situations plus complexes ou plus rares nécessitant l'intervention d'équipes ayant des compétences spécifiques. En parallèle, il convient d'étendre le dispositif aux prises en charge des adolescents et jeunes adultes (AJA). Ainsi, des organisations régionales ou interrégionales adaptées tenant compte des compétences des équipes existantes seront envisagées.
- Action 2.15: Identifier et labelliser des centres de référence au niveau national pour les prises en charge des enfants présentant des tumeurs rares.

 La mise en place des RCP interrégionales pour la pédiatrie est encore en cours et cette organisation fera l'objet d'une évaluation et d'un éventuel ajustement. Ces RCP interrégionales ont été un levier important d'amélioration des pratiques, mais ce niveau de concertation interregional apparaît insuffisant pour répondre à la prise en charge de cancers rares de l'enfant qui nécessitent d'avoir recours à des compétences très spécialisées. Le Plan cancer propose donc une nouvelle approche permettant de compléter le dispositif de prise en charge des enfants.

 Il s'agira de mettre en place une organisation nationale, reposant sur des centres de référence labellisés par l'INCa, en charge d'assurer une proposition thérapeutique adaptée et l'orientation des enfants concernés vers des équipes spécialisées dans des situations particulières ou complexes identifiées au plan national (cancers très rares de l'enfant ou indication de recours à des techniques très spécialisées comme la protonthérapie).

- Au-delà de la structuration interrégionale qui a été faite lors des précédents Plans cancer, les situations rares des cancers de l'enfant, identifiées au plan national (cancers très rares ou questionnement sur l'accès à des techniques très spécialisées comme la protonthérapie) feront l'objet d'un processus de proposition thérapeutique national avec l'orientation des enfants concernés vers des équipes très spécialisées. [Répondre aux besoins des enfants, adolescents et jeunes adultes atteints de

cancer]

4. Quality of care

Italy

- La rete di oncologia pediatrica in Italia è costituita dagli Istituti Clinici, Dipartimenti, Strutture, Università che fanno capo all'AIEOP (http://www.aieop.org/), l'Associazione Italiana di Ematologia ed Oncologia. Nell'ambito di questo network esistono studi clinici e protocolli terapeutici che sono condivisi a livello nazionale o pluri-istituzionale secondo le caratteristiche e le competenze dei singoli centri. L'AIEOP si fa inoltre carico, attraverso il proprio consiglio direttivo, eletto dai membri appartenenti, ed il proprio comitato di qualità, di verificare le caratteristiche di competenza personale e strutturale con gli standard di qualità richiesti, attraverso il processo di audit. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediátrico oncologico]
- Riconoscimento della specificità dell'Oncologia Pediatrica nel Sistema Sanitario Nazionale.
- Promozione della formazione in oncologia pediatrica in campo ospedaliero ed universitario
- La rete di oncologia pediatrica in Italia è costituita dagli Istituti Clinici, Dipartimenti, Strutture, Università che fanno capo all'AIEOP (http://www.aieop.org/), l'Associazione Italiana di Ematologia ed Oncologia. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico].
- Per la "presa in carico globale" del paziente, le attività cliniche devono avvalersi di un supporto multispecialistico costituito da professionisti dedicati all'ambito dell'oncologia pediatrica, quali radiologo, patologo, chirurgo, radioterapista, medico nucleare, endocrinologo, neurologo, psicologo e, in campo pre-clinico, biologo [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico].

France

- Action 2.13: Assurer aux adolescents et jeunes adultes une prise en charge tenant compte de leur spécificité et s'attachant au maintien du lien social. Le but est d'organiser au niveau régional ou interrégional une structuration de la prise en charge spécifique des adolescents et jeunes adultes atteints de cancer, répondant à des objectifs définis dans un cadre national. Ce cadre pourrait comprendre à la fois des critères en matière d'expertise médicale des équipes concernées, mais aussi de réponse à des besoins spécifiques notamment en termes de préservation du lien social.[Objectif 2 : Garantir la qualité et la sécurité des prises en charge]
- Le Plan cancer fixe également pour objectif, à la manière de ce qui a été fait pour les cancers de l'enfant, d'assurer pour les adolescents et jeunes adultes une prise en charge adaptée en organisant au niveau régional ou interrégional une structuration répondant à des objectifs définis dans un cadre national (ces objectifs pourront comprendre à la fois des critères en matière d'expertise médicale, mais aussi de réponse aux besoins spécifiques des adolescents et jeunes adultes, notamment de préservation du lien social). [Répondre aux besoins des enfants, adolescents et jeunes adultes atteints de cancer]
- Intégrer les modalités particulières de l'annonce pour les cancers pédiatriques, en termes de formation des professionnels, de supports d'information, de lieux d'annonce spécifiques, de soutien psychologique aux enfants et à leurs familles ou encore de suivi social. [Objectif 7 : Assurer des prises en charge globales et personnalisées][comunicar bé el diagnóstic y la proposta terapéutica, donar un sentit de procés consistent i coherent a l'asistència i a la participación del pacient]
- Demander aux centres spécialisés en oncopédiatrie de rendre compte de leur maîtrise (domini) des techniques de prise en charge de la douleur de l'enfant. [Objectif 7 : Assurer des prises en charge globales et personnalisées]
- Comme pour les cancers de l'adulte, l'accès à un double avis (opinió) sera facilité afin que ce droit ne soit pas une rupture avec l'équipe référente.
- Action 2.14: Harmoniser l'organisation des dispositifs de double lectura des prélèvements tumoraux entre les différents cancers rares de l'adulte et mettre en place un dispositif de double lecture des tumeurs solides malignes de l'enfant.

 L'objectif de cette action est d'harmoniser les financements et organisations des dispositifs de double lecture anatomocytopathologique des cancers rares et des lymphomes de l'adulte dans un souci de cohérence globale de prise en charge des maladies rares, et de permettre aux enfants atteints de cancer de bénéficier d'une double lecture en cas de tumeur maligne solide.
- Action 6.1 : Faire évoluer le dispositif d'oncogénétique et améliorer son accès.les avancées technologiques comme le séquençage de nouvelle génération en vérifiant qu'elles participent à une réduction des délais de rendu de résultats, notamment pour certains cancers pédiatriques ; [Objectif 6 : Conforter l'avance de la France dans la médecine personnalisée]
- Il s'agit notamment de l'organisation de la cancérologie pédiatrique permettant la tenue de RCP interrégionales qui a permis d'harmoniser les pratiques en répondant aux situations les plus fréquentes. Ce dispositif doit être renforcé par un accès au recours pour des situations plus complexes ou plus rares nécessitant l'intervention d'équipes ayant des compétences spécifiques. En parallèle, il convient d'étendre le dispositif aux prises en charge des adolescents et jeunes adultes (AJA). Ainsi, des organisations régionales ou interrégionales adaptées tenant compte des compétences des équipes existantes seront envisagées.

Slovenia

- In organising the specialist network in the field of systemic treatment, it is necessary to provide for equipment, personnel and financing of drugs to the extent anticipated in the mid-term plans. The coordination of this field, which is increasingly important for organisational and professional aspects, can only be provided by the establishment of an Expanded Professional Collegium for Medical Oncology, which must include paediatric oncology and haemato-oncology [3.6.2 Guidelines for Development of cancer heathcare at the Secondary Level].

Belgium

- networking and specialisation of the 8 existing paediatric oncology centres. These centres must each have the necessary specialised staff. [Action 12: Definition and funding of a paediatric cancer care program]

5. Rehabilitation

Austria

- 6.1 Operatives Ziel: Bedarfsorientiertes Bereitstellen einer familienorientierten stationären Rehabilitation

IV. Eine lebensbedrohliche Erkrankung im Kindes- und Jugendalter belastet nicht nur das Kind / den Jugendlichen, sondern das gesamte familiäre Umfeld. In der familienorientierten stationären Rehabilitation/Nachsorge wird nach Abschluss der intensiven Behandlungsphase neben dem erkrankten Kind die gesamte Familie in die Rehabilitationsmaßnahmen einbezogen. Durch die gleichzeitige Therapie des primär erkrankten Kindes und dessen Familienmitgliedern können wichtige Synergieeffekte erzielt werden.

V. Maßnahme A: Strukturierte Zusammenarbeit mit einem Zentrum für familienorientierte kindgerechte Rehabilitation möglichst in Österreich

VI. Messgröße A1: Ein Großteil der Kinder und Jugendlichen erhalten nach der akuten Behandlung von Knochentumoren, Tumoren des Gehirns und Nervensystems sowie nach einer Stammzelltransplantation die entsprechende Rehabilitation.

Messgröße A2: Die Hälfte der Kinder und Jugendlichen erhält nach der akuten Behandlung von anderen soliden Tumoren sowie Leukämie und Lymphomen die entsprechende Rehabilitation.

6. Psycho-social care

Austria

Umfassende psycho-soziale Versorgung.

Auf Grund des komplexen Geschehens einer kindlichen Krebserkrankung und deren Bedeutung im

familiären Umfeld ist eine generelle Indikation für psycho-soziale Versorgung hervorzuheben. Dabei ist die ganzheitliche Betreuung von Kindern und Jugendlichen ab dem Diagnosezeitpunkt innerhalb des Bezugssystems notwendig. Neben kinderonkologisch tätigen Ärzten/Ärztinnen und dem onkologisch geschulten Kinderpflegepersonal, Psychologinnen/Psychologen und Psychotherapeutinnen/-therapeuten besteht Bedarf an Kindergartenpädagoginnen/-pädagogen, Lehrerinnen/Lehrern, Physio- und Ergotherapeutinnen und -therapeuten und Sozialarbeiterinnen/ -arbeitern. [6. Spezifische Aspekte für die Zielgruppe der Kinder und Jugendlichen]

Spain

- Los niños y adolescentes diagnosticados de cáncer deberían recibir una atención psicológica y educativa desde el momento del diagnostico y hasta su curación, incluyendo la rehabilitación en su caso. [Recomendaciones; 2.4. Asistencia a la infancia y adolescencia]

7. Palliative care

Belgium

- To structurally finance an inter-university liaison team made up of at least 3 nurses and, according to need, the services of a paediatrician, a psychologist, a physiotherapist and a secretary. The task of the inter-university **liaison** team is to make arrangements for patients between 0 and 18 years of age suffering from illnesses with a reserved prognosis (in most cases fatal) -regardless of their illness and place of residence - to return home and remain there. This program of care continues until the patient dies at home, and it includes bereavement support. The liaison team constitutes the link between the hospital and the home environment and is responsible for guaranteeing continuity of care and the overall management of the care of seriously sick children at home. [Action 23: Structural funding of paediatric care networks - "ongoing care for children"]

Austria

- Bei Bedarf Bereitstellen einer multiprofessionellen Palliativ- und Hospizbetreuung. Wenn das Kind nicht geheilt werden kann, braucht die Familie die Hilfe eines multidisziplinär zusammengesetzten Palliativ- oder Hospizteams. Hospiz- und Palliativangebote, die sich an Erwachsene richten, eignen sich nicht automatisch auch für Kinder, da nicht nur die Krankheitsbilder, sondern auch die spezifischen Bedürfnisse und das Miteinbeziehen des familiären Umfeldes bei allen Überlegungen zu berücksichtigen sind. Zu betonen ist, dass pädiatrisch onkologische Behandlungszentren auch in der Palliativphase eng mit dem Kind/Jugendlichen und seiner Familie verbunden bleiben und gerne auf die Unterstützung durch mobile Palliativteams (externer onkologischer Pflegedienst) zurückgreifen, um eine Versorgung solange wie möglich daheim in der gewohnten Umgebung anbieten zu können. Das jeweilige Betreuungsmodell ist von der örtlichen Distanz des Wohnorts zum onkologischen Behandlungszentrum mitbestimmt. Für die Gruppe der Kinder, Jugendlichen und jungen Erwachsenen liegt seit Mitte 2013 ein spezifisches Versorgungskonzept vor [30].

8. Transition gap between children's and adult services

Italy

- L'accesso e la qualità delle cure dei pazienti adolescenti e giovani adulti rappresenta un problema condiviso da tutto il mondo occidentale. Un recente studio dell'AIEOP su oltre 22,000 pazienti registrati (dal 1989 al 2006) nei protocolli da essa coordinati sottolinea come circa l'80% dei pazienti sotto i 15 anni attesi in Italia sono trattati nei centri AIEOP, contro il 10% dei pazienti tra 15 e 19 anni; questa percentuale è in costante incremento negli anni e risulta maggiore per alcune patologie (es. sarcomi), ma resta comunque inaccettabile, dato che due terzi dei tumori degli adolescenti sono tumori "pediatrici". Diversi studi internazionali hanno documentato come il gruppo di pazienti di età compresa tra 15 e 29 anni è quello per il quale si sono osservati i minori miglioramenti in termini di sopravvivenza negli ultimi anni, indipendentemente dal tipo di tumore; parallelamente, la stessa fascia di età è quella con il minor numero di casi arruolati in protocolli clinici. I gruppi cooperativi oncologici pediatrici

internazionali, compresa l'AIEOP, si stanno attivando per migliorare l'accesso alle cure dei pazienti adolescenti, che spesso rimangono in una terra di nessuno tra il mondo pediatrico e quello dell'oncologia medica dell'adulto. La comunicazione e la collaborazione tra i centri di oncologia pediatrica e i centri di oncologia medica in Italia resta di fatto sub-ottimale, e necessita di essere rapidamente migliorata per migliorare la gestione clinica dei pazienti adolescenti. [3.4.3 La specificità del paziente adolescente]

Spain

- En este sentido es importante saber que el adolescente con cáncer plantea una serie de problemas específicos derivados del hecho de estar gravemente enfermo en la época de la vida en la que el ser humano más lucha por su independencia y autonomía. El adolescente es, en esta situación, más dependiente de sus padres y la enfermedad es un frenazo a sus aspiraciones vitales (intelectuales, deportivas y sociales). Por ello se recomienda que la atención al adolescente se realice en unidades de oncología pediátrica que cuenten con la infraestructura necesaria de atención psicosocial e incluyan la escolarización. [1.4.4. Asistencia a la infancia y la adolescencia]

Malta

- iii. core elements for adequate paediatric cancer treatment and support services. The issues concerned with the transition of young patients from the paediatric to adult oncology services require special attention. [A2.2.3: Paediatric oncology and cancer in adolescents and young adults (AYA)]

Ireland

The development of a new children's hospital will provide the opportunity to establish an age-appropriate facility for adolescents and young adults with cancer. Services for this cohort, and transition arrangements to adult services, are a particular focus of this Strategy. [Chapter 10 Getting the treatment right]

UK-England

- Ensure that any transition gap between children's' and adult services is addressed.
- Transitions continue to pose a problem in some areas, with paediatric services stopping at 16 in some hospitals but adult services not starting until 18. In addition, pathways between specialist centres and shared care units currently cause a great deal of difficulty for patients. This needs to be addressed. [5.6.2 Children, teenagers and young adults].
- Children, teenagers and young adults have specific post-treatment requirements which overlap with but may be different to adults. These need to be appropriately commissioned and delivered. Transition points are often particularly poorly managed, not least as treatment can often be delivered a long way from home. Age-specific support will need to be determined for these patients, and some specific psychosocial and/or keyworker services maybe provided by specialist charities, for example, Clic Sargent or Teenage Cancer Trust. NHS England should ask the CTYA CRG to feed into the NICE guideline living with and beyond service requirements for the CTYA populations. [7.3 Commissioning services for people living with and beyond cancer]

France

- […] En effet, cette population jeune est exposée à plusieurs difficultés simultanées, du fait de l'âge charnière entre l'enfant et l'adulte compliquant leur adressage en hospitalisation, d'une moindre adhésion aux traitements nécessitant un accompagnement particulier et de spécificités inhérentes aux types de cancers survenant dans cette tranche d'âge qui impliquent des protocoles dédiés. [Objectif 2 : Garantir la qualité et la sécurité des prises en charge]

9. Clinical research and enrolment to clinical trials

UK-England

- The numbers of children, teenagers and young adults with cancer is relatively small. Therefore they represent a cohort of cancer patients in which we could try new approaches to continuous learning, outside traditional clinical trial settings. The use of patient data to understand how patients are

progressing through services, together with analysis of tumour tissue to understand the molecular features of their cancer, could transform our approaches in the years ahead. There are a number of important questions such initiatives would enable us to address, which could ultimately improve services for all patients.

Spain

- La investigación clínica, básica y epidemiológica en oncología pediátrica debe coordinarse entre las distintas unidades de oncohematología pediátrica del país, mediante la participación en las redes temáticas de investigación del cáncer. El diagnóstico molecular de las leucemias y tumores sólidos pediátricos permiten la definición de factores pronósticos y el tratamiento individualizado del enfermo. [1.4.4. Asistencia a la infancia y la adolescencia]
- Potenciar e incentivar investigaciones teniendo en cuenta las desigualdades y la perspectiva de género, así como la investigación clínica infantil de los tumores de baja incidencia. [2.7. Investigación]

France

- Action 5.3 : Poursuivre l'effort de développement de centres d'essais précoces (CLIP2) pour une meilleure couverture territoriale et favoriser la création decentres dédiés aux enfants.

La labellisation prochaine des CLIP2 devra corriger la couverture territoriale (par exemple dans le Nord et les DOM) et identifier spécifiquement des centres dédiésaux enfants, afin de leur permettre un accès facilité à l'innovation. Cette démarche de soutien aux centres d'essais précoces devra être menée également au plan européen. Des partenariats avec l'industrie pharmaceutique devront être développés pour accélérer la prise en compte des cancers rares et des cancers pédiatriques.[Objectif 5 : Accélérer l'émergence de l'innovation au bénéfice des patients]

- Action 5.6 : Adapter les essais cliniques aux évolutions conceptuelles induites par l'arrivée des thérapies ciblées.

☐ Développer des essais impliquant peu de malades, mais reposant sur des hypothèses biologiques fortes, et intégrant des critères de substitution (« surrogate maker ») ; des essais adaptatifs pour les phases précoces ; des essais incluant des malades atteints de tumeurs touchant différents organes, mais partageant les mêmes mécanismes physiopathologiques pour rendre
possibles des AMM transpathologies (du type du programme AcSé) ; des essais évaluant des associations de médicaments innovants provenant si nécessaire de plusieurs laboratoires. [Objectif 5 : Accélérer l'émergence de l'innovationau bénéfice des patients]

Améliorer l'accès des enfants, adolescents et jeunes adultes à l'innovation et à la recherche

- Afin de favoriser l'accès aux molécules innovantes pour les patients français et de donner une meilleure visibilité internationale à la recherche clinique académique française, le Plan cancer 2009-2013 a permis la mise en place de centres spécialisés dans les essais précoces de nouveaux médicaments. Le nouveau Plan annonce la création de centres de phase précoce dédiés aux cancers pédiatriques. Le programme AcSé qui vise à faire bénéficier des patients en échec thérapeutique d'un accès sécurisé à des thérapies ciblées sera également soutenu et son ouverture aux enfants doit être maintenue. Au-delà des essais précoces, la cancérologie pédiatrique sera une priorité de la recherche clinique notamment pour des essais d'optimisation des traitements et de désescalade pour en réduire les effets secondaires. Pour s'en donner les moyens, il est proposé que les coûts de la recherche incluent les coûts de transport et d'hébergement, en particulier pour les enfants et leurs accompagnants, afin de lever cette barrière d'accès aux essais thérapeutiques. En matière d'accès aux médicaments innovants, le Plan encourage une politique globale de fixation de priorités de développement des médicaments, lacancérologie pédiatrique en fera partie.En matière de recherche, plusieurs tumeurs de l'enfant feront partie des tumeurs bénéficiant d'un séquençage complet de leur génome à la recherche de nouvelles cibles (objectius) thérapeutiques, afin de faire bénéficier aux enfants de la médecine personnalisée.
- Action 16.11 : Participer activement aux actions de coordination des financeurs internationaux de la recherche sur le cancer et les prolonger avec les pays européens et les États-Unis, et avec les pays

émergents en proposant des solutions partagées par tous.

Italy

- Il superamento dei limiti attuali e il disegno di trattamenti più efficaci per queste patologie saranno possibili solo in presenza di una maggiore comprensione degli eventi molecolari che sono alla base della tumori genesi dei tumori nei bambini. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico]

UK-England

- Paediatric cancer survival rates may have been improving (in most cancers), but success has been less remarkable in teenagers and young adults. This may be because a far smaller proportion of TYA patients (15+) take part in clinical trials than younger children. Patients and their families would like increased opportunities to be involved in trials, with access to innovative treatments that wouldn't otherwise be available to them.

10. Access to drugs and development of new therapies

Belgium

- Making effective anticancer treatments rapidly available and accessible. Ex. Bulsufan IV (Busulfex) for leukemia. [Action 15: Improved cover for cancer treatments by compulsory health insurance]

France

- Sont privilégiées en particulier des actions de réduction des cancers évitables (tabac, alcool, maladies infectieuses), la coopération dans les essais cliniques et la médecine personnalisée, et l'accès aux médicaments, en particulier en pédiatrie.
- Action 5.5: Définir des priorités en matière de développement des médicaments anticancéreux.
 Définir de manière plus explicite et transparente des indications/situations cliniques devant faire l'objet de développements prioritaires en oncologie en tenant compte des besoins médicaux les moins bien couverts, notamment en cancérologie pédiatrique. Cette nouvelle initiative doit être menée par l'Agence nationale de sécurité du médicament (ANSM) et l'INCa et portée au niveau de l'Agence européenne du médicament. [Objectif 5 : Accélérer l'émergence de l'innovation au bénéfice des patients]

11. Biobanks

Italy

- Data la rarità delle neoplasie pediatriche, le pediatrie oncologiche in Italia e nel mondo sono associate in società scientifiche che collaborano in attività cliniche allo scopo di elaborare protocolli terapeutici e in consorzi multi-istituzionali per creare banche di materiale reali o virtuali che mettano a disposizione dei ricercatori di base e traslazionali, e delle tecniche da essi acquisite, il materiale biologico da esaminare per poter avanzare sia nel campo della validazione dei fattori prognostici sia in quello dei nuovi trattamenti. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico]

UK England

- NHS England should set an expectation that all children, teenagers and young adults diagnosed with cancer should be asked at diagnosis whether they consent for their data and a tissue sample to be collected for use in future research studies and development of services. NHS England should work with research funders to make best use of these resources in the future. [Recommendation 44]

Belgium

- Hematopoietic stem cells and cord blood banks have been approved for a number of years in several hospitals across the country. These banks form part of vast international networks. They are a source of great hope of a cure for patients (children and adults) who suffer from leukaemia or serious blood disorders. These patients must be given heavy chemotherapy treatments to remove their blood lines, which must then be restored by a graft of hematopoietic stem cells which are stored in these banks and which come from compatible donors. [Action 17: Structural support for cell therapy banks and

units for hematopoietic stem cells and cord blood]

12. Health promotion and primary prevention

Slovenia

- 5. Producing a comprehensive model for health promotion and education of children and youth in all phases of development. [1. Primary prevention]
- % of people in the target group (adults, children, adolescents...) without risk factors

Percentage of those vaccinated against HPV [Indicator/Primary prevention].

Italy

- Campi elettromagnetici: è ipotizzato un possibile ruolo cancerogeno dei campi magnetici a 50 Hz in relazione alla leucemia infantile: gli studi epidemiologici hanno evidenziato un'associazione statistica per esposizioni a livelli superiori a 0,4 μT. Tale associazione non è confermata dalla ricerca sperimentale su animale (World Health Organisation 2007: Extremely Low Frequency Fields. Environmental health criteria n.238) [2.1 Prevenzione Universale (Primaria)]

Netherlands

- Importance of healthy lifestyles, with the support of the educational sytem. 'Healthy schools' should be stimulated and rewarded. Interventions through objectives, methods and budgets should take place locally, espcailly for children, Young people and underpriviledged groups [Primary prevention - Actions].
- Prevetion of overweight due to its contribution to the development of cancer. The prevalence of overwieight is increasing. The most rapid rises appear to affect Young children aged three and above.
- Agreements with food manufacturers to make foods more healthy shoudl be made, including better information on labels, and about the advertizing of high-calorie products aimed at children and young people.
- Applying sun lotion to children's skin. [Primary prevention]
- At least one hour of physicial activity each day of the week [Primary prevention]

Ireland

- Ban on smoking in cars where children are present in Ireland. [3.5.1 Prevention and early diagnosis, and 5.3. Cancer Risk Factors]

UK-England

- Awareness needs to start early. The progression of children through school presents an opportunity to influence lifestyle behaviours, including through children being able to influence their families. Information on healthy lifestyles could be packaged with more tailored content relating to common signs and symptoms of cancer and other conditions. Early awareness would also provide young people with the confidence to make best use of primary care services in later life, for example in how to have constructive conversations about their health. Subject to evaluation of pilots being undertaken by Teenage Cancer Trust and others, NHS England and Public Health England should consider the evidence base for rolling out a cancer education programme to all secondary schools to raise awareness of healthy lifestyles and cancer symptoms. [4.1 Lyfestile and awareness]
- Sixteen per cent of boys and 15% of girls aged 2 to 15 are obese37. The proportion of children who are obese doubles while they are at primary school. Less than one in ten are obese when they enter reception class, but by the time they reach year six, nearly one in five are obese. A programme of work should be undertaken to evaluate the curriculum in primary schools and how lifestyle factors and behavioural changes are communicated. [4.3 Obesity and overweight]
- Trabajar con niños y padres la detección precoz del cáncer, como por ejemplo information on healthy lifestyles could be packaged with more tailored content relating to common signs and symptoms of cancer (Ff) [4.1 Lyfestile and awareness].

Spain

- La exposición solar excesiva: la radiación ultravioleta es el carcinógeno más importante en el

desarrollo del melanoma, siendo este factor especialmente relevante en la infancia. [1.4.1. Promoción y protección de la salud]

- No exponer a los bebés al sol. [1.4.1. Promoción y protección de la salud]

- En España en el año 2005, el entonces Ministerio de Sanidad y Consumo, a través de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN), elaboró la Estrategia para la Nutrición, Actividad Física y Prevención de la Obesidad (NAOS), que tiene como finalidad mejorar los hábitos alimentarios e impulsar la práctica regular de la actividad física de todos los ciudadanos, poniendo especial atención en la prevención durante la etapa infantil. [1.4.1. Promoción y protección de la salud]

- En nuestro medio, la vacunación de la hepatitis B está introducida en el calendario de vacunación infantil cuya cobertura se sitúa por encima del 95% de la población. [1.4.1. Promoción y protección de la salud]

- Una prioridad será invertir la tendencia de obesidad en la infancia y en las edades adultas. [1.4.1. Promoción y protección de la salud]

- En las CC.AA. se habrán puesto en marcha las intervenciones, para reducir la exposición pasiva al tabaco, principalmente en grupos más vulnerables como son la población infantil y las gestantes.

Malta

- Early awareness would provide young people with the confidence to make better use of primary care services in later life and to be able to have constructive conversations about their health and therefore the progression of children through school presents an opportunity to influence both the child's as well as his/her family's, lifestyle behaviours.

- These objectives will be reached through: 1. Increasing awareness and concentrating and reinforcing programs aimed at selected vulnerable groups and high risk lifestyles. Selected vulnerable groups will include: i. children; ii. youth and young adults [Reducing growth in the number of cancer cases]

- 1. Preparation and publication of a new Tobacco Control Strategy by the Committee on Smoking and Health to reinforce the activity to maintain and strengthen reductions in: ii. smoking rates in selected high risk groups, such as pregnant women, persons with mental health problems, high risk occupational settings, children and youth. Targeted measurement of the smoking prevalence within these identified high risk vulnerable groups will be planned and conducted. [Reducing growth in the number of cancer cases].

- protection of people from tobacco smoke in public places and work places, and open spaces frequented by children. [Reducing growth in the number of cancer cases].

- iv. continuing to increase awareness on the dangers of passive smoking especially for children and young people. [Reducing growth in the number of cancer cases].

- 1. The consolidation of the HPV vaccination programme. An evaluation of the programme will be performed at the completion of the first 5 years. This will include an exploration of the impact of expanding the program to include male children of the same age cohort of the girls already being invited. [Reducing growth in the number of cancer cases].

- Environmental exposures may be more hazardous during gestation and more in children than in adults and that environmental or occupational exposures during the peri-conception phase and pregnancy may increase the risk of cancer in the offspring (Bailey et al., 2014), (Togawa et al., 2016). [Reducing growth in the number of cancer cases].

- Other environmental contaminants can be found in food and water and these include a wide range of compounds such as pesticides, industrial and household chemicals, metals and pharmaceutical products. Of special concern are chemical contaminants with persistent and bio-accumulative properties, as well as potentially endocrine disrupting properties as these can modify the hormonal and homeostatic systems and have consequently been related with an array of diseases and disorders. These chemicals are often found in plastics, textiles, cosmetics, dyes, children's toys and baby-care products, lubricants, pesticides, electronic goods and food packaging. [Reducing growth in the number of cancer cases].

- 1. Design, support and conduct ongoing campaigns aimed at and adapted to various sectors of the population (policy makers, health care workers, local councils, general population, children and specific workers' groups) to increase awareness on many common environmental carcinogens and to inform and influence community and individual interventions to help reduce levels of contamination and minimise exposure. [Reducing growth in the number of cancer cases].

Sweden

- The anticipated increase in malignant skin changes is cause for concern particularly in view of the poor prognosis for malignant mela- noma. This trend is related to the fact that people, principally children and young people, are being exposed to the sun to an in- creased extent. Early diagnosis and check-ups where there is a risk of relapse are very important. [Primary prevention]
- Smoking is the single greatest cause of disease and premature death in Sweden. The Government has adopted a number of inte- rim targets to reduce tobacco use by 2014: a tobacco-free start in life, halving of the number of young people who start to smoke or take snuff before the age of 18, halving of the proportion of smokers among the groups that smoke most and a situation where no one will be involuntarily exposed to smoke. [Primary prevention]

Belgium

- Passive smoking is a real problem, especially for children. On this basis, the ban on smoking in public places (administrations, stations, airports, etc.) was decreed and confirmed by a law passed in 2006. [Action 1 : Refund of consultations geared towards the cessation of tobacco use]

Estonia

- Sub-goal 1. Raised consciousness among the population about avoidable cancer risks that is expressed in persistantly positive changes in population's health behaviour. The indicator of effectiveness: the percentage of children smoking once a week or more often reduces to 20% among boys and 16% among girls. [3. Cancer prevention]
- Ultraviolet radiation is major risk factor in the genesis of skin cancer as well as melanoma. The standardised incidence rate of skin cancer in Europe is 30-100 cases per 100,000 residents. The standardised incidence rate of melanoma in Europe is 5-15 cases per 100,000 residents. Total skin cancer incidence among white population during last 50 years shows rapid increase. In Estonia however one of the concerning issues is the constant increase in skin melanoma (figure 2, 3). The cause could be prevailingly immoderate sunbathing both in child- as well as in adulthood. The most effective prevention method in this field is to enlarge the population awareness of the effects of ultraviolet radiation and to amend certain attitude, which also includes parents protective behaviour towards their children. [3. Cancer prevention]

France

- Mener une action spécifique de prévention à l'initiation tabagique auprès des adolescents et les jeunes adultes ayant eu un cancer pédiatrique. [Objectif 8 : Réduire les risques de séquelles et de second cancer]

Austria

- Um den betroffenen Kindern und Jugendlichen beste Chancen auf Heilung zu ermöglichen, muss die Diagnose so schnell wie möglich gestellt werden. Dies erfordert einerseits das Bewusstsein in der Öffentlichkeit und das Wissen der Kinder- und Hausärztinnen und -ärzte, dass junge Menschen derartige Erkrankungen erleiden können, andererseits die Kenntnis der Symptome und Beschwerden dieser Erkrankungen, um den Zeitraum zwischen ersten Symptomen und Behandlungsbeginn möglichst gering zu halten. [6. Spezifische Aspekte für die Zielgruppe der Kinder und Jugendlichen].

13. Patient and family needs

Italy

- Le attività cliniche sono inoltre supportate ed integrate da uno staff che include assistente sociale, insegnanti di scuola materna, primaria e secondaria, educatori, intrattenitori e volontari. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico]
- La presa in carico del malato pediatrico oncologico, attualmente svolta nei vari Centri di Emato-Oncologia Pediatrica, presuppone anche la presa in carico della famiglia e delle relative necessità - di cui non si fa carico l'ospedale - che invece si appoggia alle varie Associazioni di Genitori che collaborano in modo fattivo con i vari centri di onco-ematologia presenti sul territorio italiano. Grazie a questa collaborazione sono stati istituiti le strategie per le cure palliative, lo sviluppo della terapia del dolore, lo sviluppo della psico-oncologia e la riabilitazione, compresa la psicomotricità dei più piccoli. Tutto ciò è stato possibile grazie alla integrazione che le organizzazioni no profit - in particolar modo le Associazioni dei Genitori - hanno realizzato con i vari centri di eccellenza per la cura dei tumori infantili, esistenti in Italia. [3.4.2 Ottimizzazione dei percorsi di cura per il paziente pediatrico oncologico]
- Implementazione dei protocolli di follow-up in modo da favorire il re-ingresso sociale, scolastico e professionale dell'ex-paziente pediatrico oncologico, considerando come interlocutore privilegiato le associazioni di genitori. [Primary prevention]

Netherlands

- …partners, parents and children can experience highly unpleasant emotional reperscussions. Each will have their own individual problems, which require appropriately tailored care [2.6 Patient education and psychosocial care].

UK-England

- Consider whether paediatric treatment centres should be reconfigured to provide a better integrated network of care for patients and families.

Spain

Globalmente, el adolescente con cáncer plantea una serie de problemas específicos derivados del hecho de estar gravemente enfermo en la época de la vida en la que el ser humano más lucha por su independencia y autonomía. El adolescente es, en esta situación, más dependiente de sus padres y la enfermedad es un frenazo a sus aspiraciones vitales (intelectuales, deportivas y sociales).

- Las familias de los niños que fallecen debido a un cáncer infantil deben recibir atención y seguimiento psicosocial. Los protocolos de diagnóstico y tratamiento deben cumplir criterios bioéticos y se adaptan a la ley de protección del menor vigente en España y a los derechos del niño. [Recomendaciones; 2.4. Asistencia a la infancia y adolescencia]
- Son bien conocidas las secuelas del tratamiento del cáncer en el niño: muerte temprana, tumores secundarios, secuelas orgánicas (cardíacas, pulmonares, endocrinológicas, neurológicas), psicológicas y sociales (dificultad para encontrar un empleo o para hacerse un seguro de vida o de enfermedad). En definitiva, secuelas que pueden derivar en una calidad de vida inferior a la de sus congéneres que no estuvieron enfermos. [1.3.4. Tumores infantiles]

Malta

- iv. social care aspects (including continuous education during treatment)
- 4. Address the special needs of young cancer patients and cancer survivors, in particular through the involvement and education of their parents and through the elaboration of careful survivorship plans that address the social, educational and long-term implications of surviving cancer from a young age. Advocacy with relevant stakeholders such as employment and social security services requires renewed impetus.

Belgium

- Creation of a new item in the nomenclature for a long consultation that gives the doctor time to break the news to the patient. An appropriate time will be allocated for consultations involving children. [Action 7: Specific support for patients when diagnosed with cancer]
- To allow parents who have a child who is suffering from cancer to receive assistance and support

either to be with their children (parents' house close to the hospital where their child is staying) or to have a short break to recharge their batteries so that they can have the energy to take care of their child. Within the framework of a call for projects: to fund specific projects that provide support and help for parents and children who are dealing with an illness, such as a "respite home", the aim being to allow children to get out of hospital for a few weeks (4 weeks a year) or to give parents a short break. [Action 21: Support for parents of children with cancer]

- To allow people who have been diagnosed with cancer and their families to receive psychological support either individually or in a group (counselling group, etc.) and especially when the patient leaves hospital and finds himself alone or alone with his family. There is a need for places to meet, talk and listen. Parents of children suffering from cancer often need to express all the emotional burden and the psychological distress that is caused by caring for a sick child and facing the possibility of the loss of a child. It is a time of intense solitude and distress when they need a lot of support to avoid even more serious psychological or psychopathological disorders. Within the framework of a call for projects: funding for psychological support or patient care projects (adults, teenagers or children) and/or for families of patients, either within hospitals or projects supported by associations who assist patients and families of patients with cancer. [Action 22: Access to psychological support or participation in counselling groups or support activities]

- Improving ways to reconcile the parent's professional life and cancer. It would be interesting to review the current duration of leave for medical assistance to allow the parents of children suffering from serious illnesses such as cancer to be able to take care of their child for an extended period of time without losing too much income. [Action 26: Actions to be taken in consultation with the ministers competent at Federal level]

Austria

- 6.1 Operatives Ziel: Bedarfsorientiertes Bereitstellen einer familienorientierten stationären Rehabilitation

Eine lebensbedrohliche Erkrankung im Kindes- und Jugendalter belastet nicht nur das Kind / den Jugendlichen, sondern das gesamte familiäre Umfeld. In der familienorientierten stationären Rehabilitation/Nachsorge wird nach Abschluss der intensiven Behandlungsphase neben dem erkrankten Kind die gesamte Familie in die Rehabilitationsmaßnahmen einbezogen. Durch die gleichzeitige Therapie des primär erkrankten Kindes und dessen Familienmitgliedern können wichtige Synergieeffekte erzielt werden.

- Neben kinderonkologisch tätigen Ärzten/Ärztinnen und dem onkologisch geschulten Kinderpflegepersonal, Psychologinnen/Psychologen und Psychotherapeutinnen/-therapeuten besteht Bedarf an Kindergartenpädagoginnen/-pädagogen, Lehrerinnen/Lehrern, Physio- und Ergotherapeutinnen und -therapeuten und Sozialarbeiterinnen/ -arbeitern. Die Möglichkeit eines integrierten Schulunterrichts am Krankenbett, von Heimunterricht und Kontakt über einen speziellen Lehrkörper mit der Stammschule sollte garantiert sein. [6. Spezifische Aspekte für die Zielgruppe der Kinder und Jugendlichen]

France

- Action 2.13: Assurer aux adolescents et jeunes adultes une prise en charge tenant compte de leur spécificité et s'attachant au maintien du lien social. Le but est d'organiser au niveau régional ou interrégional une structuration de la prise en charge spécifique des adolescents et jeunes adultes atteints de cancer, répondant à des objectifs définis dans un cadre national. Ce cadre pourrait comprendre à la fois des critères en matière d'expertise médicale des équipes concernées, mais aussi de réponse à des besoins spécifiques notamment en termes de préservation du lien social. Posant le constat de spécificités réelles de la prise en charge des adolescents et jeunes adultes, plusieurs dispositifs et organisations ont été expérimentés dans le cadre du Plan cancer 2009-2013, visant à assurer une prise en charge coordonnée entre oncologues pédiatres et adultes, et un accompagnement psychologique et social (scolarité, retour à, l'emploi). [Objectif 2 : Garantir la qualité et la sécurité des

prises en charge]
- Action 9.13: Instaurer un « droit à l'oubli ».Étudier entre les différentes parties à la convention AERAS, les conditions permettant, dans l'année 2015, l'instauration d'un « droit à l'oubli », c'est-àdire un délai au-delà duquel les demandeurs d'assurance ayant eu un antécédent de cancer n'auront plus à le déclarer. Ceci concerne en priorité les cancers pédiatriques et avant la fin de l'année 2015 les autres cancers. L'INCa proposera les cancers auxquels la convention devra appliquer cette mesure, sur la base des délais de récidives, des probabilités de survie avec ou sans incapacité et de guérison. À défaut de règlement dans un cadre conventionnel avant la fin de l'année 2015, la mise en oeuvre de ces dispositions será organisée par voie législative. [Objectif 9 : Diminuer l'impact du cancer sur la vie personnelle] (dret a no declarar que han tingut càncer)
- Garantir l'accompagnement global au-delà des soins liés aux cancers et la continuité de vie pour l'enfant et ses proches
Les besoins exprimés concernent à la fois le soutien psychologique, la continuité de scolarité et la fragilité sociale pour l'ensemble de la famille induite par la maladie.
Pour que le cancer ne pénalise pas leur vie future, il est nécessaire de permettre aux enfants et aux adolescents malades de poursuivre leur scolarité et leurs études. Plusieurs dispositifs existent, mais ils paraissent encore mal connus des équipes pédagogiques et parfois difficiles à mettre en place, en particulier dans le secondaire. Ainsi, l'information des familles sur les possibilités d'adaptation de la scolarité en cas de maladie (PAI, APAD, CNED, projet personnalisé de scolarisation, aménagement d'examen, accompagnement lors du cursus universitaire, etc.) sera systématique et remis à l'occasion de la diffusion d'autres documents afférents au fonctionnement de l'établissement par l'école. Dans le cadre des hospitalisations, l'apport du numérique pour maintenir le lien avec l'établissement scolaire sera évalué. Pour les élèves ne pouvant pas fréquenter leur établissement, la gratuité de l'inscription au CNED sera étendue au-delà de 16 ans. Il s'agira également d'informer les étudiants, leur famille, mais aussi la communauté universitaire des conséquences de ce type de pathologie sur le parcours de l'étudiant et des alternatives, adaptations possibles et recours. Pour atténuer les surcoûts pour les familles, il est important de simplifier les procédures et les conditions d'accès aux différents dispositifs d'aide proposés par les MDPH (notamment l'AEEH) pour les adapter aux situations de perte d'autonomie temporaire observées dans le cadre d'une maladie telle que le cancer. Le développement d'hébergement à proximité des lieux de traitements en particulier pour les enfants atteints de cancer ou leur famille sera par ailleurs poursuivi. [Répondre aux besoins des enfants, adolescents et jeunes adultes atteints de cancer]
- Mieux préparer et suivre l'enfant et sa famille dans l'après-cancer
La préparation du retour à domicile se fait notamment dans le cadre de la consultation de fin de traitement qui va être formalisée dans le Plan. Cette consultation prépare également le suivi médical de l'après-cancer avec la remise du programme personnalisé de l'après-cancer, dont des formats de type carnet de suivi pour les patients seront expérimentés. Les patients traités pour un cancer dans leur enfance/adolescence doivent notamment pouvoir bénéficier d'un suivi adapté tout au long de leur parcours de vie notamment dans la perspective d'anticiper et suivre les effets secondaires éventuels des traitements et bénéficier d'un accompagnement psychologique si nécessaire.
Les actions de recherche clinique ou fondamentale visant à améliorer la connaissance des mécanismes et la prévention des séquelles après traitement du cancer seront soutenues. Des enquêtes observationnelles sur les séquelles seront lancées. Mieux préparer l'après-cancer c'est aussi envisager dès le diagnostic la préservation de la fertilité si nécessaire. L'information sur la fertilité devra être systématique et à ce titre intégrée au dispositif d'annonce. L'organisation des structures permettant la préservation de la fertilité est par ailleurs une action du Plan.
Enfin, le Plan cancer pose le principe du droit à l'oubli, délai au-delà duquel les demandeurs d'assurance ayant un antécédent de cancer n'auront plus à le déclarer. C'est une avancée considérable pour que tous les enfants, adolescents et jeunes adultes guéris de cancer puissent sans entrave

construire leur vied'adulte.
Le Plan cancer misant sur la prévention pour améliorer la santé à venir des populations, de nombreuses actions sont destinées aux enfants et adolescents non malades pour mieux les protéger de certains risques (renforcer la lutte contre l'initiation au tabagisme ou encore limiter les rayonnements ionisants par une substitution des examens d'imagerie concernés). L'éducation à la santé conduite au sein de l'école sera renforcée. Des actions visent aussi à mieux connaître les risques environnementaux pour mieux les prévenir dans le futur. [Répondre aux besoins des enfants, adolescents et jeunes adultes atteints de cancer]

Annex 4. Country codes

COUNTRY	CODE
Austria	AT
Belgium	BE
Czech Rep	CZ
Estonia	EE
France	FR
Germany	DE
Ireland	IE
Italy	IT
Luxembourg	LU
Malta	MT
Netherlands	NL
Portugal	PT
Slovenia	SI
Spain	ES
Sweden	SE
UK-England	UK

Annex 5. List of referenced documents in task 1.2

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