

## PROGRAM OF THE GRELL FROM 4 TILL 6 MAY 2016

### Workshop Programme

Wednesday May 4th

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Registration

8:30

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#### Workshop 1

#### **Study the Social inequalities of health in the field of the cancer in population based studies**

Social inequalities in health exist among most pathologies and specifically in the case of cancers. Social inequalities are produced and worsen throughout the disease process. Differential exposure to risk factors lead to a higher incidence of poor cancer prognosis in the most disadvantaged groups of the population. Lack of awareness about the healthcare system, different perceptions and representations of health and communication difficulties lead to sub-optimal use of healthcare provision which is reflected both by late diagnosis and poorly adapted support.

Population based registries, by their vocation to identify all cancer cases occurring in the population, are fundamental tools to studying social inequalities in health in the field of cancer. Through their approach centered on patients rather than on care, they allow healthcare institutions to take into account patients who tend to remain in the margins of the healthcare system.

For several years the population registers have therefore initiated studies in this area. These studies are distinctive in their use of ecological indicators of disadvantage to define the socio economic status of patients. This approach opens up important perspectives but also imposes constraints both in terms of implementation and interpretation.

This seminar aims to address these problems and to take stock of the current state of analysis and methodological questions.

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**Opening and welcome**

**09:00 - 09:15**

***The constitution of the Social inequalities in cancer,***  
*C Delpierre Inserm UMR1027, Toulouse*

Session «Social inequalities of incidence and mortality cancer»

09:15 - 09 :45

Chairman : G Launoy

#### **Social inequalities in incidence**

Childhood cancer and socioeconomic status of the place of residence at diagnosis in France – Geocap study, 2002-2010. *Fabienne Marquant, Stéphanie Goujon, Laure Faure, Sandra Guissou, Denis Hémon, Brigitte Lacour, Jacqueline Clavel*

*(communication 10' – questions 5')*

**Social inequalities in survival**

May deprivation index explain geographical differences in cancer mortality in Zaragoza ? *Cristina Feja, José-Tomás Alcalá, Carmen Martos, Marc Saez, Rafael Marcos-Gragera, Encarnación Rubio, Mariano Esteban, Luisa Compés, Isabel Aguilar, M<sup>a</sup> José Rabanaque*

(communication 10' – questions 5')

Session « Social inequalities and Cancer : which mechanisms»,

Chairman : Michelle Kelly-Irving (Inserm UMR1027, Toulouse)

09:45 – 11:15

**Social inequalities, biological embodiment and development of a cancer**

Socio-economic status and biological embedding : results from EPIC-Italy. *Raphaële Castagné, Michelle Kelly-Irving, Paolo Vineis, Cyrille Delpierre, Marc Chadeau-Hyam*

(communication 10' – questions 5')

**Social inequalities and screening / diagnosis :**

Individual socio-economic status and breast cancer diagnostic stages : a french case-control study. *Mattéa Orsini, Brigitte Trétarre, Jean-Pierre Daurès, Faïza Bessaoud*

(communication 10' – questions 5')

Health professionals and the early detection of head and neck cancers. *Karine Ligier, Olivier Dejardin, Ludivine Launay, Emmanuel Benoit, Emmanuel Babin, Simona Bara, Bénédicte Lapôtre-Ledoux, Guy Launoy, Anne-Valérie Guizard*

(communication 10' – questions 5')

**Social inequalities and care**

Factors related to non-Hodgkin's lymphoma place of care in France : is there a role of socio-economic status ? *Le Guyader-Peyrou S, Orazio S, Déjardin O, Maynadié M, Troussard X, Monnereau A*

(communication 10' – questions 5')

Exploring social causal pathways for cervical cancer survival in low and middle income settings. *Daniel Jurado, Maria Clara Yopez*

(communication 10' – questions 5')

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**Coffe-break**

**11:15 - 11:45**

Session « Measure of deprivation : individual and/or ecological indicator ? »

Chairman : C Delpierre

11:45 - 13:00

**The EDI indicator for the various countries of the Southern Europe. G Launoy (« Cancers & Préventions» U1086 INSERM-UCBN Caen).**

Cancer and Socioeconomic inequalities in Geneva : area-level or individual indicator ? *R Schaffar, M Usel, I Neyroud-Caspar, E Rapiti*

(communication 10' – questions 5')

Effects of individual and ecologic socio-economic characteristics on breast cancer survival in Umbria : a multilevel model. *Lillini Roberto, Dickman Paul, Crowther Michael, Lambert Paul, Brunori Valerio, Bianconi Fortunato, Vercelli Marina, Stracci Fabrizio*

(communication 10' – questions 5')

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**Lunch**

**13:00 - 14:00**

Session modelling and data analysis 14:00 – 16:00

**Incidence :**

J Bryère («Cancers & Préventions» U1086 INSERM-UCBN Caen)  
Problems posed by the analysis of the incidence with ecological indicators

*(communication 30' –  
questions 10')*

**Survival :**

R Giorgi (SESSTIM UMR912 INSERM/IRD/AMU, Marseille) Analysis of excess mortality in the absence of additional life table variables by sub-groups

*(communication 30' –  
questions 10')*

**Care :**

Models of causality B Rachet (LSHTM Londres)

*(communication 30' –  
questions 10')*

General discussion and international collaborative Projects about this topic

16:00 - 17:00

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**Welcome cocktail : ALBI city hall**

**19:00**

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**Workshop 2**

**Séminaire de formation Francim à l'enregistrement  
des tumeurs hématologiques**

**Public** : Responsables de registres, techniciens d'enregistrement

**Après Midi 14:00-18:00 : atelier - Classifications hématologiques**

Pr M Maynadié (Dijon),

Pr Xavier Troussard (Caen),

Dr A Monnereau (Bordeaux).

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**Welcome cocktail : ALBI city hall**

**19:00**

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## Thursday May 5th

<b>Registration</b>	<b>08:30 - 09:00</b>
<b>Opening and welcome</b>	09:00 - 09:15
<b>Lecture about Social Inequalities and Cancer</b> Synthesis of Workshop (C Delpierre)	30'
<u>Session 1 Quality Data</u> Chairmans : E Crocetti (I), A Monnereau (F)	09:45 - 11:15
<b>A possible contribution to the quality evaluation of cancer registry data may come from the benford's mathematical law</b> <i>Emanuele Crocetti, Giorgia Randi, Tadek Dyba, Raquel Carvalho, Francesco Giusti, Carmen Martos, Roisin Rooney, Manola Bettio</i>	(communication 10' – questions 5')
<b>How Mantle Cell Lymphoma patients included in LYSA group clinical trials are selected compared to population-based study</b> <i>Alix Augustin, Steven LeGouill, Remy Gressin, Alain Monnereau, Xavier Troussard, Anne-sophie Woronoff, Marc Colonna, Brigitte Trétarre, Aurélie Bertaut, Marc Maynadie for the LYSA group</i>	(communication 10' – questions 5')
<b>Optimisation of malignant mesothelioma registration at the belgian cancer registry</b> <i>Michael Roskamp, Harlinde De Schutter, Mia Slabbaert, Kris Henau, Marleen Praet, Liesbet Van Eycken</i>	(communication 10' – questions 5')
<b>Building a common data quality-checking software tool : learning from the european population-based cancer registries</b> <i>Carmen Martos, Giorgia Randi, Francesco Giusti, Emanuele Crocetti, Tadek Dyba, Lydia Voti, Roisin Rooney, Raquel Carvalho, Nicholas Nicholson, Manola Bettio</i>	(communication 10' – questions 5')
<b>Evaluation of complementarity of the clinical and pathological data flow at the Belgian Cancer Registry.</b> <i>Frédéric Calay, Mia Slabbaert, Kris Henau, Julie Francart, Liesbet Van Eycken</i>	(communication 10' – questions 5')
<b>Illustration of an integrative approach of data in a general cancer registry for the assessment of patients care trajectories</b> <i>G. Defossez, A. Quillet, I. Ingrand, P. Ingrand</i>	(communication 10' – questions 5')
<b>Coffe-break and posters</b>	<b>11:15 - 11:45</b>
<u>Session 2 Survival studies</u> Chairmans : T Matsuda(J), MJ Michelena(E)	11:45 - 13:00
<b>Trends in net survival from oral and oropharynx cancers in the north region of Portugal : 2000-2009</b> <i>Luís Antunes, Luís Silva Monteiro, Saman Warnakulasuriya, Maria José Bento</i>	(communication 10' – questions 5')

**Geographical differences in survival of multiple myeloma in three different french areas** (communication 10' – questions 5')

*Sophie Gauthier, Morgane Mounier, Sandra Le Guyader-Peyrou, Edouard Cornet, Stéphanie Girard, Alain Monnereau, Xavier Troussard, Marc Maynadié*

**Malignant pleural mesothelioma long-term survivors : a population based study (LUME study)** (communication 10' – questions 5')

*L. Botta, A. Trama, C. Proto2, D. Signorelli, M.C. Garassino, R. Capocaccia, G. Gatta*

**Some practical advices when using cure models in the net survival framework** (communication 10' – questions 5')

*Olayidé Boussari, Morgane Mounier, Laurent Remontet, Nadine Bossard, Gaëlle Romain, Marc Colonna, Valérie Jooste*

**Survival of European adolescents and young adults diagnosed with cancer in 2000-07 : latest EURO CARE-5 results** (communication 10' – questions 5')

*Annalisa Trama, Laura Botta, Roberto Foschi, Andrea Ferrari, Charles Stiller, Emmanuel Desandes, Milena Maria Maule, Franco Merletti, Gemma Gatta*

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**Lunch** **13:00 - 14:00**

**Coffe-break and posters** **14:00 - 14:30**

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Session 3a Collaboratives studies 14:30 - 15:45

Chairmans : J Faivre(F), M Fusco (I)

**Enhancing cancer data to improve care of patients with pancreatic cancer : a proposal of a European collaborative project** (communication 10' – questions 5')

*Carmen Marto, Núria Malats, María Dolores Chirlaque, María José Sánchez, Eva Ardanaz, Rafael Marcos-Gragera, Carmen Alberich, Ester Molina, Manola Bettio, Alfredo Carrato*

**Trends in survival from ovarian cancer in six European Latin countries : results from the SUDCAN population-based study** (communication 10' – questions 5')

*María-Dolores Chirlaque, Zoe Uhry, Diego Salmerón, María-Isabel Sánchez-Zapata, Gian-Franco Zanonni, Carmen Navarro*

**Participation of the European population-based cancer registries in the ENCR-JRC Project** (communication 10' – questions 5')

*Giorgia Randi, Carmen Martos, Emanuele Crocetti, Tadek Dyba, Lydia Voti, Francesco Giusti, Roisin Rooney, Raquel Carvalho, Manola Bettio, Alexander Katalinic (on behalf of the ENCR-SC)*

Session 3b Stage

**Set up of a routinely registration of stage of breast and colorectal cancer in French cancer registries** (communication 10' – questions 5')

*Tretarre B, Delafosse P, Molinié F, Marrer E, Bouvier AM FRANCIM Stage and Quality Group*

**Stage at diagnosis and stage-specific cancer survival in Latin-language countries world-wide** (communication 10' – questions 5')

*Claudia Allemani, Audrey Bonaventure, Helena Carreira, Veronica Di Carlo, Rhea Harewood, Jérémie Jégu, Melissa Matz, Maja Niksič, Devon Spika, Michel P Coleman and Concord WG*

<b>Coffe break and posters</b>	<b>15:45 - 16:15</b>
<u>Session 4 Others topics</u>	16:15 - 17:15
Chairmans : J Calceran (E), J Francart (B)	
<b>Impact of screening programme on incidence of colorectal cancer : a cohort study in Italy</b>	(communication 10' – questions 5')
<i>Silvia Mancini, Massimo Vicentini, Paolo Giorgi Rossi, Lucia Mangone , Orietta Giuliani<sup>1</sup>, Rosa Vattiato, Maria Michiara, Carlo Alberto Goldoni, Stefano Ferretti, Fabio Falcini<sup>1</sup> and Colorectal Cancer Screening Working Group</i>	
<b>Overdiagnosis associated with breast cancer screening : a simulation study to compare lead-time adjustment methods</b>	(communication 10' – questions 5')
<i>Arnaud Seigneurin, José Labarère, Stephen Duffy, Marc Colonna</i>	
<b>Estimating cancer costs by using cancer registry and administrative data at individual level</b>	(communication 10' – questions 5')
<i>Silvia Francisci, Anna Gigli, Stefano Guzzinati, Susanna Busco, Daniela Pierannunzio, Sandra Mallone</i>	
<b>Cancer registries: how much do we cost to the taxpayers ?</b>	(communication 10' – questions 5')
<i>Lidia Sacchetto, Stefano Rosso, and Roberto Zanetti</i>	
<b>GRELL Board meeting</b>	<b>17:15 - 18:30</b>
<b>Albi Cathedral Visit</b>	<b>19:30</b>
<b>Gala Dinner</b>	<b>20:30</b>

## Friday May 6th

### Session 5 : pediatric cancers

9:00 – 10:30

Chairmans : I Konzelmann (S), B Lacour (F)

#### **Childhood cancer in the central region of Portugal between 2000 and 2009 : incidence and survival**

(communication 10' – questions 5')

*Joana Bastos, Branca Carrito, Manuel António Silva*

#### **Survival of solid tumours (except cns) in spanish children. A collaborative study of the Spanish cancer registries**

(communication 10' – questions 5')

*Eva Ardanaz, Nerea Larrañaga, M<sup>a</sup> José Sánchez , Saray Felipe , Rafael Peris-Bonet and Spanish Childhood Cancer Epidemiology Working Group*

#### **Cancer incidence rates and trends among children and adolescents in Piedmont, 1967-2011**

(communication 10' – questions 5')

*Elena Isaevska, Milena Manasievska, Daniela Alessi, Maria Luisa Mosso, Carlotta Sacerdote, Benedetto Terracini, Franco Merletti, Carlotta Buzzoni, Milena Maule*

#### **Space-time variations of childhood cancer incidence in France 2000-2011**

(communication 10' – questions 5')

*Stéphanie Goujon, Evangelia Kyrimi, Maelle Meurant, Marina Tilly, Laure Faure, Sandra Guissou, Brigitte Lacour, Jacqueline Clavel*

#### **Childhood cancer survival in the GRELL Regions**

(communication 10' – questions 5')

*Gemma Gatta, Rafael Peris Bonet, Laura Botta, Riccardo Capocaccia, Ana Miranda, Gabriela Caldas, Tomás Acha and the EURO CARE Working group*

#### **Survival from acute lymphoblastic leukaemia in children : global trends and effect of sex and age - the concord-2 study**

(communication 10' – questions 5')

*Audrey Bonaventure, Rhea Harewood, Devon Spika, Helena Carreira, Michel P Coleman, Claudia Allemani, on behalf of the CONCORD Working Group*

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### **Coffe break and posters**

**10:30 - 11:30**

### Session 6 : Quality of Care

11:30 - 13:00

Chairmans : Ph Houyau (F), A Miranda (P)

#### **Differentiated thyroid cancer in Belgium : a population-based study on pre-, per-, and post-surgical approach**

(communication 10' – questions 5')

*Harlinde De Schutter, Nathalie Elaut, Bérengère Snyers, Julie Francart, Annick Van den Bruel, Brigitte Decallonne .*

#### **Latin language European cancer registries and their role in the assessment of quality assurance in breast cancer care**

(communication 10' – questions 5')

*Luciana Neamtiu, Zuleika Saz-Parkinson, Asli Uluturk, Silvia Deandrea, Liisa Pylkkanen, Anke Bramesfeld, Donata Lerda*



**Increasing adherence to standard care for early stage breast cancer in Navarra**

*Marcela Guevara, Jorge Díaz-González, Rosana Burgui, Erkuden San Román, M<sup>a</sup> Josefa Urbina, Conchi Moreno-Iribas, Concepción de Miguel, Alicia Córdoba, Esteban Salgado, Eva Ardanaz*

(communication 10' – questions 5')

**Completeness of the examination of cancer cases in a multidisciplinary team meeting**

*G Tournaire, Ch Lagadic, Je Goddard, P Grosclaude*

(communication 10' – questions 5')

**Delay in care management for haematological malignancies in cote d'or department, France**

*Morgane Mounier, Stéphanie Girard-Boulanger, Sophie Gauthier, Oliver Dejardin, Valérie Jooste, Aurélie Bertaut, Guy Launoy, Patrick Arveux, Anne-Marie Bouvier, Marc Maynadié*

(communication 10' – questions 5')

**Management and prognosis for pancreatic cancers in the reggio emilia high resolution cancer registry, according to stage**

*Cassetti, Sant, Minicozzi, Bonfarnuzzo, Vicentini, Mangone, Giorgi Rossi, Sassatelli*

(communication 10' – questions 5')

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**Lunch**

**13:00 - 14:00**

**Coffe-break and posters**

**14:00 - 14:30**

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**Session 7 : Incidence**

**14:30 - 16:00**

Chairmans : M Colonna (F), S Couffignal (L)

**Trends in tobacco-related cancers in Tarragona, Catalonia, Spain (1982-2011)**

(communication 10' – questions 5')

*Jàmnica Bigorra, Alberto Amejjide, Marià Carulla, Araceli Jiménez, Laia Llauradó, Fina Rion, Xavier Cardó, Xavier Collado, Joan Borrás, Jaume Galceran.*

**French Incidence Trends for Human Papilloma Virus Related and Unrelated Head and Neck Cancers : a population-based study**

(communication 10' – questions 5')

*Karine Jehannin-Ligier, Aurélien Belot, Anne-Valérie Guizard, Nadine Bossard, Guy Launoy, Zoé Urhy and the FRANCIM network*

**Basal cell carcinoma incidence trends in two departments of the north-east of france : a population-based study**

(communication 10' – questions 5')

*Émilie Marrer, Évelyne Fournier, Anne-Sophie Woronoff*

**The burden of rare cancers in Italy : the Italian association of cancer registries (AIRTUM) experience**

(communication 10' – questions 5')

*Carlotta Buzzoni, Susanna Busco, Sandra Mallone, Annalisa Trama, And AIRTUM WG*

**Trends in the incidence and net survival of Hodgkin Lymphoma (HL) based on histologic subtype : 1994-2010**

(communication 10' – questions 5')

*Orazio S, Lafia M, Maynadié M, Troussard X, Uhry Z, Monnereau A, FRANCIM*

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**Enrico Anglesio prize, award ceremony Poster prize**

**15:45 - 16:15**

**Presentation of the next GRELL meeting**

**16:15**

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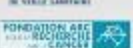
# 41<sup>ena</sup> Amassada del GRELL



Grop per l'epidemiologia e l'enregistrament del càncer dins los païses de lenga latina

# ALBI

4-5-6  
MAI  
2016





# PROGRAM OF THE GRELL FROM 4 TILL 6 MAY 2016

## Workshop Programme

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### Workshop 1

In association with the cancéropole GSO

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This seminar aims to address these problems and to take stock of the current state of analysis and methodological questions.

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**Opening and welcome**

**09:00 - 09:15**

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09:15 - 09:45

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### **Coffe-break**

**11:15 - 11:45**

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Chairman : C Delpierre

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The EDI indicator for the various countries of the Southern Europe. G Launoy (« Cancers & Préventions» U1086 INSERM-UCBN Caen).

(communication 20' – questions 10')

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Models of causality B Rachet (LSHTM Londres)

*(communication 30' –  
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General discussion and international collaborative Projects about this topic

16:00 - 17:00

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**Welcome cocktail : ALBI city hall**

**19:00**

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## Workshop 2

En association avec le réseau Francim

### Séminaire de formation Francim à l'enregistrement des tumeurs hématologiques

**Public :** Responsables de registres, techniciens d'enregistrement

#### **Après Midi 14:00-18:00 : atelier - Classifications hématologiques**

Pr M Maynadié (Dijon),

Pr Xavier Troussard (Caen),

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**Lunch** **13:00 - 14:00**

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Session 3a Collaboratives studies 14:30 - 15:45  
Chairmans : J Faivre(F), M Fusco (I)

**Enhancing cancer data to improve care of patients with pancreatic cancer : a proposal of a European collaborative project** (communication 10' – questions 5')

*Carmen Marto, Núria Malats, María Dolores Chirlaque, María José Sánchez, Eva Ardanaz, Rafael Marcos-Gragera, Carmen Alberich, Ester Molina, Manola Bettio, Alfredo Carrato*

**Trends in survival from ovarian cancer in six European Latin countries : results from the SUDCAN population-based study** (communication 10' – questions 5')

*María-Dolores Chirlaque, Zoe Uhry, Diego Salmerón, María-Isabel Sánchez-Zapata, Gian-Franco Zanonni, Carmen Navarro*

**Participation of the European population-based cancer registries in the ENCR-JRC Project** (communication 10' – questions 5')

*Giorgia Randi, Carmen Martos, Emanuele Crocetti, Tadek Dyba, Lydia Voti, Francesco Giusti, Roisin Rooney, Raquel Carvalho, Manola Bettio, Alexander Katalinic (on behalf of the ENCR-SC)*

Session 3b Stage

**Set up of a routinely registration of stage of breast and colorectal cancer in French cancer registries** (communication 10' – questions 5')

*Tretarre B, Delafosse P, Molinié F, Marrer E, Bouvier AM FRANCIM Stage and Quality Group*

**Stage at diagnosis and stage-specific cancer survival in Latin-language countries world-wide** (communication 10' – questions 5')

*Claudia Allemani, Audrey Bonaventure, Helena Carreira, Veronica Di Carlo, Rhea Harewood, Jérémie Jégu, Melissa Matz, Maja Niksič, Devon Spika, Michel P Coleman and CONCORD Working Group*

<b>Coffe break and posters</b>	<b>15:45 - 16:15</b>
<u>Session 4 Others topics</u> Chairmans : J Calceran (E), J Francart (B)	16:15 - 17:15
<b>Impact of screening programme on incidence of colorectal cancer : a cohort study in Italy</b> <i>Silvia Mancini, Massimo Vicentini, Paolo Giorgi Rossi, Lucia Mangone , Orietta Giuliani<sup>1</sup>, Rosa Vattiato, Maria Michiara, Carlo Alberto Goldoni, Stefano Ferretti, Fabio Falcini<sup>1</sup> and Colorectal Cancer Screening Working Group</i>	(communication 10' – questions 5')
<b>Overdiagnosis associated with breast cancer screening : a simulation study to compare lead-time adjustment methods</b> <i>Arnaud Seigneurin, José Labarère, Stephen Duffy, Marc Colonna</i>	(communication 10' – questions 5')
<b>Estimating cancer costs by using cancer registry and administrative data at individual level</b> <i>Silvia Francisci, Anna Gigli, Stefano Guzzinati, Susanna Busco, Daniela Pierannunzio, Sandra Mallone</i>	(communication 10' – questions 5')
<b>Cancer registries: how much do we cost to the taxpayers ?</b> <i>Lidia Sacchetto, Stefano Rosso, and Roberto Zanetti</i>	(communication 10' – questions 5')
<b>GRELL Board meeting</b>	<b>17:15 - 18:30</b>
<b>Albi Cathedral Visit</b>	<b>19:30</b>
<b>Gala Dinner</b>	<b>20:30</b>

## Friday May 6th

### Session 5 : pediatric cancers

9:00 – 10:30

Chairmans : I Konzelmann (S), B Lacour (F)

#### **Childhood cancer in the central region of Portugal between 2000 and 2009 : incidence and survival**

(communication 10' – questions 5')

*Joana Bastos, Branca Carrito, Manuel António Silva*

#### **Survival of solid tumours (except cns) in spanish children. A collaborative study of the Spanish cancer registries**

(communication 10' – questions 5')

*Eva Ardanaz, Nerea Larrañaga, M<sup>a</sup> José Sánchez , Saray Felipe , Rafael Peris-Bonet and Spanish Childhood Cancer Epidemiology Working Group*

#### **Cancer incidence rates and trends among children and adolescents in Piedmont, 1967-2011**

(communication 10' – questions 5')

*Elena Isaevska, Milena Manasievska, Daniela Alessi, Maria Luisa Mosso, Carlotta Sacerdote, Benedetto Terracini, Franco Merletti, Carlotta Buzzoni, Milena Maule*

#### **Space-time variations of childhood cancer incidence in France 2000-2011**

(communication 10' – questions 5')

*Stéphanie Goujon, Evangelia Kyrimi, Maelle Meurant, Marina Tilly, Laure Faure, Sandra Guissou, Brigitte Lacour, Jacqueline Clavel*

#### **Childhood cancer survival in the GRELL Regions**

(communication 10' – questions 5')

*Gemma Gatta, Rafael Peris Bonet, Laura Botta, Riccardo Capocaccia, Ana Miranda, Gabriela Caldas, Tomás Acha and the EURO CARE Working group*

#### **Survival from acute lymphoblastic leukaemia in children : global trends and effect of sex and age - the CONCORD-2 study**

(communication 10' – questions 5')

*Audrey Bonaventure, Rhea Harewood, Devon Spika, Helena Carreira, Michel P Coleman, Claudia Allemani, on behalf of the CONCORD Working Group*

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### **Coffe break and posters**

**10:30 - 11:30**

### Session 6 : Quality of Care

11:30 - 13:00

Chairmans : Ph Houyau (F), A Miranda (P)

#### **Differentiated thyroid cancer in Belgium : a population-based study on pre-, per-, and post-surgical approach**

(communication 10' – questions 5')

*Harlinde De Schutter, Nathalie Elaut, Bérengère Snyers, Julie Francart, Annick Van den Bruel, Brigitte Decallonne .*

#### **Latin language European cancer registries and their role in the assessment of quality assurance in breast cancer care**

(communication 10' – questions 5')

*Luciana Neamtiu, Zuleika Saz-Parkinson, Asli Uluturk, Silvia Deandrea, Liisa Pylkkanen, Anke Bramesfeld, Donata Lerda*

<b>Increasing adherence to standard care for early stage breast cancer in Navarra</b> <i>Marcela Guevara, Jorge Díaz-González, Rosana Burgui, Erkuden San Román, M<sup>a</sup> Josefa Urbina, Conchi Moreno-Iribas, Concepción de Miguel, Alicia Córdoba, Esteban Salgado, Eva Ardanaz</i>	(communication 10' – questions 5')
<b>Completeness of the examination of cancer cases in a multidisciplinary team meeting</b> <i>G Tournaire, Ch Lagadic, Je Goddard, P Grosclaude</i>	(communication 10' – questions 5')
<b>Delay in care management for haematological malignancies in cote d'or department, France</b> <i>Morgane Mounier, Stéphanie Girard-Boulanger, Sophie Gauthier, Oliver Dejardin, Valérie Jooste, Aurélie Bertaut, Guy Launoy, Patrick Arveux, Anne-Marie Bouvier, Marc Maynadié</i>	(communication 10' – questions 5')
<b>Management and prognosis for pancreatic cancers in the reggio emilia high resolution cancer registry, according to stage</b> <i>Cassetti, Sant, Minicozzi, Bonfarnuzzo, Vicentini, Mangone, Giorgi Rossi, Sassatelli</i>	(communication 10' – questions 5')
<b>Lunch</b>	<b>13:00 - 14:00</b>
<b>Coffe-break and posters</b>	<b>14:00 - 14:30</b>
<b>Session 7 : Incidence</b> Chairmans : M Colonna (F), S Couffignal (L)	14:30 - 16:00
<b>Trends in tobacco-related cancers in Tarragona, Catalonia, Spain (1982-2011)</b> <i>Jàmnica Bigorra, Alberto Amejjide, Marià Carulla, Araceli Jiménez, Laia Llauradó, Fina Rion, Xavier Cardó, Xavier Collado, Joan Borrás, Jaume Galceran.</i>	(communication 10' – questions 5')
<b>French Incidence Trends for Human Papilloma Virus Related and Unrelated Head and Neck Cancers : a population-based study</b> <i>Karine Jehannin-Ligier, Aurélien Belot, Anne-Valérie Guizard, Nadine Bossard, Guy Launoy, Zoé Urhy and the FRANCIM network</i>	(communication 10' – questions 5')
<b>Basal cell carcinoma incidence trends in two departments of the north-east of france : a population-based study</b> <i>Émilie Marrer, Évelyne Fournier, Anne-Sophie Woronoff</i>	(communication 10' – questions 5')
<b>The burden of rare cancers in Italy : the Italian association of cancer registries (AIRTUM) experience</b> <i>Carlotta Buzzoni, Susanna Busco, Sandra Mallone, Annalisa Trama, And AIRTUM WG</i>	(communication 10' – questions 5')
<b>Trends in the incidence and net survival of Hodgkin Lymphoma (HL) based on histologic subtype : 1994-2010</b> <i>Orazio S, Lafia M, Maynadié M, Troussard X, Uhry Z, Monnereau A, FRANCIM</i>	(communication 10' – questions 5')
<b>Enrico Anglesio prize, award ceremony Poster prize</b>	<b>15:45 - 16:15</b>
<b>Presentation of the next GRELL meeting</b>	<b>16:15</b>

# ABSTRACTS

# ORAL 1 Quality Data : A possible contribution to the quality evaluation of cancer registry data may come from the benford's mathematical law

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## ABSTRACT

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**Objectives** : According to the Benford's law, the distribution of the occurrences of the first digit (FSD) in many large collections of numbers is not uniform. We evaluated, in a sample of GRELL cancer registries, whether incidence rates followed Bedford's law, as a possible contribution in their quality check process.

**Materials and methods** : Data from six European population-based cancer registries from GRELL countries (Belgium, France, Spain, Italy, Portugal and Switzerland) were retrieved from the Cancer Incidence in 5 Continents-X website. Crude incidence rates were computed for the main cancer groups. The distribution of FSD of incidence rates was computed for the six registries altogether, and separately by registry and sex. The adherence of the observed FSD frequency distributions to the Benford's law was evaluated both graphically and through several statistical tests.

**Results** : All the FSD distributions of incidence rates were positively skewed, as expected for those following Benford's law. The ratios between the frequency of the first and the second digit ranged around Benford's expected value (1.7), as that between the first and the ninth (6.6). The coefficient of correlation was overall high but not always as expected, ranging from 0.82 to 0.99. Also the distance measures from the observed and the expected FSD distribution, although generally small, showed slightly higher values for some registries.

**Discussion and conclusions** : The quality evaluation of cancer data is complex and implies assessing several different dimensions. The FSD distribution of incidence rates, in this GRELL setting, appeared to adhere to the Benford's law. The analyzed data had already been checked and approved for publication in Cancer Incidence in 5 Continents-X. However, some minor deviations from the Benford's distribution may still suggest possible revision or integration of the applied criteria for data validation.

## ORAL 2 Quality Data : How Mantle Cell Lymphoma patients included in LYSA group clinical trials are selected compared to population-based study

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1 Registre des hémopathies malignes de Côte d'Or, EA 4184 Université de Bourgogne, 7 Bd Jeanne d'Arc, 21079 Dijon cedex 2 LYSA Group 3 FRANCIM network 4 Centre Georges François Leclerc, EA 4184, Université de Bourgogne, 1 Rue du Professeur Marion, 21000 Dijon

### ABSTRACT

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**Objectives** : Between 2008 and 2012, newly diagnosed MCL patients aged between 18-65 y-o and over 65 y-o were included in the two unique prospective French multicentre clinical trials: LM manteau 2010 SA (N° NCI 01457144) and Manteau 2007 SJ "LyMa" (N° NCT 00921414) conducted by the LYSA Group. Our purpose was for one of the first time, comparing features of the patients included in clinical trials to those diagnosed in the general population.

**Méthods** : Data of MCL patients diagnosed during the study period were collected in six French areas covered by a cancer registry. 352 cases were compared to 374 MCL included in the two clinical trials. Age distributions at diagnosis were compared by using the non parametric Mann-Whitney-Wilcoxon test and chi<sup>2</sup> test were used to compare qualitative variables.

**Results** : The comparison between cases included in clinical trial and in the general population showed that MCL included in clinical trials were younger (median age 59.8 yrs (27.6 – 83.5) vs 72.6 yrs (41.2 – 97.7) p<0.001). No difference in terms of Ann Arbor stage at diagnosis was observed. Nevertheless we found a significantly higher sex-ratio in clinical trials than in the general population (3.3 vs 2.2). At the time of the present analysis, 22% patients died in the trials versus 43% from cancer registries series (p<0.001) with non difference regarding gender.

**Conclusion** : This study confirms that MCL selected patients for clinical trials are younger. Very surprising and highly questionable was the over representation of male patients, unexplained by the inclusion criteria used. The main strength of this comparison was the nationwide spectrum of the multicenter clinical data used which improve MCL representativeness for comparison with population based registries.



## ORAL 3 Quality Data : Optimisation of malignant mesothelioma registration at the belgian cancer registry

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### AUTHORS

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### AFFILIATION

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### ABSTRACT

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**Objectives** : Malignant mesothelioma (MM, ICD10:C45) is a rare but aggressive cancer mostly caused by asbestos exposure, and for which diagnosis is difficult to make. To assess and enforce completeness and correctness of MM registration at the Belgian cancer registry (BCR), the current study aims to compare information from three independent databases, i.e. the standard cancer registration, the population-based mortality statistics (certificate of death - COD) and the Belgian mesothelioma registry (BMR). A secondary goal is to provide more insights in patient and tumour characteristics of long-term survivors.

**Material and methods** : The study cohort includes all MM/malignant neoplasms of pleura (C45/C38.4) diagnoses reported to BCR (incidence years 2004-2012, n=2,343), all patients reviewed by the pathology commission of BMR (2004-2012, n=2,019), and COD data for all Belgian citizens (2004-2011). All available data are compared for diagnosis and performed immunohistochemical tests. COD data particularly serve for trace-back of missing diagnoses at BCR.

**Results** : Of the 1,635 BMR cases identified in BCR database, 94% of diagnoses are concordant between the two databases. For 21% of MM cases registered at BCR and linked with COD (n=1,597), C45 is not mentioned in COD. Vice versa, 139 patients with a different diagnosis at BCR deceased from MM according to COD. In addition, C45 is mentioned among the causes of death in COD data for 165 cases that remain unknown to BCR.

**Conclusions** : Given the proven feasibility of comparing different population-based data sources, additional in-depth analyses will be performed in order to optimise correctness and completeness of MM registration in Belgium. Discordant diagnoses will be explored in detail and may need a pathology revision. Additional information from COD data is currently used to set-up a trace-back system to recall eventually missing diagnoses. Once agreement on diagnoses is achieved, tumour and patient characteristics of long-term survivors will be studied in detail.

## ORAL 4 Quality Data : Building a common data quality-checking software tool: learning from the european population-based cancer registries

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### Affiliation: AFFILIATION

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European Commission, DG Joint Research Centre (JRC), Institute for Health and Consumer Protection, Public Health Policy Support Unit

### ABSTRACT

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**Objectives** : The Joint Research Centre (JRC) Technical report 'A proposal on Cancer Data Quality Checks: one common procedure for European cancer registries' was prepared by the Working Group on Data Quality Checks. The report provided the basis for the data quality-check software developed by the JRC. This toolkit is being used by the ENCR Secretariat for checking data submitted by European cancer registries (CRs) for the 2015 ENCR-JRC data call. The objective of this study was to evaluate on real data if the reference tables included all the possible data characteristics and combinations of variables to make the software comprehensive and robust enough.

**Methods** : Data from European population-based CRs from GRELL countries applying to the ENCR-JRC project were included in the analysis. The data-call protocol specified the characteristics of the requested variables and the questionnaire provided the information about the process followed by the CRs. The JRC-ENCR software was used to check the internal consistency of the CR data.

**Results** : A total of 44 CRs were included in the study and 3.895.860 cases were analysed. Only 0.4% of the cases needed additional checks. Prior to submitting the data, 91% of the CRs used the IARCtool software, one registry applied the new ENCR-JRC recommendations, and one submitted the data without any check. A low proportion of warning messages were due to missing values for mandatory variables (e.g. 0.5% for the basis of diagnosis), while a greater variability of warning messages was found among registries for topography/morphology combinations.

**Conclusions** : To improve the comparability among European CRs, it is necessary to use a common data quality checklist. The full version of the JRC-ENCR software is currently in the test phase, but will be available for use by all European population-based CRs. New international rules based on the latest findings and the feedback of the CRs should be taken into account in future versions of the software.

## ORAL 5 Quality Data : Evaluation of complementarity of the clinical and pathological data flow at the Belgian Cancer Registry

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### ABSTRACT

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**Objectives :** The Belgian Cancer Registry (BCR) is a national population based registry collecting data from oncological care programs (clinical network) and laboratories for pathological anatomy (pathological network). To ensure the highest quality and completeness of its data, the BCR performs a thorough quality control with validation procedures. In this study we explored the coincidence of notifications by the different networks, a raw indicator of completeness. Investigating the characteristics of tumours only notified by one network, could help to identify tailored actions to enforce the quality of the data.

**Methods :** All notifications of invasive tumours (non-melanoma skin cancer excluded) for incidence years 2004-2013 were included. Cancers registered by the clinical and pathological network (double notification) or by only one of them, were identified and compared according to sex, age, tumour type and geographic location.

**Results :** The number of tumours notified by both networks strongly increased from 49% in 2004 to 80% in 2013. Only a few regional differences have been identified. Haematological malignancies (mainly myeloid malignancies, ALL and CLL), hepatocellular carcinoma and ocular melanoma were frequently notified by the clinicians only; pathologists were less frequently involved in the diagnostic of these tumours. 30% of tumours in children (0-19y) and 17% in the elderly (80+) had no pathological notification nor verification. Skin Melanoma, urothelial and thyroid cancers are more frequently registered by the pathologists only. Registration by both networks was higher for women (82%) than for men (78%), partially due to the high occurrence of double notifications (95%) for breast cancer.

**Conclusion :** Characterizing tumour types notified only by clinicians or more specifically only by pathologists offers data that can be used to set up tailored actions, such as collection of supplementary information by specialist, towards a higher degree of completeness.

# ORAL 6 Quality Data : Illustration of an integrative approach of data in a general cancer registry for the assessment of patients care trajectories

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## AFFILIATION

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## ABSTRACT

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**Introduction :** Enormous amounts of data are produced every year by the health care system but few tools are able today to mobilize and integrate this data for the purpose of describing and modeling a set of care trajectories. The Registry has developed a method for generating a temporal representation of care trajectories over time using the data routinely collected as part of its epidemiological surveillance and research missions.

**Methods :** A tracer events typology was drawn from pathology data (ACP) and hospital discharge (HD) data (ICD-10 diagnostic codes and CCAM medical procedures) continuously supplying the register information system. An algorithmic procedure reproduces the individual care trajectory as a computer-usable chain of characters. Its granularity is defined on the basis of recommendations identified from the French guidelines.

**Results :** The first application was made on breast cancer and served in three evaluation programs:

1 / Analyses of ACP and HD data to monitor waiting times for access to treatment for 1082 patients with non-metastatic breast cancer between 2008 and 2010 (TRAJAN project, INCa funding). 2 / Data exploitation of organized screening management structures (DO) for evaluating the impact of participation in the DO on the diagnosis, treatment and survival at 5 years from 1891 women with breast cancer in 2008 -2009 (IDOC TRAJAN-project, INCa funding).3 / Exploitation of cancer multidisciplinary team meetings to improve completeness rate in 7807 women with breast cancer over the period 2008-2012 (Inca – Onco-Poitou-Charentes Network funding).

**Conclusion :** This approach based on available data is exportable. The operational objectives are directly dependent on the completeness of the registry database and interoperability of its information databases.

## POSTER 7 Quality Data : An Assessment of Data Accuracy in a Population-based Cancer Registry in Algeria Using Data on Thyroid Carcinoma

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### AUTHORS

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### ABSTRACT

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**Objectives** : Over the past three decades, the incidence of thyroid cancer has been rising continuously in much of the developed world, but little is known about thyroid cancer incidence trends in developing countries. We undertook an investigation to assess thyroid cancer incidence trends for the period 1996-2013, using data from the Oran cancer registry in Algeria. There were no detectable trends in the incidence, and we hypothesized that data in the population based cancer registry is not complete. The population-based cancer registry of Oran was established in 1994, and currently covers a population of about 1 600 000 inhabitants. To date, this registry has not been accredited by the International Agency for Research on Cancer. In 2014, we carried out a pilot study to assess data completeness and quality using data on thyroid cancer diagnosed during the period 1996-2013.

**Methods** : Using the independent case ascertainment approach, we re-screened the sources that had been used by the registry, to detect any case missed during the registration process for the period 1996-2013.

**Results** : Overall, our investigation involved 17 departments of surgery, medical oncology, endocrinology and radiotherapy, 11 pathology laboratories, and 5 departments of nuclear medicine. Validation process included pathologic diagnosis of cancer, place of residence at the moment of diagnosis, gender, and management of duplicates. The topography and morphology of the cancers were recorded according to the International Classification of Diseases for Oncology, Third edition (ICD-O-3). Comparison of data collected to the cancer registry existing data included the number of sources re-screened, thyroid cancer number of cases, gender, date of birth, and morphological codes.

**Discussion and conclusions** : Validation process is still underway, and once completed, we will propose a method to ensure that the Oran cancer registry data is complete and valid for the purposes of national and international comparability.

## POSTER 8 Quality Data : Cancer incidence prediction using medico-administrative and registry data. Part 1: Quality of the 2007-2011 predictions

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### ABSTRACT

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**Objectives :** In France, cancer registries only cover 20% of the population. To predict incidence at the district level ("départements"), the use of medico-administrative data (MA) calibrated by the MA/incidence ratio observed in the registries area have proved to be useful in the last decade. The validity of the predictions must be first evaluated in the registries area. This study presents the results of the evaluation of the validity of cancer incidence prediction at the district level over the 2007-2011 period in France for 21 cancer sites, using three MA correlates of incidence.

**Material and methods :** The three MA correlates consisted were hospital discharge data (HDD), health insurance data on Long Duration Diseases (LDD) and an indicator based on linkage between HDD and LDD data (HUL). The calibration relied on the modelling of the MA/incidence ratio observed in the registries area. The validity of each correlate was evaluated in each district in the registries area for the 21 cancer sites. A decision tree enabled to determine if the quality of the predictions made with a given correlate was sufficient to provide district-level prediction.

**Results In men :** 12 cancer sites out of 17 showed sufficient agreement between predicted and observed incidence (11 for LDD and HUL-based predictions, and 5 for HDD-based predictions). In women, accuracies of predictions were sufficient for 13 cancer sites out of 19 (12 for HUL-based predictions, and 8 for HDD and LDD-based predictions).

**Conclusion :** This study confirms the interest of using MA/I ratios to predict incidence at a district level. Compared to the previous evaluation based on LDD and HDD correlates for the 2007-2009 period, the quality of the predictions was deemed sufficient for 5 additional cancer sites. The use of a MA indicator based on linkage between HDD and LDD helped to refine predictions for some cancer sites.

## POSTER 9 Quality Data : Cancer incidence prediction using medico-administrative and registry data Part 2 : What feedback for cancer registries ?

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### ABSTRACT

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**Objectives** : In the field of incidence prediction in areas without registries cancer registries are taken as a gold standard and used (1) to calibrate medico-administrative (MA) correlates of incidence (I) to predict incidence at the district level and (2) to evaluate the quality of the predictions obtained (see part 1). This evaluation is an opportunity to provide a feedback to cancer registries that can inform about local MA recording processes and/or about data collection in the registries.

**Material and methods** : The MA data and the methods used to predict district-incidence in France were presented in part 1. Incidence is predicted using the mean MA/I ratio observed in the registry area. The relative differences (RD) between observed and predicted incidence were plotted in two ways: a plot of the RD by registries (one point per cancer site and sex) and a funnel plot of RD against their precision with confidence bounds. A graphical code indicates if the MA correlate was validated or not to predict incidence. These plots are also provided by cancer site.

**Results** : The graphs provided will be illustrated with several examples issued from the analysis of three MA correlates in France. Examples will represent the diversity of the situations observed in practice.

**Conclusion** : RD are important when there is a strong departure of the MA/I ratio in one district as compared to the mean ratio over the registry area. The proposed graphical representation of the RD allows for a comprehensive overview of the MA/I behaviour and may help to identify atypical pattern and outliers predictions.



## POSTER 10 Quality Data : Individual and contextual factors associated with the occurrence of missing data in large public Health databases

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### ABSTRACT

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**Objective :** Large databases from cancer or screening registries are routinely used by epidemiologist to describe and analyze public health issues. Although those databases are exhaustive, the quality of the records may be impaired because of missing data that can seriously bias the analyses. Moreover, those databases are often built by collecting data from local sources (LS), with varying quality of records. The objective of this study is to propose a statistical method to highlight factors influencing occurrence of missing data, both at the individual level (observation level) and the contextual level (LS level).

**Method :** Hierarchical logistic mixed models were used to explain the occurrence of missing data with individual and contextual variables. The method was used to measure each contribution (LS and individual levels) on the occurrence of missing data. The method is illustrated using the national breast cancer screening database. Missing data patterns of two major variables were studied: breast mammographic density and tumor size of detected cancer.

**Results :** The proportion of missing data of both variables “breast mammographic density” and “tumor size of detected cancer” was highly different from one local source to another. For breast density, contextual factors explained a large part of this variation, whereas individual factors were poorly associated with occurrence of missing data. On the contrary, for tumor size, individual factors were significantly associated with occurrence of missing data, whereas contextual factors were not.

**Conclusion :** The input to large public Health databases are assumed to be to be harmonized by national or international reference guides. However, understanding factors influencing occurrence of missing data is important to improve the quality of data collection and statistical analyses. Such analysis allows a feedback to local sources in order to improve the coding and is a primary step toward building strategies to deal with missing data.

## POSTER 11 Quality Data : Evaluation of an algorithm to identify incident Non-Hodgkin's lymphoma cases using claims databases with cancer registry

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### ABSTRACT

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**Background** : There is a huge increase in the use of medico-administrative databases for research purposes. For this reason, some selection algorithms have been validated with cancer registry data to detect incident cancer cases. However, there is no validated algorithm to identify Non-Hodgkin's Lymphoma (NHL) incident cases. The aim of this study was to assess the validity of diagnosis codes in the PMSI database to identify incident cases of NHL according to results of the Tarn cancer registry.

**Methods** : Between 2011 and 2013, inhabitants of the Tarn department with NHL were identified in the PMSI using diagnosis codes of NHL and chemotherapy. To be defined as incident, NHL patients must have not been recorded with NHL codes between 2008 and the first hospitalization. Characteristics of incident NHL cases were compared to incident NHL cases identified in the Tarn cancer registry, considered as the "gold standard" in this area.

**Results** : Between 2011 and 2013, 256 patients were identified as incident NHL cases using the PMSI versus 243 in the Tarn cancer registry from the same area. Main characteristics (patients' demographics and NHL types) will be compared between these 2 sources.

**Conclusion** : Given these results, identifying incident NHL patients through data collected from the French national health insurance database may be useful to conduct national studies on NHL. It could be considered as an additional tool for the surveillance of NHL incidence. Further analyses will estimate the validity of this algorithm.

## POSTER 12 Quality Data : Completeness of case ascertainment among the elderly in Swiss cancer registration

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### ABSTRACT

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**Objective** : Cancer incidence or survival measures derived from population-based cancer registration data depend strongly on the completeness of case ascertainment, i.e. the extent to which all diagnosed neoplasms in the population resident in a defined area are included in the registry database. Case finding is often more difficult among the elderly, as exemplified by higher DCO proportions. Main objective: to estimate completeness of case ascertainment in Switzerland among elderly cancer patients.

**Material and methods** : This study is based on primary malignant cancer cases abstracted from the National Core Dataset, managed by the National Institute for Cancer Epidemiology and Registration (NICER), with the purpose of national cancer monitoring in Switzerland. We have applied two alternative approaches to assess completeness: (1) the semi-quantitative method of comparing the ratio of mortality and incidence rates with relative survival (MI/Surv-method) and (2) the Flow-method, which provides a quantitative result for the completeness depending on time since diagnosis ;

**Results and discussion** : We have estimated completeness for 21 cancer sites in patients diagnosed at age 70 or higher. The most consistent finding with both methods was potential under-registration of cases for lymphoid leukaemia. This diagnostic group consisted mainly of chronic types of leukaemia. They are often diagnosed in the outpatient setting, which potentially circumvents capture and registration as compared to hospital-based diagnoses. Overall, the completeness of case ascertainment among the elderly was high in Switzerland.

## POSTER 13 Quality Data : Identifying multiple myeloma patients using data from the SNIIRAM and PMSI: validation using the Tarn cancer registry

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### ABSTRACT

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**Objectives** : French health insurance databases are potentially a valuable source for studying multiple myeloma epidemiology. However, the validity of identification of multiple myeloma cases through these databases has not been previously established. This study aimed to assess the performance of three algorithms based on hospital diagnoses from PMSI (Programme de médicalisation des systèmes d'information).

**Methods** : Potential multiple myeloma patients in 2010-2013 were identified in the French health insurance databases using the presence of hospital records (PMSI) with at least one main diagnosis code for multiple myeloma (ICD-10 'C90'). Alternative algorithms also considered related and associated diagnoses. Incident patients were those with no previous 'C90' codes in the past two years (2008-2009). These patients were matched to confirmed cases of multiple myeloma (ICD-O '9732') in the local cancer registry for the corresponding area and period (the Tarn cancer registry). The sensitivity, specificity and positive predictive values (PPV) of the algorithms were then computed, using the cancer registry as the gold standard.

**Results** : From 2010 to 2013, 90 patients were identified using main diagnoses from PMSI data (99 when using main and related diagnoses, and 123 with associated diagnoses). The registry contained 109 matched cases with available hospital data. Sensitivity was 78.0% when using only main hospital diagnoses (specificity 99.6%, PPV 94.4%), 82.6% when considering also related diagnoses (specificity 99.1%, PPV 90.1%), and 98.2% with associated diagnoses included (98.1% specificity, 87.0% PPV).

**Conclusion** : These results revealed that including simultaneously main, related and associated hospital diagnoses increased the sensitivity of the algorithm without generating excess false positives. Further analyses will estimate the performance of these algorithms when combined with long-term conditions.

## POSTER 14 Quality Data : Let's check our answers – comparison of the estimated nationwide cancer incidence and the brut national incidence in Japan

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### ABSTRACT

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**Background** : The Japan Cancer Surveillance Research Group measured brut national cancer incidences in Japan for the first time in order to check the reliability of the estimation method in the past.

**Methods** : Collected data for the year 2012 from all 47 prefectures were organized according to ICD-O-3 codes and logically checked for errors at the National Cancer Center. National cancer incidence estimation was realized according to the method which was employed since 1998 in Japan; arithmetic mean of incidence rates from the registry data of high quality (DCO<10% and M/I≤0.5) was calculated. The correction coefficients based on cancer mortality were applied during the final stage of the estimate to minimize any possible bias caused by the selection of registries.

**Results** : Data quality for the 28 registries were; DCO 5.6% and M/I 0.47. The estimated total number of cancers in Japan in 2012 was 865,238 (all sites C00-97). Age-standardized rate (ASR, world population) was 265.8/100,000. In contrast, the brut total number of cancer was 837,856, and ASR was 253.0. The gap between the estimated incidence and brut incidence was the widest in corpus uteri (9% more in estimation) in breast (8%) and in cervix (7%). In some primary sites, such as in ovary (-5%), in lymphoid leukemia (-2%), in liver (-1%) and in brain and nervous system (-1%), the estimated incidence was lower than the brut incidence.

**Discussion** : The nationwide estimation based on partial cancer registry data showed a certain level of accuracy. However, it was still not enough stable to be used in the comprehensive cancer control; regional variety in incidence and mortality was much wider than we can possibly imagine in Japan. The nationwide estimation is still inevitable practice to control the quality of data even after enactment of the Cancer Registry Promotion Act in 2016. The methodology should be refined to know the true incidence in the country.

## ORAL 15 Survival studies : Trends in net survival from oral and oropharynx cancers in the north region of portugal: 2000-2009

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### ABSTRACT

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**Objectives** : Oral cancer is a major public health problem worldwide. In the last decade there has been an increasing trend for oral cancer in Portuguese population, in both sexes, and especially in the female group. Survival from oral cancer is low and a high proportion of cases are diagnosed in late stages. Our aim was to analyze the trends in net survival of patients with oral cavity and oropharynx cancers in the North Region of Portugal.

**Material and Methods** : Data has been extracted from the North Region Cancer Registry of Portugal for malignant tumours diagnosed in the period 2000-2009. Cancer sites considered included: oral cavity (C01-C06) and oropharynx (C09-C10, C14). Two period of diagnosis were considered: 2000-2004 and 2005-2009. Survival was estimated using the Pohar-Perme estimator.

**Results** : After excluding patients with unknown follow-up or age (2.2%), a total of 2403 cases (82.6% Male) were included. Oral cavity tumours 5-yr survival was 40.5% (CI95%: 37.9-43.1) and for oropharynx cancers it was 26.5% (95%CI 23.2-29.8). Five-year net survival increased ( $p=0.016$ ) between the two periods of diagnosis considered: 34.0% (95%CI: 30.8-37.2) vs. 37.6% (95%CI: 34.9-40.4). However, stratifying by stage of disease at diagnosis, a significant increase in net survival has only been observed for stage II (56.2% to 74.3%) and stage III (31.5% to 46.0%) but not for stage I (74.5% to 75.4%) and stage IV (18.0% to 18.6%). The proportion of patients diagnosed in advanced stages (III/IV) increased over the two periods of diagnosis from 71.2% to 78.4%.

**Discussion and conclusions** : Improvements in net survival over time in intermediate stages were only partially reflected in overall improvements due to the high proportion of cancers with advanced stage at diagnosis. Efforts should be made in the diagnosis phase in order to allow an earlier diagnosis and consequently a better prognosis to patients diagnosed with this type of diseases.

## ORAL 16 Survival studies : Geographical differences in survival of multiple myeloma in three different french areas

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### ABSTRACT

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**Objectives** : Within the past decade, new therapeutic support for multiple myeloma (MM) has improved survival of patients included in clinical trials. The objective of this study was to measure and compare the survival of MM patients in different French areas in the general population.

**Methods** : Patients aged from 18 year-old and over diagnosed with MM (ICD-O-3 codes 9731/3, 9732/3 and 9734/3) between January, 1st 2008 and December, 31st 2009 in the French Hematological Malignancies (HM) registries (Calvados, Côte d'Or and Gironde) were included. The end point of follow-up was January, 1st 2015. Specific clinical information was recorded from clinical charts. Net Survival (NS) and Progression Free Survival (PFS) considering relapse and progression were analyzed respectively using the non-parametric Pohar-Perme and Kaplan-Meier estimators. The PFS between areas were compared using the log-rank-test.

**Results** : A total of 346 patients (51% of women) were diagnosed during the period in the three registries. The sex ratio (0.96), the median age (74 year-old), the age group repartition and the rate of treated patients were similar between the three areas. By contrast, significant differences were found for the ISS score (score 3: 19%, 33% and 41%;  $p=0.014$ ), the first line therapy regimen (i.e. autologous transplantation in 52%, 21% and 13%;  $p<0.001$ ) and the inclusion rate in clinical trials (34%, 5% and 7%;  $p<0.001$ ). Subsequently, geographical differences were found in the 5-y NS (64%, 46% and 42%) and in the PFS (32%, 18% and 20% ;  $p=0.01$ ).

**Conclusion** : This study emphasizes discrepancies in patients with MM in France: in the North part of the country, patients were diagnosed at a more advanced stage, were less included in clinical trials and benefit less of autologous transplantation in first line regimen. The multivariate analysis will be performed.

## ORAL 17 Survival studies : Malignant pleural mesothelioma long-term survivors: a population based study (lume study)

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### ABSTRACT

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**Objectives** : Malignant pleural mesothelioma (MPM) is a rare tumour with very poor prognosis. However, the RARECARE project observed long term survivors (LS=patients alive >3 years after diagnosis) suggesting the presence of milder phenotypes with a different prognosis and inspiring a dedicated population-based observational study: long-term survivors in pleural mesothelioma (LUME).

**Methods** : We collected all the MPM new cases diagnosed in the period 2003-2008 with cito-histological confirmation from 26 Italian cancer registries. In order to reproduce a correct representation of the Italian situation we selected all the LS of the 26 registries and randomly sampled short survivors in each registry; therefore 2,475 MPM cases were retrospectively collected. To compare the differences detected in each variables distribution between LS and not LS we use a  $\chi^2$  test. The multivariate Cox model assessed the prognostic value of selected variables.

**Results** : The  $\chi^2$  test defined that the LS had an higher proportion of young, female and epithelioid cases compare to short survivors. 55% of the LS had localized stage vs 44% of the short survivors. Furthermore, bimodal/multimodal treatment was more frequent among LS (27% vs 11%). Interesting, 17% of LS did not received any treatment, suggesting the identification of an indolent subgroup of cases. The Cox model showed age, sex, histotype, cTNM, treatment as significant prognostic variables.

**Conclusions**: Our large population study confirms the results of many clinical studies and we also confirm the presence of MPM long-term survivors (11% at population level). Comparing with other population-based studies we collected more detailed clinical variables on stage, diagnostic procedures and treatment. Further statistical analysis are ongoing, including hospital of diagnosis/treatment, immunohistochemistry and specific chemotherapy treatment.



## ORAL 18 Survival studies : Some practical advices when using cure models in the net survival framework

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### ABSTRACT

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**Background** : In population-based cancer studies, statistical cure occurs when the mortality rate in the group of individuals with cancer becomes identical to that expected in the general population. Cure fraction together with median survival time of death due to cancer and time to cure are useful epidemiological and public health indicators. When the assumption of cure for a proportion of patients is reasonable, cure models can be fitted, but if models are not properly defined, results can be misleading. We propose some practical advices for cure models users.

**Methods and Results** : Before using a cure model, a preliminary step is to assess the relevance of the cure by checking if the net survival curve reached a plateau. In the next step a model is selected among the mixture cure or the non-mixture cure models. To define the model, a survival distribution of those who are not cured must be specified. For this purpose, different distributions (Exponential, Weibull, restricted cubic splines...) are tested to find the one that provides the best fit. In our experience, the most relevant model was a non-mixture cure model using restricted cubic splines. Afterwards, whatever the chosen model, the effects of the covariates on both the cure proportion and the survival distribution of those who are not cured are investigated in order to determine if these effects are linear or nonlinear and proportional or non-proportional. Hence the best estimations of both cure proportion and time to cure can be provided. We illustrate the methodological approach with results from Francim network database.

**Conclusion** : The cure assumption is reasonable when the net survival curve shows a plateau after a sufficient follow-up. Cure models can be useful tools for public health policies: in population-based studies, they provide a coherent way to investigate and report covariate effects both on the cure proportion and time to cure.

## ORAL 19 Survival studies : Survival of European adolescents and young adults diagnosed with cancer in 2000-07 : latest EUROCORE-5 results

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### ABSTRACT

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**Objectives** : The recent publication has shown persistently lower survival for adolescents and young adults (AYA) with cancer than children for major cancers affecting both. We provide estimates of 5-year relative survival for European AYA cancer cases diagnosed in 2000-2007, in comparison to children and adults (40-69 years), and assess survival improvements over time.

**Methods** : We analysed data on 56,505, 312,483 and 3,567,383 cancers diagnosed in children, AYAs, and adults, respectively, in 27 European countries. Cases were followed-up to 2008. We estimated 5-year relative survival for 46 cancer categories: 19 affecting AYAs and children, and 27 affecting AYAs and adults. We compared survival between children and AYAs, and between AYAs and adults. We also estimated survival time trends (1999-2007) for children and AYAs with cancer.

**Results** : For all cancers combined, survival improved over time for AYAs and children, and the level of improvement was similar in both. Survival improved significantly in children and AYAs for acute lymphoid leukaemia and non-Hodgkin lymphoma. Survival improved significantly only in AYAs for CNS tumours, astrocytomas and melanoma. Nevertheless survival remained significantly worse in AYAs than children for eight of the 19 cancers affecting both. AYAs had better survival than adults for most cancers that affect both.

**Conclusion** : Notwithstanding the encouraging results for acute lymphoid leukaemia (probably due to the use of pediatric treatment protocols in AYAs), non-Hodgkin lymphoma, and overall, we confirm poorer survival in AYAs than children for eight important cancers. Further studies are required to understand why survival in AYAs still lag behind that in children for these cancers. Recent European initiatives to improve outcomes in AYAs may narrow the survival gap with children, but this can only be verified by future population-based studies.

## POSTER 20 Survival studies : Survival of solid cancer patients in metropolitan France, 1989-2013

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### ABSTRACT

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**Objectives** : The main objective of this study was to provide updated estimates of net survival at 1, 3, 5, and 10 years after cancer diagnosis and survival trends. Survival at 15 years was also estimated for the first time in France.

**Methods** : Data were provided by Francim registries. The study included all new cases of solid cancers diagnosed between 1989 and 2010 in people aged 15 or over in 19 metropolitan departments; a total of 502 063 cases. Vital status was updated at 30/06/2013. Net survival was estimated with the unbiased Pohar-Perme method. The results are reported by sex, age class and period of diagnosis, for 37 cancer sites (all stages combined).

**Results** : The net survival of solid cancer patients varied considerably with cancer site. Over the period 2005-2010, the 5-year net survival ranged from 4% (pleural mesothelioma) to 96% (testis) in men and from 7% (pancreas) to 98% (thyroid) in women. The most frequent solid cancers had the highest net survivals: 88% and 94% at 5 years respectively for breast and prostate cancer. Poor-prognosis cancers (5-year net survival of less than 33%) were more frequent in men (31% of all solid cancers vs 17% in women) while good-prognosis cancers (5-year net survival of 66% or more) were more frequent in women (57% of all solid cancers vs 44% in men). For all cancer sites, survival decreased also with age. In most cancers, net survivals at 15 years were lower than 10-year net survivals. Improvements of net survivals were observed for most solid cancers between 1989 and 2010, less pronounced in elderly patients.

**Discussion and conclusion** : This study showed the unfavorable role of age at diagnosis in prognosis. Survival increases over the last decades are probably related to the general improvement of cancer management (due to treatment advances and earlier diagnosis). However, over-diagnosis and lead-time bias due to screening may partly explain these trends.

## POSTER 21 Survival studies : Compare breast cancer survival women living in trento vs the rest of trento province

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### ABSTRACT

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**Objectives** : The objectives were to evaluate differences in breast cancer 10-year survival rates between urban (Trento) and rural (rest of the province) women in Trentino-northern Italy and for stage in two periods, 2003-04 and 2007-08, after the introduction of the Breast Screening Programme in 2001. In this period the screening had an increasing invited rate (63% - 78%) and high participation rate (86% and 82%). The analysis was based on 1456 breast cancer cases diagnosed in 2001-2002 (50%) and in 2007-08 (50%) and registered by Province of Trento Cancer Registry.

**Materials and methods** : Chi square between urban and rural residence and follow up status and stage were calculated. Overall survival at 5-10y of diagnosis as function of age and stage comparing urban/ rural women were also calculated.

**Results** : Among our 1456 patients urban woman (25%) have a better follow up status (Chi square=7.66, 2 df, p=0.022) and have more cancer at stage 1 and less missing stage (Chi square=6.56, 2 df, p=0.038) in comparison with rural woman (75%). The 10-year overall survival was 67.7%, for urban was 74.3% and rural was 65.5%, the difference was not significant (logrank p=0.596). The 10-year overall survival of stage 1 and the missing stage were better for urban (89.2% stage 1; 65.5% miss stage) comparing with rural (87.9% stage 1, 60.6% miss) but not significant, stage 1 logrank p=0.74, miss stage logrank p=0.43. Stage 2+ overall survival was significant better for urban (70.7%) comparing with rural (58.6%), logrank p=0.034. The 10-year overall survival for target screening women 50-69y did not show significant difference in residence for each stage.

**Discussion and conclusions** : The study results indicate significant differences between urban and rural areas for breast cancer stage 2+, and no differences for stage 1 and missing stage, and especially for the target screening woman. These results allow the hypothesis that the distinction urban/rural will not be a disparity factor for the province.

## POSTER 22 Survival studies : Survival of hematological malignancies patients in France (1989-2013): Study from the French cancer registries (Francim)

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### ABSTRACT

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**Objectives** : This study aims to provide updated estimates of 1, 3, 5 and 10-years net survival and survival trends in patients diagnosed with hematological malignancy (HM). We also provide 15-year survival estimates for the first time in France.

**Methods** : The present study included 35520 incident cases diagnosed between 1989 and 2010 with one of the 16 HM distinct clinical entities, aged 15+ in 16 metropolitan departments. The data were collected by the French population cancer registries (Francim network). The vital status was registered according to a standardized procedure (last update 30/06/2013). Net survival was estimated using the unbiased Pohar-Perme method.

**Results** : For 2005-2010, the 5-years standardized net survival (5ys SNS) varies dramatically from 22% for acute myeloid leukemia to 87% for marginal zone lymphoma. Seven out of the sixteen HM studied (45,5% of incidence cases) have a good prognosis with 5ys SNS of 75% or more. Reversely, two HM have a poor prognosis with 5ys SNS less than 33% (10% of incidence cases). We observe upward trends in 5ys SNS for several HM, significant (+18% or more) for chronic myelogenous leukemia, follicular lymphoma and diffuse large B-cell lymphoma. These trends are observed in both sexes and in all age categories except for follicular lymphoma (cases aged 55 years or more). For other HM, upward trends in survival are less important but still detectable also for aggressive diseases such as in youngsters with acute myeloid leukemia or lymphoblastic leukemia/lymphoma.

**Discussion and conclusion** : Most of the studied HM have shown better survival over time. For three specific HM entities, the progresses issued from clinical research seem to translate in better survival outcome in the general population. The access and usage of highly efficient novel treatments with low toxicity could largely explain these observations.

## POSTER 23 Survival studies : Prognostic factors associated with lung cancer survival , a population-based study in the south of Spain

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### ABSTRACT

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**Background** : Lung cancer is the leading cause of cancer death worldwide. The objective of this study was to analyze presentation, treatment and survival for lung cancer in Granada, and identify factors influencing survival.

**Methods** : Data were obtained from the population-based cancer registry located in Granada (Southern Spain). All cases with newly diagnosed primary lung cancer over the period 2011-2012 (n = 685) were included. Data regarding histology, stage, diagnostic tests, treatments and comorbidities was collected from clinical records. Two-year relative survival and relative excess risks of death were estimated.

**Results** : 65% of all cases were above 65 years age and 83% were men. A good performance status was present in 74%. Microscopic verification was obtained in 81% of cases. 81% were non-small cell lung cancer. Adenocarcinoma subtype (68.5%) and the age group 55-64 years were the most common among women. In men, squamous cancer (37%) and the age group >75 years were the most predominant. Overall, 16% of cases were stage I-II, 57% stage IV. 23% of cases were operated. Radiotherapy and chemotherapy were administered in 28% and 45% of cases respectively. Two-year survival was 18%; 67% for stage I, 5% for stage IV. Survival was higher among women: 29% versus 16% (men: reference); <75 years of age: 21.6% versus 11% (>75 years: reference); and good performance status: 23% versus 1.8% (bad performance status: reference). Cases in which a microscopic verification was obtained and those undergoing surgery had higher survival: 69% versus 9.2% in cases operated. In multivariate analysis, bad performance status, smoker, advanced stage and non surgical treatment were significant independent negative prognostic factors.

**Conclusions** : Performance status, stage and surgery are the main factors affecting survival. Focusing efforts on early diagnosis of lung cancer may improve treatment options and thus modify the results.

## POSTER 24 Survival studies : Improving survival of patients with hepatocellular carcinoma between 2005 and 2012 in the Finistere area

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### ABSTRACT

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**Objectives** : Relevant diagnostic procedures and advanced treatments have been introduced in the management of hepatocellular carcinoma (HCC). The aim of the study was to assess the effect of treatment procedures evolution on survival between 2005 and 2012 in the Finistere area.

**Methods** : All cases of HCC (n=971) diagnosed from January 1st, 2005, throughout December 31st, 2012, were registered in the database of the Finistere registry of digestive cancers. Diagnostic circumstances, medical background, type of diagnosis confirmation, Child-Pugh score and BCLC staging classification, treatment and AFP levels have been tested for their effect on survival. Patients were divided into two groups according to the diagnosis date. The 5-year cancer specific survival (CSS) was calculated by Kaplan-Meier method and a multivariate analyse by cox model.

**Results** : Overall, the 5-year CSS significantly increased during this 8-year period, from 12.9% for cases diagnosed between 2005 and 2008 to 21% for cases diagnosed from 2009 onward (p<0.05). Patients diagnosed during screening procedures had a 5-year survival rate of 25.5% vs 7.6% in case of symptomatic diagnosis (p<0.001). They underwent more curative or interventional treatment in 67.0 % of cases whereas it dropped to 22.2% in case of symptomatic diagnosis. We observed a strong association between the AFP level and prognosis, CSS being 25.9 months (IC95 20.5-30.8) for AFP level below 14 ng/mL, as compared with 9.7 months (IC95 7.3-11.5) and 3.1 months (IC95 2.6-3.8) for levels between 14 and 199ng/mL or above 200ng/ml respectively. In the multivariate analysis, clinical presentation, tumor size, AFP level, Child-Pugh score, BCLC stage and treatment were independent prognostic factors for the 5-year CSS.

**Conclusion** : Cancer specific survival rate significantly increased during this 8-year period in HCC patients, mostly in patients diagnosed during screening. A low level of AFP is a significant prognostic factor.

## POSTER 25 Survival studies : Impact of marital status on survival of men with penile tumors. A population-based study in two Swiss cantons

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### ABSTRACT

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**Objectives** : Our primary objective was to study the impact of marital status on overall survival of men with penile tumors in two Swiss cantons. We hypothesized that marriage was a protective factor. Secondary objectives were to examine the influence of socio-demographic and clinical factors on this association.

**Methods** : We examined all penile tumors diagnosed from 1974 to 2013 and registered in the Vaud and Neuchâtel Cancer Registries (ICDO-3: C60-C60.9/C63-C63.9 and ICDO-1: 187.1-187.9). Variables examined included marital status (married vs single/divorced/widowed), age, place of residence, tumoral grade and morphology. Characteristics were compared according to marital status using t-test and  $\chi^2$  test as appropriate. Univariate survival analyses across marital groups were made using Kaplan Meier curves. A multivariate Cox model including a dependency of each potential risk factor with time, to allow relaxing the classical proportional hazard assumption, was built to explore the impact of socio-demographic and clinical variables on this association.

**Results** : Univariate analyses showed a protective effect of marriage during the first five years after diagnosis, but a superior survival of un-married men later on. The multivariate model confirmed a significant protective effect of marriage during the first years after diagnosis however the attenuation of this effect across time was non-significant (Hazard Ratio (HR): 0.681,  $p < 0.05$ ). Furthermore, an intuitive positive effect of age on the hazard was found (HR: 1.06,  $p < 0.001$ ) and higher degrees of malignancy were shown to be associated with higher risks of dying, although this effect significantly attenuated across time, probably as a result of a selection of more robust individuals among those with higher degrees of malignancy.

**Conclusions** : Marriage improves survival of men with penile tumors. The lower survival observed among non-married men highlights the need for further research and intervention to reduce disparity.



## POSTER 26 Survival studies : Prognostic factors in pancreatic adenocarcinoma (ADK): data from High Resolution Cancer Registry (HRCR)

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### ABSTRACT

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**Objective :** The aim is to identify key factors influencing prognosis using high resolution variables from HRCR

**Materials and methods :** 542 resident (excluded 8 cases diagnosed with Death Certificate Only) subjects diagnosed with pancreatic adenocarcinoma between 2008 and 2012 were extracted from HRCR and linked with Reggio Emilia diabetes register. Relative excess risks of death is calculated with Cox proportional hazard model, adjusted for age ( $\leq 54$ , 55-74, 75-84, 85+), sex, period (2008-2010 vs 2011-2012), subsite (head, body, tale and unknown), stage (I, II-III, IV, unknown), resident area (urban, sub-urban and mountain district), Ca19.9 ( $<100$  and  $>100$  previously adjusted for jaundice) and diabetes previous diagnosis of cancer (yes and no).

**Results :** The relative survival at three years was 10%. Risk of death increase with age. Female have lower risk (HR 0.8 [0.7-1.0]). Survival increased in the most recent period (HR 0.8[0.7-1.0]). Unknown subsite has worst prognosis compared to those defined (HR 1.2 [1.0-1.6]). Survival decrease only for stage IV (HR 2.2 [1.3-3.7]), while stage II and III have comparable survival compared to stage I (HR 0.9 [0.5-1.6]). Compared to urban area, mountain shows a significantly increased risk (HR 1.62[1.19-2.20]) and sub-urban area shows a slightly increased risk (HR 1.11[0.90-1.37]). Subjects with diabetes have a two fold increased risk of death (HR 2.2 [1.6-3.1]). There are no differences in prognosis between different plasmatic levels of Ca19.9 (HR 1.1[0.9-1.5]).

**Discussion and Conclusions :** The main prognostic factors, age, stage and sex, have been confirmed. Surprisingly only stage IV have poorer prognosis, while stage II and III do not discriminate patients with shorter survival. Onset of diabetes just before the diagnosis strongly predict a short survival, suggesting that this condition is an indicator of late cancer symptoms presentation.

## POSTER 27 Survival studies : Conditional survival of patients diagnosed with lung cancer worldwide : a concord-2 study

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### ABSTRACT

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**Objective** : To provide conditional survival estimates for patients diagnosed with lung cancer worldwide.

**Materials and methods** : This study includes adults (15-99 years) diagnosed with lung cancer between 1995 and 2004 in one of 48 countries and followed up until 2009 from CONCORD-2. For clinical use, we computed observed survival for a further five years among patients who had already survived up to three years after diagnosis, by country, sex and age group. For international comparison, net survival at five years after diagnosis was split into one-year net survival up to one year and net survival at the fifth anniversary of diagnosis among patients who had already survived one year. This allowed the distinction between short-term prognosis (survival during the first year) and mid-term prognosis (survival during the second to fifth years).

**Results** : The study included data on 3,118,133 patients provided by 204 cancer registries. The probability of surviving five more years increased with the time elapsed since diagnosis. In France, for example, five-year observed survival for men aged 15-64 years was 15.2% at diagnosis, increasing to 28.6%, 43.9% and 53.8% for men who had already survived one, two or three years, respectively. Five-year net survival conditional on surviving the first year after diagnosis (five-year conditional survival) was high in most Asian countries, ranging from 32.0% to 48.1%. Among European countries, one-year net survival ranged widely, from 21.5% to 41.9%, while five-year conditional survival ranged from 27.2% to 46.2%.

**Conclusions** : Thanks to data provided by cancer registries around the world, this study could provide estimates of conditional survival that may be helpful to patients and clinicians worldwide. Comparisons of conditional survival also highlight international differences in lung cancer survival that may help guide improvements to healthcare systems.

## ORAL 28 Collaboratives studies : Enhancing cancer data to improve care of patients with pancreatic cancer: a proposal of a european collaborative project

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### ABSTRACT

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**Objectives** : The prognosis of pancreatic cancer (PC) is extremely poor and it is expected to be the second most common cause of death from cancer. The objective of this project is to evaluate the feasibility of linking clinical data to the information routinely collected by the population-based cancer registries (PBCRs), through the collaboration between GRELL affiliated PBCRs and the European Pancreatic Cancer Registry PancreOs, an initiative supported by the EU Multi-Stakeholder Platform and the COST Action EUPancreas BM1204, among others.

**Methods** : An exploratory pilot study in selected areas covered by PBCRs is proposed. To explore the feasibility of clinical data collection by the oncologists, a pilot study was carried out in 7 Spanish hospitals, and consequently a database was designed. Socio-demographic data, cancer family and patient history, tumour, diagnosis and treatment data, along with follow-up data of the patients, were collected. A workshop on PC involving the PancreOs network, the European Network of Cancer Registries (ENCR), the Spanish Network of Cancer Registries (REDECAN) and European Commission's Joint Research Centre (JRC) researchers took place in Madrid (Spain).

**Results**: Collaboration between PancreOs and REDECAN was envisaged and encouraged at the Workshop, in which the following scenario was depicted: the oncologists, collaborating with PancreOs, will identify the new patients with PC, they will obtain diagnosis, treatment data and follow-up from the hospital records and, once the patient's informed consent is obtained, they will report the case to the PBCRs. The PBCRs staff will then collect and integrate the data gathered according to an agreed data collection protocol.

**Conclusions** : The collaboration between PBCRs and clinicians would improve the available information on PC, and would be useful for the improvement of healthcare of these patients. The proposed pilot study would provide a relevant input to build up a sustainable information system on PC.

## ORAL 29 Collaboratives studies : Trends in survival from ovarian cancer in six European Latin countries: results from the SUDCAN population-based study

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### ABSTRACT

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**Purpose** : The SUDCAN study is an initiative of the GRELL in collaboration with EUROCORE. Suboptimal survival results on ovarian cancer (European 5-year net survival 37.6%) make necessary major efforts to detect differences in survival trends and improve prognosis. We studied the trends in 1 and 5-years net survival from ovarian cancer over the 1992-2004 period in six participating European Latin countries ;

**Methods** : The data were extracted from EUROCORE-5 database (end of follow-up: 01/01/2009). The results are reported from 1992 to 2004 in France, Italy, Spain, and Switzerland and from 2000 to 2004 in Belgium and Portugal. Analyses included 33,178 cases from 28 registries. Exclusions (mainly DCO) ranged from 0% to 3.4% depending on the country. Trend analyses were performed using an original flexible excess rate modelling strategy applied for each country. A model was selected among 19 that differed in the modelling of the effect of the year of diagnosis in terms of linearity, proportionality and change with age, based on the Akaike Information Criterion.

**Results** : In 2004, the 5-year age-standardized net survival (ASNS) was about 38% in Spain, Switzerland and Italy and about 42% in France, Portugal, and Belgium. Between 1992 and 2004, 1 and 5-year ASNS improved substantially in all countries; the absolute increases ranged from 7% to 12% and from 5% to 8%, respectively. In Belgium and Portugal, the 5-year ASNS increased too between 2000 and 2004. Differences in 1-year ASNS between countries were maintained along the study-period whereas differences in 5-year ASNS widened, especially in the most recent years, due to lower increases in Switzerland and Spain.

**Conclusions** : Improvements in survival from ovarian cancer were seen across Latin European countries but some differences between countries remain. These results underline the necessity of studying the variability in ovarian cancer care. Funding source: French Ligue contre le Cancer.

## ORAL 30 Collaboratives studies : Participation of the European population-based cancer registries in the ENCR-JRC project

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### ABSTRACT

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**Objectives** : In June 2015, a new European Network of Cancer Registries – Joint Research Centre (ENCR-JRC) call was launched to collect data from European population-based cancer registries (CRs). The purpose of this call is to serve several European studies, including the ENCR-JRC project on "Incidence and Mortality in Europe". The main aims are to estimate the cancer burden in Europe and to identify gaps in population coverage.

**Methods** : An ENCR-JRC web portal has been developed as a unique gateway for European cancer data collection. This portal facilitates easy uploading of data and participation of CRs in different studies, besides the ENCR-JRC project. Data need uploading only once. More than 200 population-based CRs, operating in Europe, were invited to the call and were enabled to access the portal.

**Results** : A total of 88 population-based CRs (76 general, 7 site-specific, and 5 paediatric CRs), from 23 European countries, responded. Of these, 80 CRs (70 general, 7 site-specific, and 3 paediatric CRs), from 23 countries, expressed their interest in participating in the ENCR-JRC project. Taking into account the countries in the European Union (EU) only, the population covered by the general CRs, participating in the ENCR-JRC call, resulted in nearly 37% of the total, ranging from 13% in the Northern EU regions, to 55% in the Eastern ones.

**Conclusions** : The use of the portal and the formats of the files uploaded showed a huge heterogeneity in informatics capability across CRs. The JRC technical support was necessary and welcome; targeted ENCR training and comprehensive open-source data check software, before future calls, would be beneficial. The CR response, to the first ENCR-JRC call for data, has been, overall, quite good, although it varied by European geographic area.

## ORAL 31 Stage : Set up of a routinely registration of stage of breast and colorectal cancer in French cancer registries

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5 Registre des cancers du Haut Rhin  
6 Registre Bourguignon des cancers digestifs

### ABSTRACT

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**Objectives** : Data concerning trends over time in incidence by stage for colorectal or breast cancers are scarce in the literature. The French network of cancer registries (FRANCIM) designed a routinely process of registration of the extension of cancer at diagnosis in a common database.

**Methods** : 17 French cancer registries participated. The sample annually includes 100 cases per registry for breast and for colon, and 70 for rectum (18 000 cases). Each sample is randomly chosen on the basis of day and month of birth of patients so as to early identify concerned cases and currently ensure the survey. All the relevant information required for staging is collected using a standardized process. Stage is coded through a dedicated common algorithm according to the ENCR rules. An adapted C-factor ensures the validity of staging. As neoadjuvant radiotherapy may modify the tumour, results for rectal cancer were presented taking into account the neoadjuvant radiotherapy.

**Results** : Between 2009 and 2012, 60% of breast cancers were localized and 12% had advanced stage. Young women (50-74 years) had more localized stages than the older. Localized cancer represented 44% of colon cancers, respectively 48% before 75 years and 41% over. For rectal cancers, localized cancers represented 39% of cases without neoadjuvant radiotherapy and 57% with. For breast, colon and rectal cancers, there was no variation in the proportion of cancer by stage through the 4 years of the study.

**Discussion** : Our results underline the necessity of a precise and standardized procedure to routinely collect stage of cancer in a large population. The choice of a randomly selected sample through numerous registries seems relevant to allow a regular registration. Information that takes into account neoadjuvant treatment is informative. In the next future, this process will concern all other relevant cancer location and will be extended to precancerous lesions. This data will help in the evaluation of screening programs.

## ORAL 32 Stage : Stage at diagnosis and stage-specific cancer survival in Latin-language countries world-wide

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### ABSTRACT

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**Objectives** : To examine the distribution of stage at diagnosis and stage-specific cancer survival in 19 Latin-language countries.

**Material and Methods** : CONCORD-2 analysed data for about 26 million adults (15-99 years) diagnosed during 1995-2009 with cancer of the stomach, colon, rectum, liver, lung, breast (women), cervix, ovary or prostate, or leukaemia, in the areas covered by 279 cancer registries in 67 countries. Cancer registries were offered several options to submit data on stage at diagnosis: TNM (Tumour, Nodes, Metastasis; clinical and pathological), condensed TNM, SEER Summary Stage 2000, Dukes' stage (colon, rectum) and FIGO (cervix, ovary). We designed an algorithm to summarise all the available data on stage in order to examine the world-wide distribution of stage at diagnosis, dichotomised simply as "localised" vs. "advanced". Stage distribution will be examined in more detail in countries that contributed data on TNM. Stage-specific net survival will be estimated, corrected for background mortality by single year of age, sex, calendar year in each country or region. All-ages survival estimates are standardised with the International Cancer Survival Standard weights.

**Results** : We will present the stage distribution and stage-specific age-standardised net survival in 19 Latin-language countries for some of the nine solid tumours examined in CONCORD-2.

**Discussion** : These results will offer the widest picture on the availability of data on stage at diagnosis and stage-specific cancer survival worldwide. Cancer registries in which data on stage at diagnosis are complete and of high quality may offer useful examples for cancer registries where it is still difficult to obtain data on stage.

## POSTER 33 Collaboratives studies : Relationship between oesophageal adenocarcinoma and gastric cancer incidence rates in european grell countries

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### ABSTRACT

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**Objective :** In Europe the incidence of gastric cancers is decreasing, while oesophageal adenocarcinomas (EAC) are increasing. It has been suggested that these trends could be both caused by the decrease of the prevalence of the infection of H. pylori. The aim of this study was to evaluate the relationship between the incidence of these two cancers in some European Grell countries.

**Methods :** Age world standardized incidence rates for gastric cancer (non-cardia, NC-GC and overall, GC) and for EAC were retrieved from the Cancer Incidence in 5 Continents - X website. We focused on European Grell Countries for which such data were available (Belgium, France, Italy, Spain, Portugal and Switzerland). Crude and weighted (either on EAC frequency and on population adjusted for old-age index) Pearson's correlation coefficients were computed between EAC and NC-GC and GC, overall, for countries with regional cancer registries, and for sexes.

**Results :** Data from 64 population-based cancer registries were included (Belgium, 11 France, 33 Italy, 13 Spain, 5 Switzerland and 1 Portugal). The frequency of EAC varied across registries from 0 to 1212 cases, while the population adjusted for old-age index from 59,947 to 6,415,149. The correlations between EAC and GC, and EAC and NC-GC were significantly negative both among men (-0.49 and -0.53) and women (-0.41 and -0.43). The use of weights changes the values but not the meanings of the correlations. Results did not change removing the registry with the greatest case-series. However, when single countries were examined, different correlations appeared across them and between sexes.

**Conclusions :** The overall data from European Grell countries showed a negative correlation observed in the period 2003-2007 between incidence of EAC and GC, either considering only NC-GC. This result supported the hypothesis of a common factor which acts in opposite directions for the two cancers. However, when single countries were analyzed an unclear pattern emerged.



## POSTER 34 Stage : Advanced breast cancer shows a decreasing trend: a French population-based study (2000–2010)

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### ABSTRACT

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**Objectives** : A decrease in advanced-stage breast cancer (BC) incidence is considered an early indicator of BC mortality reduction related to screening programs. The aim of this study was to describe trends in BC incidence according to tumor size in France.

**Methods** : All 28,092 invasive BCs diagnosed from 2000 to 2010 in women living in three pilot areas where an organized screening program was implemented during the 1990s, were included in this study. The incidence rate according to tumor size at diagnosis was determined by data routinely collected by the cancer registries of the three areas. Poisson regression models were fitted to estimate average percentage changes (APCs) in incidence over time after adjustment for age and administrative area.

**Results** : From 2000 to 2010 the incidence rate of advanced BC (size >20 mm) linearly decreased in women aged 50–74 years from 108.4 to 84.1/100,000 (APC=−1.9%, p<0.001). Meanwhile, the evolution of early-stage BC in women aged 50–74 years followed an increasing trend until 2003, a decreasing trend until 2006 and stabilized thereafter. By contrast, in women younger than 50 years, the overall incidence rate steadily rose by 0.9% a year for all-stage BC. In women older than 74 years, no increase in incidence rates of advanced BC was evidenced, whereas early-stage BCs were still in progression (APC=+1.9%, p<0.01).

**Conclusions** : Few countries evidenced a decreasing trend of advanced BC after implementation of a screening program. The overall 20.9% decrease of advanced BC incidence in the target age group of the BC screening program over 11 years, in these three pilot areas, is encouraging and should be closely monitored in the future.

## POSTER 35 Stage : Lung cancer survival by stage and factors associated to survival in Mallorca, Spain

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### ABSTRACT

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**Objectives** : To know the distribution of lung cancer by stage in Mallorca; to determine survival by stage up to 8 years after diagnosis, and to identify factors which explain and predict the probability of survival and the risk of dying for this cancer.

**Methodology** : Retrospective follow-up study of people diagnosed with invasive lung cancer during 2006-2011, identified through the Mallorca Cancer Registry. DCO and lymphomas were excluded. Sex, age, diagnostic method, histology, T, N, M, and stage, date of diagnosis, date of follow-up or death, and cause of death were collected. End point of follow-up was 31st December 2013. Multiple imputation (MI) method was performed to obtain stage when unknown. Actuarial and Kaplan-Meier methods were used for survival analysis. Extended Cox models were built to identify factors that explain and predict survival.

**Results** : A total of 2,576 lung cancer cases were diagnosed, 81.2% in men and 18.8% in women, with a mean age of 66 years. Unknown stage represented 12.8% of cases. After MI, 10.1% were in stage I, 6% were in II, 21.3% in III, and 62.6% in IV. Survival at 5 years after diagnosis was 47% for stage I, 35% for stage II, 11% for stage III and 1% for stage IV. Women, younger cases, patients with adenocarcinoma and diagnosed in early stages have better prognosis. The effect of age decreased with time.

**Conclusions** : Most lung cancer cases are diagnosed in advanced stage. Survival changed remarkably by stage, but was influenced also by age, sex and histology.

## ORAL 36 Others topics : Impact of screening programme on incidence of colorectal cancer: a cohort study in Italy

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### ABSTRACT

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**Objective** : Colorectal cancer screening using the faecal occult blood test (FOBT) has been shown to be effective in reducing cause-specific mortality. However, although it detects pre-cancerous adenomas, it is uncertain whether FOBT reduces the incidence of invasive cancer. The objective is to evaluate the impact of screening with immunochemical FOBT (FIT) on colorectal cancer incidence and mortality.

**Methods** : An organised screening programme was implemented in 2005 in the province of Reggio Emilia (Northern Italy). The programme invites the resident population aged 50-69 for FIT every two years. Subjects who test positive are referred for colonoscopy. Incidence was studied through cancer registry. Person-times of people aged 50-74 from 1997 to 2012 were classified for exposure to screening according to age and period. Furthermore, two open cohorts - one never screened (aged 50-69 in 1997) and one invited for screening (aged 50-69 in 2005) - were followed up for 8 years.

**Results** : About 4 million invitations have been sent, and approximately 55% of people invited have undergone FIT at least once (2 million tests). The rate of colonoscopy participation has been about 80%, and 14,712 cancers have been recorded (7,300 in the screening period). The age-adjusted and sex-adjusted incidence rate ratios as compared with pre-screening were 1.43 [95%CI, 1.38; 1.50], 0.93 [95% CI, 0.89; 0.96], and 0.77 [95%CI, 0.73; 0.82] for the first round, subsequent rounds and post-screening, respectively. Cumulative incidence and incidence-based mortality decreased by 1% [95%CI, -4%; 2%] and 23% [95%CI, 18%; 27%], respectively.

**Conclusions** : After 8 years of screening the initial increase in incidence has been completely rewarded by a lower incidence in second and following round and by post screening age. Colorectal cancer related mortality also decreased in the screened cohort.

## ORAL 37 Others topics : Overdiagnosis associated with breast cancer screening : a simulation study to compare lead-time adjustment methods

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### ABSTRACT

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**Objectives** : Estimating overdiagnosis associated with breast cancer screening may use annual incidence rates of cancer derived from data routinely collected by registries. Our objective was to assess two lead-time adjustment methods using simulated data.

**Methods** : We simulated the occurrence and natural course of cancer and participation rates for populations invited to screening programmes. Overdiagnosis estimates were computed using the compensatory drop method that considered the decrease in incidence of cancers among older age groups no longer offered screening, and the method based on the decrease in incidence of late-stage cancers.

**Results** : The true value of overdiagnosis was 0% in all the data sets simulated. The compensatory drop method yielded an overdiagnosis estimate of -0.1% (95% credibility interval -0.5% to 0.5%) when participation rates and risk of cancers were constant. However, if participation rates increased with calendar year as well as risk of cancer with birth cohorts, the overdiagnosis estimated was 11.0% (10.5%–11.6%). Using the method based on the incidence of early- and late-stage cancers, overdiagnosis estimates were 8.9% (8.5%–9.3%) and 17.6% (17.4%–17.9%) when participation rates and risks of cancer were constant or increased with time, respectively.

**Conclusion** : Adjustment for lead time based on the compensatory drop method is accurate only when participation rates and risks of cancer remain constant, whereas the adjustment method based on the incidence of early- and late-stage cancers results in overestimating overdiagnosis regardless of stability of participation rates and breast cancer risk.

## ORAL 38 Others topics : Estimating cancer costs by using cancer registry and administrative data at individual level

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### ABSTRACT

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**Objectives** : To reconstruct cancer pathway and cost-related dynamic according to 3 phases of care: initial, continuing and final.

**Materials and Methods** : The profiles of cancer-related costs are built using administrative data (hospital admissions, outpatients and pharmaceutical data) linked at individual level with cancer registry data: prevalent cases are decomposed into 3 phases of care and corresponding costs are computed. Cancer sites considered are colon, rectum and breast; Italian registries participating in the study are located in 7 regions, spanning from North to South.

**Results** : Preliminary results for colorectal cancer in Veneto and Tuscany cancer registries show cost profiles with very high costs during the first months of the disease, then declining until reaching a plateau during the continuing phase and then increasing again at the end of life. Stage at diagnosis influences costs of the initial phase: more advanced stages correspond to higher average costs, in all age classes and particularly among the youngest. This result is consistent with the clinical guidelines which suggest different treatment strategies according to the tumour stage. Age is also related to costs: younger patients have higher costs in all phases of the disease.

**Discussion** : The phase-of-care approach allows the estimation of patterns of care and costs, taking into account the survivors' distribution and their care needs during lifespan. The study confirms that stage and age at diagnosis have an influence on therapeutic strategy and related costs. The results confirm the importance of primary prevention and early detection of cancer in a public health perspective, not only in the improvement of patients survival and but also in the economic sustainability of healthcare. The study is partially supported by the Italian Ministry of Health – National Centre for Prevention and Disease Control (CCM) grant 2014.

## ORAL 39 Others topics : Cancer registries: how much do we cost to the taxpayers ?

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### ABSTRACT

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**Objectives** : Nowadays cancer registration is recommended as a pillar piece in cancer control. However little is known about its economics and few metrics have been developed so far for assessing its costs and benefits. This work aims to describe different studies on cancer registration cost evaluation going on in the world. We made comparison among tools, experiences and results, and proposed possible indicators of quantitative outcomes.

**Methods** : Information on cancer registration costs was retrieved through an ad hoc survey, a web search for peer-review publications, registry specific reports, and direct contacts with directors and researchers active in this field. Items of cost and results were compared, taking care of specific characteristics of cancer registration in different countries. Potential outcomes indicators were critically discussed.

**Results** : At present, five major studies are ongoing in the world: the web-based cost assessment tool (CAT) for evaluating the National Program of Cancer Registries in the USA; its application in Sub-Saharan Africa; the estimates provided by Japan; the cost analysis performed in Europe, and; a very detailed German report. The cost per registered case varies from about 7€ in Africa to over 100€ in Germany; the size of the population covered as well as the number of cases influence costs. Economies of scale can be realized. Most of the resources are spent on personnel and staff works primarily on cancer registration core activities. Outcomes are evaluated only in the European survey.

**Conclusions** : Despite well-known differences in background, infrastructures and way of working, cancer registration costs are comparable at a certain extent, and, in a period of increasing threat to cancer registry budgets, their systematic assessment becomes an essential tool to improve efficiency and ensure an optimal use of funding.

## POSTER 40 Others topics : Impact of the decline in colorectal cancer participation screening

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### ABSTRACT

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**Objectives** : The objectives were: a) to measure the evolution of participation rate during the three first colorectal (CRC) screening campaigns organized in the Finistere area between 2004 and 2010; b) to assess the impact of decline in participation on diagnosis stage and 5-year survival; c) to compare CRC patients characteristics according to each screening status [screen-detected cancer (SDC), screen-excluded cancer (SEC), interval cancer (IC) and non-responders cancers (NRC)] with a control group of patients diagnosed between 2002 and 2004.

**Materials and methods** : This retrospective study covered the first three CRC screening campaigns (C1, C2, C3) organised in the Finistere area. We matched all cases diagnosed during the 3 campaigns registered from the Finistere registry of digestive cancers with those from cancer prevention coordination center database in order to specify the screening status for each the patients. Descriptive analyses of age at diagnosis, gender, stage, and subsite have been conducted. Incidence rate and disease-specific survival have been estimated.

**Results** : The screening campaign participation rate was 47.6% for C1 (2004-2006), 34.6% for C2 (2006-2008) and 33.7% for C3 (2008-2010). A total of 2842 CRC were identified in the study (SDC=547, SEC=231, IC=436, NRC=1628) and 687 in the control group. The proportion of in situ CRC was significantly higher in C1 (21.9%) than in C2 (14.0%) and C3 (17.8%). The proportion of stage III CRC was higher in C2 (27.3%) vs C1 (19.7%) and C3 (21.3%). There was no significant difference between the 3 campaigns regarding age at diagnosis, gender, subsite, the overall survival nor the disease-specific survival.

**Conclusions** : Despite a decrease in CRC screening participation over time, it remained an important benefice to CRC screening by permitting more early CRC diagnosis when the compliance was higher. Moreover, we showed that the decrease in participation had no significant impact on disease-specific five-year survival.



## POSTER 41 Others topics : Participate in organized screening program for breast cancer: what benefit for patients ?

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### ABSTRACT

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**Introduction :** The benefit of mammography screening is controversial. Besides the impact on the general population, do patients with breast cancer had an advantage to participate in a organized screening program?

**Methods :** Eligible patients residing in Poitou-Charentes, area covered by a cancer registry, where organized screening program by biennial mammography exist since 2004, were aged 50-74 years at diagnosis of breast cancer in 2008 and 2009. Three groups were formed: i) detected by the screening program (DO), ii) interval cancers (CI) and iii) detected outside the screening program (HDO). The 5-year survival was analyzed in patients with invasive tumor.

**Results :** Among 1891 patients, 67% had participated in the screening program. The rate of interval cancer was 15.2%. Besides access to less intensive treatments, better 5-year survival was observed in the DO group compared with the HDO group (96.5% vs 85.4%;  $p < 0.001$ ). CI group had more advanced stage higher grade than patients in the DO group ( $p < 0.001$ ), but less advanced stage than the HDO group (3.9% vs 11.5 %,  $p < 0.001$ ). In the CI group, survival was better than in the HDO group (93.3% vs 85.4%,  $p = 0.005$ ) and not different from the DO group.

**Conclusion :** Participating in a screening program is associated with better survival. The survival benefit observed also in patients of interval cancers cannot be explained by over-diagnosis, but seems to be the result of a limitation of late diagnosis due to regular monitoring, which would reinforce the need to promote the organized screening.

## POSTER 42 Others topics : Is-it possible to use the specific prostate cancer quality of life questionnaire EPIC in a population-based study ?

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### ABSTRACT

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**Objectives** : With an estimation over than 365 000 new cases in France for 2011, prostate cancer is the most common cancer in France, irrespective of gender with over than 71 000 new cases. The quality of life is often an endpoint in population based-study using specific validated questionnaire. The aim of this study was to compare psychometric properties of the French version of the Expanded Prostate Cancer Index Composite (EPIC) between different populations.

**Materials and Methods** : Validation of the French version of EPIC was performed in different populations: 200 patients currently receiving treatment and 100 healed patients for at least three years (G1) and all subjects of the QaliPro case-control study including 308 healed cases for ten years (G2) from ten French cancer registers and 653 controls (G3) from general population of men older than 55 years. Classical tests (psychometrics properties) and IRT models were used for questionnaire validation.

**Results** : The proportion of missing items was globally moderate, around 8%. Floor effects were limited in the three groups (only up to 15% for the sexual function subscale in the first group). Ceiling effects were more important in the third group and up to 72% in the urinary incontinence subscale. Alpha's Cronbach coefficients were similar between groups (0.82 to 0.87 for urinary bother subscale for example), except for hormonal function and bother subscales. Correlations between EPIC function and bother subscales were higher in cases than in subjects from general population. Correlation between sexual function and bother subscales was negative in subjects from QaliPro case-control study.

**Discussion and Conclusion** : This study highlighted globally good psychometrics properties in all populations except for sexual scale. The psychometric proprieties of the French version of EPIC were globally similar to these of the original questionnaire. EPIC validation in different populations shows that the questionnaire is robust enough and can be used in patients with prostate cancer but also in general population.

## POSTER 43 Others topics : Are patients with a first potentially-HPV-related cancer at greater risk of second primary cancer ?

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### ABSTRACT

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**Objectives** : Human papillomaviruses (HPV) are involved in the development of anogenital and head and neck cancers. The purpose of this study was to assess the risk of developing a second primary cancer (SPC) after a first potentially-HPV-related cancer.

**Methods** : All patients with a first cancer diagnosed between 1989 and 2004, as recorded by 10 French cancer registries, were followed up until December 31, 2007. Only invasive potentially-HPV-related cancers (namely, cervical, vagina, vulva, anal canal, penile, oropharynx, tongue and tonsil) were included. Standardized Incidence Ratios (SIRs) were calculated to assess the risk of SPC. A multivariate Poisson regression model was used to model SIRs separately by gender, adjusted for the characteristics of the first cancer.

**Results** : 10,127 patients presented a first potentially-HPV-related cancer. The overall SIR was 2.48 (95% CI, 2.34-2.63). The SIR was 3.59 (95%CI, 3.33-3.86) and 1.61 (95%CI, 1.46-1.78) in men and women, respectively. The relative risk of potentially-HPV-related SPC was high among these patients (SIR=13.74; 95%CI, 8.80-20.45 and 6.78; 95%CI, 4.61-9.63 for men and women, respectively). Women diagnosed in the most recent period (2000-2004) showed an increased risk of SPC as compared with women diagnosed between 1989 and 1994 (ratio of SIRs=1.40; 95% CI, 1.06-1.85).

**Conclusion** : HPV cancer survivors face an increased risk of SPC, especially concerning second cancer sites potentially related to HPV. Clinicians may consider this increased risk of developing HPV-related SPC during follow-up to improve subsequent cancer prevention in these patients.

## ORAL 44 pediatric cancers : Childhood cancer in the central region of portugal between 2000 and 2009: incidence and survival

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### ABSTRACT

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**Objectives** : In Portugal oncological diseases represent the second leading cause of death among children. The knowledge of the burden of these diseases is crucial to evaluate health practices and on the design of future public health strategies. Therefore we aimed to describe incidence and survival of children in the central Region of Portugal.

**Methods** : Data on 614 cancer cases, diagnosed in children aged less than 15 years old between 2000 and 2009, were collected from the Registo Oncológico Regional do Centro (ROR-Centro) and followed until 30 June 2015. Cancers cases were classified according to the International Classification of Childhood Cancer 3rd Edition (ICCC-3). Population data was obtained from the Instituto Nacional de Estatística (INE). The annual percentage changes, and 95% confidence intervals (95%CI), were achieved using Poisson regression. Kaplan-Meier survival estimates were computed.

**Results** : Childhood cancer incidence rates increased 3.2 %/year (95%CI: -2.0 – 8.7), not significantly, in this period, from 17.4/100,000, in 1990, to 22.5/100,000, in 2009. There were no sex differences according to the amount of change, girls: APC=2.2%/year 95%CI: [-3.2 – 8.0] and boys: APC=4.9%/year 95%CI: [-1.0 – 9.2]. More frequent tumours are those from group I (Leukaemia's, n=183), group III (CNS, n= 119) and group II (Lymphomas, n=105). Overall survival (OS) was 92%, 85% and 81%, 1, 3 and 5 years after diagnosis, respectively. Five years after diagnosis, group X (Germ cell tumours) presented the higher survival (OS=95%) and those of group VII (Hepatic tumours) the lower (OS=57%).

**Conclusion** : Childhood cancer incidence increased, not significantly, during this period but survival has strongly improved, when compared to previously analysis. Therefore, it's imperative to fully understand the determinants of these pictures.

# ORAL 45 pediatric cancers : Survival of solid tumours (except CNS) in Spanish children. A collaborative study of the Spanish cancer registries

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## ABSTRACT

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**Objective** : To analyse survival trends of children with solid tumours except those of central nervous system (CNS) in Spain.

**Methods** : Cases were drawn from the 11 Spanish population-based cancer registries participating in the study. Registries with data for the period 1991-2005 and follow-up until 31-12-2010 were included. Observed survival rates were estimated with Kaplan-Meier, and trends were tested using the log-rank test through the periods 1991-1995, 1996-2000 and 2001-2005.

**Results** : Solid tumours (except CNS) accounted for 36% of total childhood cancers and Neuroblastoma was the commonest of this group (7.7%), followed by Soft tissue sarcomas (6.3%), Bone (6.2%), and Renal tumours (4.5%). The survival for all children diagnosed with non-CNS solid cancer (except group XII: Other and Non Classified) in the period 2000-2005 was 88% (CI: 88-91) after 1 year from diagnosis and fell to 79% (CI: 76-80) after 5 years. There have been no differences in survival by sex. There was a significant (log-rank test=0.001) increase in 5-years survival (68% in 1991-1995 to 79% in 2000-2005). Retinoblastoma and melanoma and other epithelial carcinomas presented the highest survival (100%) all along the period. Malignant STS, liver and bone presented the worse prognosis. To highlight that 5-year survival for liver cancer was 70% but the conditional 5 year survival after survived the first year after diagnosis was 88%. Only Neuroblastoma and group XI tumours showed a significant increase in survival.

**Conclusions** : There has been significant (statistically) increases in 5-years survival for Neuroblastoma and Epithelial tumours, but others (STS, bone, and hepatic) deserve attention.

# ORAL 46 pediatric cancers : Cancer incidence rates and trends among children and adolescents in Piedmont, 1967-2011

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## ABSTRACT

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**Objectives** : In the past, increases in the incidence of childhood tumors were reported in Western Europe and North America. The aim of this study is to update cancer incidence and trends in children and adolescents using data of the Childhood Cancer Registry of Piedmont (CCRP total population around 4.5 million).

**Materials and methods** : We calculated incidence rates (0-19 years) from 1967 to 2011 and time trends from 1976 to 2011. We divided the trend analysis into a long (1976-2011) and a short (2000-2011) period of observation. The trend over time was estimated as the annual percent change (APC) in incidence rates using the Joinpoint Regression Program.

**Results** : CCRP registered 5020 incident cases from 1967 to 2011. Incidence rates were 156,9 (95%CI 152,3; 161,6) for children (1967-2011) and 281,7 (95%CI 259,8;305,0) for adolescents (2000-2011). From 1976 to 2011, statistically significant increases were observed for all neoplasms (APC 1,1%, 95%CI: 0,8;1,5), leukemia (0,6%, 95%CI: 0,0;1,2), lymphoma until 2007 (1,7%, 95%CI: 0,6;2,7), central nervous system tumors (1,9%, 95%CI: 1,3;2,6), neuroblastoma (1,2%, 95%CI: 0,2;2,1) and embryonal tumors in the first year of life (1,8%, 95%CI: 0,5;3,1). Trend analysis in 2000-2011 showed mostly non statistically significant variations and large variability of incidence rates.

**Conclusions** : The observation of trends over a long period shows that the incidence of most tumor types in Piedmont has increased remarkably. Joinpoint detected no breakpoints, except for lymphoma. Looking more closely at the most recent years (2000-2011), we found that rates seem to have leveled off, suggesting that the strong increases in the past may have started slowing down. However, large variability hampers interpretation of trends pattern in short periods. Given that no satisfying explanation for these increases was ever found, efforts must be made to understand and interpret this peculiar and still unundestood pattern of incidence of childhood cancer.

## ORAL 47 pediatric cancers : Space-time variations of childhood cancer incidence in France 2000-2011

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### ABSTRACT

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**Background** : The detection of spatial or temporal heterogeneity in incidence may indicate the presence of a spatially or temporally varying risk factor. Several studies have evidenced a slight spatial heterogeneity in the incidence of childhood leukemia with a general trend for cases to cluster in space and time. A space-time clustering of central nervous system tumors was also suggested. An increase in incidence has been reported for several childhood cancers. The present study investigates the spatial and temporal distribution of all childhood cancer cases in France.

**Methods** : Based on a 12 year period of registration, this study benefited from the nationwide coverage of the French National Registry of childhood cancer. Several methods commonly used in spatial epidemiology were used to detect an overall spatial heterogeneity (Pottthoff and Whittinghill's, Moran's and Rogerson's tests), to identify localized excesses of cases (SatScan and Flexscan spatial scan methods) and to estimate smoothed incidence rates (BYM model). All the analyses were conducted at the département and living zone scales, and stratified by diagnostic group and subgroups with respect to the international classification of childhood cancer.

**Results** : This comprehensive description of spatial and temporal variations in childhood cancer incidence at the nationwide scale shows several local aggregations and suggests a spatial heterogeneity for some groups of childhood cancer, but it does not confirm the suspected tendency of clustering for childhood leukemia.

## ORAL 48 pediatric cancers : Childhood cancer survival in the GRELL Regions

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### ABSTRACT

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**Objectives** : The EURO CARE-5 study still showed childhood cancer survival disparities between European countries. Actually, in the area of GRELL survival figures were low in Portugal and Spain for all cancers together (CNS excluded)[LO, 2014]. The objective of this study is to analyse survival for the major childhood cancers by country in the GRELL regions, to discuss possible reasons of disparities and make suggestions for further collaborative studies.

**Methods** : We analyzed 18,346 cancers, defined by ICCO 3rd edition, 2000-2007 diagnosed and followed-up at the end of 2008. 47 population-based cancer registries in 5 countries provided data. The observed 5-year survival was calculated by actuarial method.

**Results** : In the studied regions, for all cancer combined (CNS excluded) 5-year survival largely ranged between 86% (Switzerland) and 78% (Portugal). Five-year survival for leukemia, CNS, retinoblastoma and rhabdomyosarcoma were lowest in Portugal. The highest survival figures were reported in France, Italy and Switzerland.

**Conclusions** : Several reasons can explain these differences. Age is one factor, actually outcome in infants is worst. Another bias is the definition of the diseases, as for CNS tumors, for which it is recommended to collect borderline and benign lesions. The completeness of registration and the quality of follow-up are also crucial for survival studies. Analyses to estimate the impact of these factors on survival variation are ongoing. However, major reasons are those related to the health organization for childhood cancers care; centralization of treatment in high volume hospitals and the availability of national network has been recognized as crucial by the SIOPE. The relation between pediatric oncologists and epidemiologists for generating hypothesis to be studied in population based studies may be relevant and should be explored.



## ORAL 49 pediatric cancers : Survival from acute lymphoblastic leukaemia in children: global trends and effect of sex and age - the concord-2 study

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### ABSTRACT

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**Objectives** : Acute lymphoblastic leukaemia (ALL) is the most frequent type of leukaemia in children before the age of 15. The prognosis varies with the child's age at diagnosis, sex and with clinical and cytogenetic features. The CONCORD-2 study revealed huge worldwide disparities in 5-year net survival among more than 70,000 children diagnosed with ALL. We will use data from the CONCORD-2 study to examine survival from childhood ALL in relation to sex and age at diagnosis and trends over 1995-2009, at the global scale and with a focus on Latin-language countries.

**Methods** : We will use data for children (0-14 years) diagnosed with ALL during 1995-2009, provided by 198 participating population-based registries in 53 countries, to estimate net survival up to 5 years after diagnosis in each country. International differences in background mortality will be taken into account with appropriate life-tables. We will examine patterns of survival by calendar period of diagnosis (1995-1999, 2000-2004 and 2005-2009), and by sex and age at diagnosis (<1, 1-4, 5-9, 10-14 years).

**Results** : The results will highlight international trends in survival from childhood ALL, and the extent of variation of survival with sex and age at diagnosis.

**Conclusions** : Quantifying global differences and trends in survival from childhood ALL is the first step in understanding the determinants of inequality. This information, using data from the largest study to date on childhood ALL survival, will be key to informing policy-makers, as the basis for policies to reduce inequalities in survival.

## POSTER 50 pediatric cancers : Incidence and survival of malignant tumors in children of the basque country

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### ABSTRACT

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**Objective** : The aim of this study is to analyze incidence and survival trends of children (0-14) with cancer in the Basque Country.

**Methods** : Cases were drawn from the Basque population-based cancer registries. Incidence was estimated for the period 1990-2012 and rates were calculated as the average annual number of cases per 1.000.000 person-year. Cases were followed-up until 31-12-2014 and observed survival rates to 1, 3 and 5 years were estimated with Kaplan-Meier. Incidence and survival were estimated by sex, age group and period.

**Results** : During the study period 1,032 cases of childhood cancers were diagnosed, 59% in boys, with annual rates per million of 180.0 and 132.8 for males and females respectively. Rates increased from 1990-1999 to 2005-2012 from 154 to 162 per million. Leukemia, the most frequent malignancy cancer in children, accounted for 31% of all tumors; malignant tumours of the Central Nervous System (CNS) where the second in frequency (16%), followed by lymphomas (14%). Solid tumors (excluded those of CNS) accounted for 38% of total childhood cancers. Neuroblastoma was the most common malignant tumor (40%) during the first year of life, while CNS cancers were the most frequent (38.5%) from 1-9 years of age and lymphomas in the oldest group (26%). Survival for all children diagnosed with cancer in the period 1990-99 was 82% to 1 year from diagnosis and fell to 70% to 5 years. There was a significant (log-rank test=0.001) increase in 5-years survival (70% in 1990 to 83% in 2009). Retinoblastoma presented the highest survival (100%), followed by melanoma and other epithelial carcinomas and renal tumors (5-years survival: 93% and 86% respectively). Malignant bone tumors and those of CNS presented the worse prognosis (5-years survival: 58%), followed by hepatic tumors (61%).

**Conclusions** : Childhood cancer has increased in incidence but survival has also improved, in the Basque Country, during the last two decades.

## POSTER 51 **pediatric cancers : Perinatal Risk factors associated for Acute Leukemia in Early Childhood**

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### ABSTRACT

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**Objectives** : Leukemia is the most common cancer in children, representing about 35% of all pediatric cancers. Despite of the intensive research, its etiology is still incomplete. There is already clear evidence that the leukemia has a prenatal origin. Certain factors are established as a risk factor for the development of leukemia such as a high birth weight. The study aimed to identify factors at birth that are associated with the risk of developing AL in early child (0-5 years old).

**Methods** : Case-cohort study using two secondary databases. The cases were from 14 Brazilian PBCR. We considered cases of leukemia those children born from 2000 with age 0 to 5 years at diagnosis. Controls were children born from 2000 selected of the National Born System (SINASC). The characteristics at birth were analyzed by sex, skin color, maternal age, maternal marital status, maternal education, maternal occupation, order birth, gestational age, type of pregnancy, mode of delivery, APGAR index 5 minutes, birth weight and presence of congenital anomaly.

**Results** : We analyzed 1,360 children, with 272 cases of leukemia and 1,088 controls. The leukemia cases include 207 ALL, 41 AML and 24 non-specific leukemias. There is a positive association between maternal occupation related to agriculture and the chemical industry and leukemia in children (Leukemia - OR = 2.45, p 0.004; ALL - OR = 2.14, p 0.033; AML - OR = 6.80, p < 0.001). Children born to mothers over age 30 also had a higher chance ALL (OR = 1.42, p 0.034). The presence of anomaly at birth also showed a positive association (Leukemia - OR = 4.10, p 0.009; AML - OR = 12.56, p < 0.001).

**Conclusions** : The knowledge of the potential risk factors for developing leukemia in children is very relevant for public health. Despite of the increasing interest in this cancer issue in Brazil over the years, still remain a very few studies designed to find cancer risk factors related to childhood.

## POSTER 52 pediatric cancers : Up-to-date monitoring of long-term survival in Piedmont after a cancer in childhood or adolescence

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### ABSTRACT

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**Objectives** : Since the early 1970s there have been continuing improvements in prognosis for children with cancer in most middle and high income countries. Aims of this study are to up-date survival rates for children and adolescents diagnosed with cancer in Piedmont between 1967-2011 using a traditional cohort analysis, and to estimate up-to date long term survival rates for newly diagnosed cases using a period approach.

**Materials and methods** : We used population data from the Childhood Cancer Registry of Piedmont (CCRP), including 4340 children and 596 adolescents diagnosed in 1967-2011 and 2000-2011, respectively. All cases were followed-up until 31.12.2012. We used the cohort method to compute cumulative survival rates for 9 5-year cohorts of diagnosis for children and 2 6-year cohorts for adolescents. Period approach was used to provide up-to date estimates considering the most recent survival experience of CCRP using the last available 5-year period (2007-11).

**Results** : Most cancer types in children showed a remarkable increase in survival over cohorts of diagnosis (from the first cohort diagnosed in 1967-71 to the last one, 2007-11). Among adolescents comparing the cohorts diagnosed in 2000-05 and 2006-11 there was an improvement considering tumors together, which was not statistically significant for any cancer subtype. For children with a tumor of any type, 5-year survival improved from 32% for the first cohort to 82% for the cohort diagnosed in 2002-06, p-value for trend <0.0001. For adolescents, 5-year survival for any tumor type was 83% and 89% for those diagnosed in 2000-05 and 2006-11, respectively. Using the period approach, updated 5-year survival rates were 83% (95%CI 80-86) for children and 87% (95%CI 82-90) for adolescents.

**Conclusions** : We confirm the positive trend in survival after childhood and adolescent cancer in recent years in Piedmont with which we highlight cancer registration as an important monitor of survival at the population level.

## POSTER 53 pediatric cancers : Difference in epidemiology of bone and soft-tissue sarcomas between children and adolescents and young adults (AYAs)

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### ABSTRACT

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**Objectives** : Sarcomas in the paediatric and AYA population are rare. They include "paediatric" sarcomas (e.g. rhabdomyosarcomas), "adult type" soft part sarcomas and bone tumours with a peak incidence around adolescence. The objective was to study epidemiology of bone and soft-tissue sarcomas in French children and AYAs.

**Materials and methods** : Data from the the French National Registry of Childhood Solid Tumours were used to study sarcomas among children (0-14 years) from 2000 to 2008. Data from twelve General Cancer Registries (covering 14% of the French population) were used to analyse sarcomas among AYAs (15-24 years) from 2000 to 2008.

**Results** : From 2000 to 2008, 1721 sarcomas in children and 272 sarcomas in AYAs were included, with incidence rates of 109 and 142 per million children and 137 and 154 per million AYAs for bone and soft-tissue sarcomas respectively. Differences in the spectrum of sarcomas among children and AYAs were observed : for chondrosarcomas (representing 2.7% and 12.7% of bone sarcomas respectively), for Ewing tumours (representing 44.9% and 34.9% of bone sarcomas respectively), and for rhabdomyosarcomas (representing 55.3% and 17.8% of soft-tissue sarcomas respectively). AYAs had lower 5-year survival than children for osteosarcomas (37.8 [22.0-55.1] vs. 73.1 [68.0-77.6]), for Ewing tumours (56.6 [34.3-73.8] vs. 73.8 [68.6-78.4]), and for rhabdomyosarcomas (35.7 [13.0-59.4] vs. 69.7 [65.4-73.5]). The survival of these tumors has improved in recent years in children and AYAs except for osteosarcoma among AYAs for whom survival has stagnated at around 50%.

**Discussion and conclusions** : Collaboration between paediatric and medical oncologists is fundamental for frontier sarcomas. International collaborations have already increase clinical and therapeutic knowledge for these diseases. Progresses remain to be made in biological collections, translation of biological knowledge in adapted clinical trial regardless of age and early access to new drugs.

## POSTER 54 pediatric cancers : Childhood and adolescent cancer incidence in granada 1985-2013

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### ABSTRACT

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**Objective :** To analyse childhood and adolescent cancer incidence in Granada during the period 1985-2013, by sex and major diagnostic groups, and to analyse incidence temporal trends by sex

**Design :** population-based cross-sectional study Data were extracted from the Granada Cancer Registry, a population-based cancer registry covering a population close to 900,000 inhabitants (197.754 < 20 years in 2013). All newly cancer cases diagnosed in children aged 0-14 years and adolescent aged 15-19 years during 1985-2013 were included. 12 major diagnostic groups, according to the International Classification of Childhood Cancer, 3rd edition (ICCC-3), were considered. Crude rates, age-specific incidence rates and age-standardized incidence rates (European standard population, ASR-E) were calculated. Rates were expressed as cases per million population. ASR-E log-linear regression model (regression Joinpoint) was used to estimate annual percentage change (APC), IC 95% and turning points in trends

**Results :** Through 1985-2013, 634 cases of childhood cancer and 351 cases in adolescents were diagnosed in Granada. The childhood cancer ASR-E in Granada in 1985-2013 was 140.2 per million, with a male to female ratio of 1.1. Crude rates in adolescents were 202.2 and 185.2 per million in boys and girls respectively (193 per million in both sexes). The most common cancer types in children were leukaemias (25.9%), central nervous system tumours (21.8%) and lymphomas (14.4%); as in adolescent were lymphomas (21.9%), malignant melanoma (21.9%) and leukaemias (14.2%). Childhood cancer time trends shows a stabilization of rates in boys (APC = +1.0%) and a statistically significant increase in girls (APC = +2.1%). In adolescents APC are very similar between boys and girls (+2.8% and +2.4% respectively)

**Conclusions :** Granada has low rates of childhood cancer incidence in relation to Spanish cancer registries (Spain = 155.0 per million, for the period 1983-2007). Adolescent cancer shows a similar rate (187.8 per million) although time period should be noted.

## ORAL 55 Quality of Care : Differentiated thyroid cancer in Belgium: a population-based study on pre-, per-, and post-surgical approach

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### ABSTRACT

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**Objectives** : Previously, we reported on considerable variation in pre-surgical and surgical management alongside geographical variation in incidence of differentiated thyroid cancer (DTC) in Belgium (2004-2006). By extending these analyses to a more recent cohort and also studying post-surgical management, we aim to provide further insights in the temporal and geographical variation of DTC and in the implementation of clinical guidelines, published from 2006 onwards.

**Methods** : All patients diagnosed with thyroid cancer between 2009 and 2011 were selected from the database of the Belgian Cancer Registry (n=2,659). Detailed information on the tumors and related procedures was extracted from the pathology protocols. Coupling with information on reimbursed clinical acts and medication will enable in-depth analysis of pre-, per-, and post-surgical management.

**Results** : Revision of all available pathology protocols (n=2,498) showed that information on surgery type is available in almost 90% of cases of whom 82% underwent (sub)total thyroidectomy. Thyroid weight is reported in 80%, margin status in 59%, and tumor size in 89%, respectively. As expected, most thyroid cancers are DTC (91%), mainly of the papillary type (86%). Concerning the pre-surgical phase, the evolution in the use of fine needle aspiration and the impact of thyroid gland weight as a determinant for thyroid surgery will be studied. For the surgical phase, the evolution of synchronous lymph node dissection will be evaluated. At the post-surgical level, the prevalence of permanent hypoparathyroidism will be investigated, and the administration of high dose radioactive iodine.

**Conclusions** : This ongoing observational study aims to map geographical and temporal differences in the incidence and clinical management of DTC in Belgium. As care in accordance to evidence-based guidelines has been shown to improve outcomes, deviation from these guidelines might point to specific measures to be taken for optimization of quality of care.

## ORAL 56 Quality of Care : Latin language European cancer registries and their role in the assessment of quality assurance in breast cancer care

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### ABSTRACT

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**Background :** The Joint Research Centre was assigned the task of coordinating the European Commission Initiative on Breast Cancer (ECIBC), which aim is to contribute to improve health and to reduce health inequalities in Europe by ensuring the quality of breast cancer services. Among the ECIBC main tasks, a new version of the European guidelines for breast cancer screening and diagnosis based on evidence will be developed, together with a platform of high-quality guidelines covering all processes of breast cancer care, both of which will underpin the voluntary European quality assurance (QA) scheme for breast cancer care. In order to assess the impact of the European QA scheme the cooperation with population based cancer registries is important. Objectives Population cancer registries are valuable tools to monitor quality of care. This study examines the possibility of cancer registries from Latin language countries to assess the compliance with clinical guidelines and to monitor at population level the quality of structures, processes and outcomes.

**Methods :** Pubmed searches were performed to identify studies published by cancer registries from European countries regarding compliance of diagnosis and treatment with the clinical guidelines for breast cancer and/ or data about quality assurance for breast cancer patients. A manual evaluation of titles and abstracts was performed to identify those from Latin language speaking countries.

**Results :** 78 studies fulfilling the inclusion criteria specified in the methods section were found. Out of these 18 are from Latin language speaking countries, mostly from Italy.

**Conclusions :** There are few population cancer registries among Latin countries that publish studies which refer to quality assurance or implementation of guidelines in breast cancer. As the European QA scheme will be developed to harmonise and improve care throughout Europe, cancer registries support will be crucial for evaluating the impact of the ECIBC at population level.



## ORAL 57 Quality of Care : Increasing adherence to standard care for early stage breast cancer in Navarra

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### ABSTRACT

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**Objectives** : To provide population-based data on the extent, and variation, of adherence to “standard care” for female breast cancer diagnosed at early stage in 2013 compared to 2005 in Navarra.

**Materials and methods** :Incident breast cancer cases diagnosed at early stage (T1N0M0) were selected from two high resolution studies including patients diagnosed in 2005 and 2013. Data were obtained from the Navarra Cancer Registry and clinical records. We calculated the proportion of patients treated with breast-conserving surgery plus radiotherapy (BCS + RT), considered as standard care for early stage. Logistic regression was used to estimate the odds of receiving this standard care, versus other treatment, in 2013 compared to 2005, adjusting by age, tumour size and multifocality.

**Results** : A total of 324 T1N0M0 breast cancer cases were included, 161 diagnosed in 2005 and 163 in 2013. The mean age at diagnosis was 58 (SD 12) and 62 (SD 12) years in 2005 and 2013, respectively. Among the cases diagnosed in 2005, 77.6% received BCS + RT. This proportion varied by age, being 76.2%, 86.7% and 38.1% in women <50, 50-69 and ≥70 years old, respectively. Among the cases diagnosed in 2013, 80.5% received BCS + RT. This proportion was 89.7%, 86.8% and 59.0% in women <50, 50-69 and ≥70 years old, respectively. The odds of receiving this standard care was higher in cases diagnosed in 2013 compared to those in 2005 (adjusted OR: 1.94; 95% CI: 1.03, 3.65; p=0.039). In 2013, compared to 2005, differences by age group decreased; however, the odds of being treated with BCS + RT remains significantly lower in patients ≥70 years old compared to younger women (adjusted OR: 0.19; 95% CI: 0.08, 0.45, p<0.001).

**Conclusions** : This study revealed increasing adherence to standard care for early stage breast cancer in Navarra. However, the results suggest that there is still room for improvement, especially in older women. Funding: FIS (PI07/0700), La Caixa 2015, CIBER Epidemiología y Salud Pública.

## ORAL 58 Quality of Care : Completeness of the examination of cancer cases in a multidisciplinary team meeting

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### ABSTRACT

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**Objectives** : To determine the completeness of the examination of cancer patient cases in a multidisciplinary team meeting (MDTM), to study the factors that can affect this examination in the population.

**Methods** : Completeness was estimated by comparing the database of the Tarn cancer registry containing all the inhabitants of this department for whom cancer was diagnosed between 2010 and 2013 with the list of patients living in Tarn whose cases were discussed during a MDTM. Determinants of the case discussion in MDTM were studied from data collected in medical records (age, sex, period, stage at diagnosis or other prognosis factor).

**Results** : 11060 cases were studied. 72% were discussed during a MDTM. The proportion varies with the age of the patient. It decreases in older patients. It is different between men (76%) and women (67%), and varies depending on the tumor site. It also varies depending on the stage of the tumor, the most serious tumors are less often discussed in MDTM. The frequency of examination in MDTM increased steadily over time (69% in 2010 to 74% in 2013)

**Conclusion** : In France the discussion CPR is mandatory for all new cancer cases. It is not what we observe. It is not certain that the cases discussed are those who are most in need.

## ORAL 59 Quality of Care : Delay in care management for haematological malignancies in cote d'or department, France

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### ABSTRACT

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**Objectives** : Management of Hematological Malignancies (HM) needs to be performed by a specifically trained MD. The objectives of this work were to describe illness trajectories of patients with HM and the determinants of access to the hematologist and delay to treatment.

**Methods** : Data of HM diagnosed from 01-01-2009 to 12-31-2011 in the specialized registry of the Côte d'Or area were analyzed. HM were categorized into 4 groups i.e. Aggressive Disease (AD), Indolent Lymphoma (IL), Multiple Myeloma (MM) and Chronic Myeloid Malignancies (CMM). A logistic regression allowed to model effect of covariates on the access to a hematologist (age at diagnosis, sex, symptom, type of first medical contact, lymphoma's stage, deprivation index). A linear regression was used to model the delay in access to specialist and the delay in treatment.

**Results** : The study of 1019 HM: 288 AD, 350 IL, 135 MM and 246 CMM, showed that the number of medical contact varied from 1 to 3, with more of 80% of patient with at least 2 contacts. The first contact was the general practitioner (66%) and was followed by another specialist (60%) and then the hematologist (50%). 46% of the patients with CMM were seen by an hematologist compared to 73% of patients with AD. The diagnosis of the disease was made before the hematologist consultation in 74% of cases. Delay in access to a hematologist was lower for cases with AD, with a median equal to 24 days for AD and 61 days for IL. A similar trend was found for delay in treatment. Youngest patients were more significantly seen by a hematologist than oldest patients but the delay of the access to the consultation was not different. The delay to treatment was significantly reduced in advanced stage compared to stage I-II for IL and MM.

**Conclusions** : These data are one of the rare published in the HM management in the general population that will allow to identify the determinants of the access to treatment and probably to have an impact on patient outcome and quality of live.

# ORAL 60 Quality of Care : Management and prognosis for pancreatic cancers in the reggio emilia high resolution cancer registry, according to stage

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## ABSTRACT

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**Objectives** : The prognosis of pancreatic adenocarcinoma (PDAC) is extremely poor. Advances in diagnostic procedures, adjuvant and palliative chemotherapy (CT) have occurred in the last decade. The analysis on data from High Resolution Cancer Registry aimed to investigate the management of PDACs diagnosed in Reggio Emilia province and its effect on the risk of death.

**Materials and methods** : Period of diagnosis (2008-10,2011-12), sex, age, subsite (head, body, tail, other), morphology (unspecified [NOS], adenocarcinoma [ADK]), combined treatments (curative [CS] and palliative surgery [PS], associated or not to chemo/radiotherapy [ $\pm$ CT/RT]; CT/RT alone; none) were analysed, according to stage (I, II, III, IV, unknown). 3-year relative survival (RS) and relative excess risks of death (RERs) using multivariable models (including age, stage, treatment and period of diagnosis) were estimated. Life status was updated to the end 2015.

**Results** : The 550 analysed patients (50% males) were often >75 years (53%) and at stage IV (59%). Tumours were more commonly ADK (60%) and in the head of pancreas (60%). 3% cases were stage I, 23% stage II, and 10% stage III. 50% of cases were not treated and the 14% of cases who received CS were mainly in stage I-II and <75 years. Proportions of stage and CS did not differ between the study periods. Instead, the proportion of 25-64-year patients increased (48% vs 51%,  $p=0.06$ ) and of PS decreased overtime (64% vs 36%,  $p=0.112$ ). Overall RS was 5% (range 20% for stage I; 2% for stage IV), reaching 30% (range 80%; 21%) for surgically treated patients. There were no differences in survival between patients treated with CT/RT alone or associated to PS, but the risk of death decreased overtime (RER=0.8,  $p=0.03$ ).

**Discussion and conclusions :** PDAC is diagnosed mainly at advanced stage and only a minority of patients can undergo curative surgery. Centralising treatment may improve prognosis, however the increase of diagnoses at young ages points the need of research and prevention.

## POSTER 61 Quality of Care : Overdiagnosis of thyroid cancer in the Marne and Ardennes Departments of France from 1975 to 2014

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### ABSTRACT

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**Objectives** : To estimate the contribution of overdiagnosis to the incidence of papillary thyroid cancer in Marne and Ardennes.

**Methods** : Incidence rates were calculated based on data from the specialised Marnes-Ardennes thyroid cancer registry, for cancers diagnosed between 1975 and 2014, by age category and by five-year period. The population was divided into two groups according to pTNM classification at diagnosis (i.e. localised or invasive). Overdiagnosis was defined as the difference in incidence rates between the invasive cancer and localised cancer groups. This rate was then divided by the incidence rate in the localised cancer group for the most recent period (2010-2014) to obtain the proportion of cancers attributable to overdiagnosis.

**Results** : In total, 2008 patients were included. The proportion of incidence attributable to overdiagnosis for the period 2010-2014 was estimated at 7% and 62% in men and women aged <50 years respectively, and at 65% and 73% respectively in men and women aged ≥50 years.

**Conclusion** : We observed a high proportion of cancers attributable to overdiagnosis. This finding raises the issue of patient management, with the risk of overtreatment, and the repercussions on quality of life for patients diagnosed with cancer.

## POSTER 62 Quality of Care : Incidence of hematological malignancies and patient management in the elderly over a 30-years period in cote D'or

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### ABSTRACT

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**Objectives :** In the developed world, the elderly population is increasing dramatically and many haematological malignancies (HM) increase too. The aim of this study is (1) to describe the evolution in the incidence of HM by 5-year period since 1983 in three distinct age groups (<65, 65-74 and >75) in the Côte d'Or department and (2) to describe patient management of two age groups (65-74 and >75) by 5-year period since 1983.

**Methods :** Data were extracted from the RHEMCO database, which includes all cases of HM from 01-01-1983 to 31-12-2012. Incidence was analysed by sex, age and 5-year period using Stata software (V10). Treatment data were recorded from clinical charts.

**Results :** During the period studied, 7560 HM were registered. Among them 62% were over 65, 38% over 75. Median age at diagnosis increased statistically for NHL (69 to 72), MPN (63 to 72) and MDS (75 to 81). The sex-ratio remained stable during the whole period in all HM, except for AML in which women's incidence was joining men's incidence (sex-ratio =1.06). The increase in incidence was significant for patients over 75 with CLL (+2%), MDS (+4%), MPN (+3%), NHL (+3%) and MM (+2%). For patients over 75 with HL the women's incidence had significantly climb up (+9%) contrary to men's incidence (-4%). 76% of patients aged 65-74 years were treated compared to 62% of patients over 75. Patients over 75 with MDS are more treated in the last period. Surprisingly, 53% of these patients with NHL were treated in the last period contrary to 74% during the first period. The same pattern was found for CLL.

**Conclusion :** The increasing of HM's incidence in patients over 75 was not only explained by the worldwide increasing of elderly population. Unfortunately, patient management didn't follow this way with a decrease of patients undergoing treatment in recent years in some entities. It is important to understand the reasons of this, and to propose solutions.

## POSTER 63 Quality of Care : Diagnosis and therapeutic management of oral cavity cancers in France: a population-based study

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### ABSTRACT

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**Context-Objectives** : Oral cavity cancers (OCC) have a poor prognosis and are common in France. Their early detection and management are subject to numerous recommendations and guidelines. The objective of this study was to describe the conditions of diagnosis and treatment of these cancers in general population. The results may fuel the public health authorities' reflections in order to evaluate current health policies and improve the prognosis of these patients.

**Materials and Methods** : A high-resolution population-based study was conducted using registries of Francim network, on 1 089 tumors OCC (International Classification of Diseases for Oncology - third edition - ICD-O 3: C01 to C06, C09, C10.8) diagnosed in 2010. Age, sex, socioeconomic status, comorbidities, characteristic of tumors, treatment, staging performed and phases of the initial treatment were collected from medical records.

**Results** : The tumors were diagnosed late (65.5% stage III-IV), mainly after the onset of symptoms. Tumors  $\leq 2$ cm accounted for 26.5% of cases. Only 2.6% were diagnosed after a routine clinical examination. A multidisciplinary meeting had taken place in 93.1% of cases. The assessment included a panendoscopy in 76.6% of cases, a cervical CT scan or RMI in 91.4% and a chest CT scan in 82.5%. The vast majority of patients (92.7%) had received treatment, with surgery in 66.1% of cases and/or radiotherapy in 71.9%. The median time between diagnosis and first treatment was 34 days [Q1: 21-Q3: 52]. Where the first treatment was radiotherapy, the interval was 55 days [Q1: 40-Q3: 70]. The socioeconomic status of patients was not associated with these delays.

**Conclusion** : Despite the recommendations for early detection and prompt treatment, diagnoses are often made late and times to treatment with radiotherapy seem long. However, diagnostic assessment is broadly consistent with the recommendations and multidisciplinary treatment decisions are widespread.



## ORAL 64 Incidence : Trends in tobacco-related cancers in tarragona, catalonia, spain (1982-2011)

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### ABSTRACT

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**Objectives** : In Catalonia, the prevalence of smoking in men decreased from 58.3% in 1982 to 35.8% in 2011. In women, the prevalence increased from 20.0% in 1982 to 26.6% in 2002 and then decreased to 23.4% until 2011. The aim of the study was to analyse the changes in incidence and mortality trends of the main tobacco-related cancers in Tarragona province during the period 1982-2011.

**Materials and methods** : Incidence and mortality data were provided by the Tarragona Cancer Registry. Trends from 1982 to 2011 in Tarragona residence people incidence and mortality rates of lung (C33-34), bladder (C67), larynx (C32) and tobacco-related cancers (ICD-10:C00,C03-06,C09-15,C25,C32-34,C64-68) as a whole have been obtained using Joinpoint analysis.

**Results** : In men, the annual percentage of change (APC) of the incidence rates of tobacco-related cancers was 2.4% during the period 1982-1998, to decrease (-0.8%) in the period 1998-2011. This behaviour was also observed in lung (1982-2003 APC: 1.7%, 2003-2011 APC: -1.4%), bladder (1982-1998: 3.3%, 1998-2011: -0.5%) and larynx (1982-1994: 1.8%, 1994-2011: -2.5%) cancers. In contrast, mortality rates had two points of change in tobacco-related cancers (1982-1985: 8.0%, 1985-2004: 0.7%, 2004-2001: -1.8%) and lung cancer (1982-1986: 7.2%, 1986-2005: 1.0%, 2005-2001: -1.6) and any point in bladder (-0.4%) or larynx (-1.7%) cancers. In women, the analysis did not show any significant point, neither in incidence nor in mortality. By tumours, tobacco-related cancers as a whole and lung cancer rose annually 3.2% and 5.0% respectively in incidence, and 2.7% and 4.2% in mortality. Bladder cancer incidence and mortality rates remained stable (0.9% and -0.1% respectively).

**Discussion and conclusions** : In men, after decades of increase, tobacco-related cancer incidence and mortality present a clear decrease as a result of the reduction in smoking prevalence. In women, an increase has been observed, also consistent with changes in smoking prevalence.

## ORAL 65 Incidence : French Incidence Trends for Human Papilloma Virus Related and Unrelated Head and Neck Cancers: a population-based study

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### ABSTRACT

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**Context-Objectives :** Human papilloma virus (HPV) has been recognised recently like a carcinogenic factor for a subset of head and neck cancers (HNC). In Europe, France has one of the highest incidence rate of HNC. The aim of this study is to explore changes in HNC incidence in France over the period 1980-2012, potentially in relation with infection by HPV.

**Materials and Methods :** Data from eleven general cancer registries for cases diagnosed between 1975 to 2011 were analysed. HNC were classified into two anatomical groups, potentially HPV related (HPV-R) and HPV unrelated (HPV-Unr), based on the topography of the HNC. Incidence was analysed separately in each group, using age-period-cohort models with a one-year projection to estimate incidence in 2012.

**Results :** Among men, the age-standardized incidence rate of all HNC decreased but less dramatically for HPV-R sites. Over the recent period 2005-2012, the annual percent change (APC) was -3.5% and -5.4% respectively for HPV-R and for HPV-Unr HNC. Among women, the age-standardized incidence increased but more rapidly for HPV-R sites. Over the recent period 2005-2012, the APC was +1,9% per year for HPV-R HNC and -0,4% for HPV-Unr HNC. The preferential growth of HPV- R HNC was observed from the cohorts born in 1930-1935.

**Discussion-Conclusion :** The incidence trends of HNC are different for HPV-R sites compared to HPV-Unr sites. Due to the high prevalence of tobacco and alcohol consumption

in France, the HPV-R group is actually highly contaminated by non-HPV-related cases. However, the differential trends observed between the two groups support the hypothesis that increasing HPV prevalence in the population played a role in this pattern. Also, this interpretation is consistent with observations made in other countries, with the French studies of HPV prevalence in the HNC as well as the evolution of sexual behaviour in France.

## ORAL 66 Incidence : Basal cell carcinoma incidence trends in two departments of the north-east of france: a population-based study

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### ABSTRACT

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**Objective** : Basal cell carcinoma (BCC) is the most common cancer in many countries worldwide. Despite its favorable prognosis, it represents an important healthcare burden. Few registries record these tumors and few population-based incidence data are available. The objective of this study was to provide incidence rates of BCC in two French departments of the North-East of France and its time trends.

**Methods** : Data from the two French cancer registries that routinely collect the first BCC per patient were used: the Doubs cancer registry for the period 1980-2012 and the Haut-Rhin cancer registry for the period 1991-2012. Time trends were assessed by estimating annual percentages of change (APC) on age-standardized incidence rates using Joinpoint regression analysis.

**Results** : In 2010-2012, the world age-standardized incidence rates of BCC were 89.8 [95%CI: 84.6-95.2] for 100,000 person-years in Doubs for men and 83.6 [78.6-88.9] for women; 86.7 [82.6-91.2] in Haut-Rhin for men and 76.7 [72.8-80.9] for women. In both genders, the head and neck region was the most often affected (68%), followed by the trunk (17%). In Doubs, incidence rates increased constantly until 1999 for men (APC 5.3 [1.1-6.4]) and until 2001 for women (APC 4.7 [3.6-5.8]) then the increase lowered to 1.5 [0.3-2.8] and 1.9 [0.1-3.7] for men and women, respectively. In Haut-Rhin for men, incidence increased constantly until 2000 (APC 2.54 [1.0-4.1]) then stabilized; for women, it increased constantly over the whole period (APC 1.0 [0.7-1.4]). All along the periods and for each department, incidence in men was higher than in women.

**Discussion and conclusions** : Incidence rates in North-East of France are intermediate to high compared to other European countries. For men and women in Doubs and for men in Haut-Rhin, a slowing down of the increase was observed since 2000. Further explorations have to be conducted in order to explain the observed trends.

## ORAL 67 Incidence : The burden of rare cancers in Italy: the Italian association of cancer registries (AIRTUM) experience

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### ABSTRACT

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**Objectives** : Estimates of the burden of rare cancers (RC) are available for Europe but country-specific data are still lacking. The AIRTUM ([www.registri-tumori.it](http://www.registri-tumori.it)) dedicated a monograph to this issue to provide a comprehensive description of the RC burden in Italy.

**Material and methods** : Data were provided by the AIRTUM database. According to the definition and list of RC proposed by RARECAREnet project ([www.rarecare.net](http://www.rarecare.net)), 198 cancer entities with incidence rate (IR) <6/100000 per year in the European population are rare. The monograph provides estimations of incidence, survival, and prevalence of all these 198 RCs in Italy.

**Results** : For all 198 rare entities IR (based on 339,403 cases) was 147/100000 per year; about 89,000 new diagnoses of RC in Italy (25% of all cancers) were expected. Five cancers out of the 198 RCs in Europe, were not rare in Italy: diffuse B lymphoma, squamous cell carcinoma of larynx, multiple myeloma, hepatocellular carcinoma and carcinoma of thyroid gland; 139 RCs had an IR of <0.5/100000 (about 7100 cases in Italy), 25 RCs had an IR of 0.5-1/100000, (10000 cases); 29 RCs had an IR of 1-6/100000 (41000 cases). Five-year RS (based on 254821 cases) was on average 55%, lower than common cancer RS. About 900000 people were alive in Italy with a previous diagnosis of a RC in 2010. The highest prevalence was observed for rare haematological diseases (278/100000) and rare tumours of female genital system (265/100000).

**Conclusions** : The data available for Italy are of major interest for health care planners, researchers and clinicians interested in very specific cancer histotypes. This monograph was of particular interest from the CRs perspective because it introduced new data quality checks. It showed that population-based CRs with high quality data are the only source of information to describe rare cancers burden. Moreover the frequency of RC can be so low that only by pooling CRs data in a big national or international database is possible to provide robust and reliable estimates.

## ORAL 68 Incidence : Trends in the incidence and net survival of Hodgkin Lymphoma (HL) based on histologic subtype : 1994-2010

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### ABSTRACT

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**Objectives** : We have investigated the recent developments in the incidence and net survival of HL, in France during 1994-2010, based on histological subtype and age to explain the relative stagnation of the survival in HL.

**Methods** : This analysis was performed using the FRANCIM network database, combining data from all French cancers registries (20% of the national population). We have selected new HL cases, between 1994 and 2010, from 14 registries with at least 5 years of consecutive recordings. These patients were followed-up until 30th June, 2013. Standardized incidence indicators and net survival (Pohar-Perme) are presented according to sex, age, period, and histologic subtype. Trends in incidence were estimated by the "Average Annual Percent Change".

**Results** : The analysis included 4,180 incident HL cases. The two major subtypes registered are scleronodular HL (61%) and mixed cellularity HL (14.8%). In the two sexes, standardized incidence rates of HL significantly increased during 1994-2010. Histological subtype analysis showed that only the scleronodular subtype significantly increased in the 15-24y and 25-44y age groups in men and in the 25-44y age group in women. The 5-year standardized net survival for HL is 81% (79-82) in men and 87% (85-88) in women. Net survival for scleronodular subtype is higher in the two sexes than for the mixed cellularity subtype. We observed a 6% increase in net survival during the study period for only scleronodular HL subtype in the over 45y age groups (11% for 45-64y age group; 28% for over 65y).

**Discussion and Conclusion** : Our histological subtype analysis highlights an increased incidence of scleronodular HL in young patients and increased survival in older patients.

## POSTER 69 Incidence : Female lung cancer trends, staging and histology in Hérault, France

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### ABSTRACT

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**Objectives** : In France, the incidence of lung cancer has decreased since 2000 in men, but remains strongly on the increase in women. Compared to other departments (administrative areas) in France, incidence of, and mortality from lung cancer in women were highest in the Hérault department. The purpose of this study was to examine, using data from the cancer Registry of the Hérault, trends in lung cancer in women over a period of 17 years.

**Material and Methods** : All invasive cases of lung cancer (ICD-O 3 : C33-C34) diagnosed in women between 1995 and 2012 in the Hérault Department were included. Incidence data, by age, stage and histology were derived from the cancer registry. Mortality data were derived from the National Institute of Medical Research (CépiDC-INSERM). Trends in incidence and mortality were estimated by modeling the log-incidence according to year of diagnosis.

**Results** : Among 9 675 invasive lung cancers recorded in the Hérault over 17 years, 2 950 were diagnosed in women, and 30.2% were aged less than 50 years old at diagnosis. The annual rate of change of incidence and mortality were respectively +7% and 4%, this rate increased particularly in the latter years of the study period. Breast cancer mortality – usually the primary cause of mortality in women – dropped below lung cancer mortality in 2012. Increase in incidence was mainly constant and concerned all ages, stages and histology. The greatest increases rises were observed for women aged over 50 years and especially for adenocarcinoma and early stages (I-II).

**Discussion and conclusions** : In the Hérault department, a substantial increase in incidence and mortality was observed over the 17 year study period. This is mainly due to the high level of smoking in the female population, which may in turn be related to several factors, and particularly the high level of unemployment in this department.

## POSTER 70 Incidence : Recent trends in cancer incidence in the basque country

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### ABSTRACT

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**Objective** : the main aim of this study is to analyze trends from 2000 to 2011 in selected cancers in residents of the Basque Autonomous Country.

**Methods** : Cases were drawn from Basque population-based cancer registry. All malignant tumors are included, except non melanoma skin cancer. Tumors were classified according to CIE 10. Incidence rates were calculated as the average annual number of cases per 100,000 person-years. Age-standardized rates (ASRs) were calculated by the direct method using the European standard population and trends for the period 2000-2011 were evaluated using Join point regression analysis.

**Results** : From the year 2007 to 2011 there were an average of 12,636 new malignant tumors a year in the Basque Country. The crude incidence rate was 722 per 100,000 in men and 455 in women with an ASR of 535 in men and 304 in women. The global incidence in men has not changed significantly from the year 2000 to 2011. In women, however, the rates have increased significantly, 1.3% annually. Incidence rates in men increased significantly in cancer of thyroid gland (7.6% annually), colon-rectum (2.3%), vesical and bile ducts (2.2%). The increase in prostate was significant from 2000 to 2004. In women, incidence rates increased significantly in cancer of thyroid gland (10% annually), lung (7%), bladder (3.9 %) and breast tumors (1.1%). The increase in colon-rectum was significant only from 2007.

**Conclusions** : During the last decade significant increases in cancer rates have been observed in Basque country in various locations. Those increases should be taken into account in order to implement prevention and, if appropriate, early detection programs to control those cancers.



## POSTER 71 Incidence : Trends in incidence of cutaneous melanoma by sex, age, morphology and topography in 1994-2009 and predictions for 2020

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### ABSTRACT

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**Objectives** : Malignant melanoma is the most aggressive skin cancer and its incidence has been increasing in the last decades, emerging as a public health problem. To analyze the incidence of melanoma in the Northern Region of Portugal between 1994 and 2009 and to estimate the number cases for 2020.

**Methods** : Melanoma cases diagnosed in 1994-2009 were extracted from the North Region Cancer Registry of Portugal (RORENO) database. A total of 2398 malignant melanoma were studied by sex, age, topography and morphology, for three periods of time. JoinPoint regression was used to analyze incidence trends. Predictions were performed using the Poisson regression models proposed by Dyba and Hakulinen.

**Results** : The incidence of melanoma in 1994-2009 increased in both sexes (the estimated annual percent change was 6.3% in men and 5.3% in women). There was an increased incidence of melanoma over the three periods in both sexes (from 3.19 in 1994-1999 to 5.50 in 2005-2009). For men, melanomas occurred mainly in the trunk (from 0.8 in 1994-1999 to 1.8 in 2005-2009) and for women in the lower limbs (from 1.36 in 1994-1999 to 2.95 in 2005-2009). Between the periods 2000-2004 and 2005-2009 there was a 12 % decrease in cases of unspecified topography. The nodular and superficial spreading melanoma histological subtypes predominated in both sexes (from 0.45 in 1994-1999 to 2.27 in 2005-2009) and lentigo maligna occurred less frequently (from 0.08 in 1994-1999 to 0.30 in 2005-2009). There was an increase in incidence rates in all age groups, being higher in the 70+ age group in both sexes (from 9.24 in 1994-1999 to 19.11 in 2005-2009). Between 2009 and 2020 an increase of about 33% is expected in both sexes.

**Conclusions** : The incidence of melanoma in Northern Portugal is expected to continue rising. The identification of changing patterns in risk between age groups or in exposure of different anatomic sites is key to outline the best population approach towards prevention and early diagnosis.

## POSTER 72 Incidence : Incidence and mortality trends of thyroid cancer in granada, 1985-2012

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### ABSTRACT

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**Objectives** : To analyze incidence and mortality trends of Thyroid Cancer (TC) in Granada (south of Spain) during the period 1985-2012, by sex, age and histological type Materials and methods Design: population-based cross-sectional study Sources: Granada Cancer Registry, which covers a population close to 900,000 inhabitants.

**Study Subjects** : All incident and mortality cases of TC (C73 according to ICD-O-3) diagnosed between 1985 and 2012 and residents in Granada province. Statistical analysis: log-linear regression (Joinpoint regression) with standardized rates (ASR-E European standard population) to estimate annual percentage change (APC), CI 95% and turning points in trends.

The **results** are presented by sex, age group (<45 and ≥ 45) and histological type: papillary (8260, 8340-8344, 8350), follicular (8330-8333, 8335), medullary (8345- 8346), anaplastic (8021) and others Results During the period 1985-2012 there were 1.166 diagnosed cases of TC in Granada (79% in women). Incidence trends significantly increased in both men (APC: +5.0%) and women (APC: +4.7%) over the study period. The most common histological types were: papillary (75.3%) and follicular (12.2%) in both sexes. The incidence has increased during the study period mainly due to papillary carcinoma, which increased annually around 6% in both sexes. By age group a trend significant increase was also detected, although this was higher in men and women over 45 years (APC: + 5.7% and + 5.4% respectively). TC mortality trend during this period was stable in both men (APC: - 0.7%) and women (APC: -1.4%)

**Conclusions** : Improved diagnostic methods and early detection may have contributed to the increased incidence of TC. Mortality remains at previous years levels and this may be due to treatment and therapeutic methods against TC progress, although further study is needed to understand the real reason of this fact.

## POSTER 73 Incidence : Bone metastasis and site of primary tumour : a population based study

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### ABSTRACT

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**Objectives** : Metastases are the most common malignancies involving bone; they represent an important clinical problem compromising the patient' quality of life and associated with increasing use of healthcare resources. To describe the impact of bone metastasis in clinical activity and to differentiate the bone metastasis by site of primary tumour we selected all the demission discharges with code of bone metastasis in the area of Tuscan Cancer Registry in the year 2013.

**Methods** : We retrieved demission discharges from January 1, 2013 to December, 31, 2013 to identify the patients inhabitants in the area of Florence with diagnosis of bone metastasis (ICD IX code 198.5). Information on dates of admission and demission discharge, sex and date of birth for each patient were retrieved. For selected patients data on primary tumour, particularly regarding site, histological subtype, and date of diagnosis, were extracted from the archive of Tuscan Cancer Registry, active from 1985 in the area of Florence and Prato.

**Results** : We selected 2984 demission discharges related to 721 patients with diagnosis of bone metastasis in the study period. For all cases we also found information on primary tumour in the archive of Tuscan Cancer Registry. Site of primary tumour was identified for 686 (95%) patients, 342 male and 344 female patients respectively, while in 35 patients bone metastasis were of unknown origin. One of three patients identified had breast primary cancer (225, 33%); lung and prostate tumours were the site of bone metastasis for 204 (30%) and 126 (18%) patients, respectively.

**Conclusions** : Our retrospective study on demission discharges of patients with bone metastasis revealed, through the analysis of information collected by a cancer registry active from 1985, that the main sites of primary tumour in patients with bone metastasis were represented by the breast and lung cancer.

## POSTER 74 Incidence : Colorectal cancer incidence in west region of romania, 2008-2012

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### ABSTRACT

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**Introduction :** Cancer is a major cause of suffering and death in the western region of Romania; its high incidence and mortality, the psycho-social impact on patients and their families, jeopardizing the well-being of the entire society. Burden of disease in our development region is dominated by bronchi-pulmonary, colon-rectum, breast, stomach, cervical and prostate cancers, which represents more than 53% of all incident cases.

**Material and methods :** The purpose of this study is to identify critical high incidence for the colorectal cancer, per counties, in the western region of Romania. Timisoara Regional Cancer Registry coded as EUROMTIM is one of eight population-based Romanian cancer registries and a GRELL, ENCR, IACR member. The information used, regarding cancer cases notified in 2008, 2009, 2010, 2011 and 2012 was provided by its database. Population denominators come from the Romanian National Institute of Statistics.

**Results and discussions :** Statistic descriptive showed that the annual incidences of this particular cancer (658 new cases/year representing 12,1% of all new cancer cases) are higher in man (392 new colon and rectum cancer cases/year) than in woman (266 new cases/year), the critical age groups in both sexes was 70+. The colon and rectum cancer mortality remains high (385 deaths/year, representing 16.7% of all cancer deaths). There is no important differences in the burden of disease among areas of the region.

**Conclusions :** West Romania colon and rectum cancer 2008-2012 data analysis, revealed gender differences in incidence and mortality. The inequalities can be attributed to socioeconomic, demographic, genetic, environmental and/or behavioral factors. Central and local Authorities of Public Health should assure more efficient Health Promotion and Prevention Programs, as well as the proper development of the Regional Cancer Registries.

## POSTER 75 Incidence : Incidence Trends of Cutaneous Melanoma, Squamous and Basal Cell Carcinoma in Cluj County Romania

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### ABSTRACT

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**Objectives :** Skin cancers, specifically melanoma, basal cell (BCC) and squamous cell (SCC) carcinoma, registered in the last decades an increasing incidence worldwide. Objective: to study trends of the incidence of cutaneous melanoma, BCC and SCC in Cluj County, from 1998 to 2011.

**Methods :** Data concerning all cases of cutaneous melanoma, BCC and SCC, diagnosed between 1998 and 2011, were obtained from the North-Western Regional Cancer Registry. Incidence rates were standardized by the direct method (ASIR), using the world standard population. Trends and annual percentage change (APC) of incidence rates were calculated by joinpoint regression analyses.

**Results :** A total of 2692 cases were reported: 63.71% (1715 cases) BCC, 21.55% (580 cases) melanoma and 14.75% (397 cases) SCC. The mean age was 57 years for melanoma, 66 for BCC and 71 for SCC. The M/F ratio was 0.89 for melanoma, 1.17 for BCC and 1.3 for SCC. For the period 1998-2011, ASIR for BCC was 11/100000 in men, respectively 9.35 in women, for SCC 2.40/100000 respectively 1.85 and for melanoma 3.84/100000 respectively 4.3. The BCC/SCC rate ratio in males was lower than in females (4.58 respectively 5.05). The majority of SCC and BCC (68% and 65.5%) in both sexes were located on the head and neck and 40% of melanomas on the trunk. The incidence showed significantly increasing trends, with a 7.8% APC in males and 7.42% in females for melanoma, a 9.4% APC in males for SCC and APC of 15.8 in males respectively 14.2 in females for BCC. The increase was observed in the age groups over 50 for melanoma, over 70 for SCC and all age groups except over 70 in females for BCC. In the last 6 years of the interval, the increasing incidence was particularly abrupt for BCC and SCC.

**Conclusions :** The study reveals a rising incidence of cutaneous cancers in concordance with international trends. For BCC and SCC it is difficult to distinguish between real and apparent rise, because of improvement in the completeness of cancer registration.

## POSTER 76 Incidence : Long-term trends in the incidence and overall survival of pancreatic cancer in the Manche department

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### ABSTRACT

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**Context :** The prognosis in pancreatic cancer is known to be extremely poor because that cancer are generally diagnosed at a very advanced stage. This study examines the long-term trends in incidence and relative survival of patients diagnosed with pancreatic cancer in the Manche department.

**Material and methods :** We used pancreatic cancer data diagnosed between 1994 and 2012 from the Manche Cancer Registry. The incidence rates were standardized on the world population. Relative survival was estimated overall, by sex, by age group and period of diagnosis. All analysis and statistics are performed with the R soft programming language.

**Results :** In total, 1000 patients with pancreatic cancer were identified, of which 57% were male. Mean age at diagnosis was 69,2 years. The incidence rate of pancreatic cancer in the Manche department increased significantly for both sexes between 1994 and 2012 : 5,2 % per year for men and 7 % per year for woman ( $p = 0.001$ ). 5-year relative survival was 26.0% at one year and 5% at five years. The survival was similar in man and woman and decreased with advancing age. 5-year relative survival was higher in the 15-44 age group, There were no changes in 5-year relative survival over time.

**Conclusion :** As expected, overall survival of patients with pancreatic cancer remains low, although the important developments in diagnostic imaging has been achieved. In the near future, new innovative treatments will be the best way to improve the prognosis in this cancer.

## POSTER 77 Incidence : Time trends in breast cancer incidence and mortality in a middle-sized northeastern brazilian city

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### ABSTRACT

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**Objectives** : Breast cancer incidence varies internationally, and incidence is poorer in low socioeconomic areas. Recently, incidence rates have increased in these areas. The purpose of the study was to determine incidence and mortality trends of invasive female breast cancer in Arcaju, Sergipe, Brazil, from the time series of 1996-2011.

**Methods** : Incidence data were retrieved from the Arcaju Cancer Registry and mortality data from the Mortality Information System for the State of Sergipe. Crude and age-standardized rates were obtained and the Joinpoint Regression Program calculated trends.

**Results** : There were 2,152 incident cases and 574 deaths. Age-standardized incidence rate was 57.4/100,000 women (95% CI 55.0-59.9), and age-standardized mortality rate was 15.2/100,000 women (95% CI 13.9-16.9). Breast cancer incidence increased by 1,3% (95% CI 0.3-2.3), but no specific age group was highlighted. Mortality trends remained stable in the time series.

**Conclusions** : Rising incidence trends can demonstrate the influence of risk factors as well as improvement in diagnosis. However, screening strategies cannot target any specific age group. Increasing incidence trends, on the other hand, did not interfere in mortality trends, which remained acceptable and stable.

## POSTER 78 Incidence : Descriptive analysis of the incidence of thyroid cancer between 1982-2012 in France from French cancer registries data

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### ABSTRACT

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**Objectives** : The incidence of thyroid cancer has sharply increased in many countries in the past decades. This increase mainly concerns the papillary cancers. It has been suggested that changes in diagnostic practices and the effect of risk factors could explain this rise. We present a descriptive analysis in terms of evolution and spatial distribution of the incidence of this cancer in France.

**Material and method** : The analysis is performed on data from French cancer registries collected at a district level. A first analysis of incidence involves data covering the whole period 1982-2012. A second analysis describes the spatial distribution of papillary cancer incidence between 2009 and 2012 according to the size of the tumor. The usual approaches in epidemiology (direct and indirect standardization) are used in these analyses.

**Results** : The incidence of papillary cancers has sharply increased during the period 1982-2012 with an annual average rate of over 6%. The increase has slowed in the recent period in people aged less than 60 years at the time of diagnosis. The trend differs among the districts covered by cancer registries. There is a strong geographic disparity in the incidence during the period 2009-2012. This disparity concerns all tumor sizes. Three districts have a high incidence (Isère, Gironde and Vendée) and three others show a low incidence (Bas-Rhin, Haut-Rhin and Manche).

**Conclusion** : The incidence of thyroid cancer, especially papillary histological, has considerably increased in France. This increase results most probably from the effect of medical practices although other risk factors also seem to be involved, but to a lesser extent. These risk factors have not yet been clearly identified to date so that the geographic disparities observed are difficult to interpret in terms of risk factors.



## POSTER 79 Incidence : Estimation of the lifetime risk of cancer in one region of Switzerland

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### ABSTRACT

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**Objectives** : Incidence and mortality rates are common metrics used to assess the burden of cancer in the general population. They provide a specific and time-limited perspective of the disease. However, they are not appropriate to evaluate the personal risk of cancer over the life-course. Therefore, we estimated the lifetime risk of cancer in one region in Switzerland.

**Methods** : We used data from the Valais cancer registry at the Observatoire valaisan de la santé ([www.ovs.ch](http://www.ovs.ch)). This population based registry collects data on all cases of cancer diagnosed in individuals living in one canton of Switzerland, Valais. We also used population and mortality data from the Office Fédéral de la Statistique (OFS - [www.bfs.admin.ch](http://www.bfs.admin.ch)). Using all the cases recorded between 2008 and 2012, we computed the risk of first cancer and mortality in the cancer free population, by age. We conducted survival analyses to estimate the cumulated risk of first cancer throughout life, accounting for the mortality risk. Sex-specific analyses were conducted for all cancers and for the most frequent type of cancers.

**Results** : The lifetime risk of being affected by any cancer was 48% for men and 38% for women. The lifetime risk was, respectively, 8% in men and 4% in women for lung cancer, 7% in men and 4% in women for colorectal cancer, 19% in men for prostate cancer, and 13% in women for breast cancer. Before 65 years of age, women had a higher risk of being affected by cancer, notably due to the burden of breast cancer among younger women. After 65 years of age, the lifetime risk of men was higher.

**Conclusion** : Lifetime risk of cancer is a complementary metric to incidence and mortality, and is readily understandable by individuals. A large part of the population will be affected by cancer throughout life in Switzerland. This proportion could be larger among subpopulation at high risk, such as regular smokers. Furthermore, it is likely to increase in the future with the expected increase in life expectancy.

## POSTER 80 Incidence : Evaluation of the clustering tendency of the incidence cases of cancer in Isere from 2006 to 2012

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### ABSTRACT

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**Context :** The geographical epidemiology offers a wide choice of methods to study the spatial distribution structure of cancer risk in a given geographical area. Their application are in part facilitated by the tools (i.e. statistical tests, software) that were developed in the last decades. Various adjustments were made to most of the statistical tests giving thereby multiple alternate versions. This is particularly the case for Moran's I test used to assess the clustering tendency. This test can be applied based on different assumptions. Objectives We compared the results of various formulations of Moran test in order to describe the underlying spatial distribution structure of incidence. All of these results were compared with those obtained by the Bayesian approach that is used as reference.

**Materials and Methods :** The incidence data of cancer from 2006 to 2012 were obtained from the database of the cancer registry of Isere. Simulations data were also considered. Five versions of Moran's I test were applied. At the same time, several models of Bayesian smoothing were carried out.

**Results :** The results for the demonstration of a spatial structure of the incidence varied according to the formulation of the Moran test. For one of these versions in which the empirical Bayesian index (EBI) of Moran was determined, results were more often consistent with those obtained by Bayesian modeling.

**Discussion and Conclusions :** The results of spatial autocorrelation test based on the EBI seemed to be more reliable to describe the spatial structure. The principle of computation is nevertheless based on a similar approach to that of Bayesian smoothing models (empirical) by being used as a reference. It is therefore necessary to interpret these tests carefully. Comparing their results with those of another type of method can thus be useful.

## ORAL 81 Social inequalities : Childhood cancer and socioeconomic status of the place of residence at diagnosis in France – Geocap study, 2002-2010

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### ABSTRACT

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**Objectives** : Socioeconomic (SE) status is related to many lifestyle and environmental factors, some of which are suggested to influence the risk of childhood cancer. Studies requiring subject participation are usually hampered by selection of more educated parents, which can be prevented by the use of unselected SIG-based registry data. The objective of the present study was to investigate the influence of the SE characteristics of the place of residence on the risk of childhood cancer.

**Material and methods** : We used the nationwide registry-based study GEOCAP. It included all the French residents diagnosed with a cancer aged up to 15 years at the end of the year of diagnosis over 2002-2010 (15,111 cases) and 45,000 contemporaneous controls representative of childhood population. The addresses at diagnosis/inclusion were geocoded and affected to the 49,938 IRIS, the smallest census units. Areal SE data were drawn from the 1999 and 2007 population censuses and deprivation was estimated using two census-based French (FDep) and European (EDI) indices, at the scale of the IRIS.

**Results** : The risk of acute lymphoblastic leukemia (ALL) was lower in Paris urban unit than in others units, and was significantly lower in the most deprived quintile than in the other quintiles of both indices (OR(FDepQ5)=0.86 [0.78;0.94]; OR(EDIQ5)=0.81 [0.74;0.89]). Overall, the results for the other cancer sites were not conclusive and no increase in the risk of childhood cancer was observed in the most deprived areas.

**Discussion and Conclusions** : Using indices and unselected population-based data, our study suggests that ALL risk in childhood is decreased in the most deprived French areas and that none of the other cancer groups is positively associated with deprivation. These findings call for research of underlying individual factors that could play a role in the risk of ALL.

## ORAL 82 Social inequalities : May deprivation index explain geographical differences in cancer mortality in Zaragoza ?

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### ABSTRACT

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**Objectives** : Several studies have indicated that population with a lower socioeconomic status (SES) has a higher risk of cancer incidence and mortality. In the framework of Spanish MEDEA project, this study tries to identify geographic inequalities in cancer mortality in Zaragoza city during the period 1996-2007 and its association with socioeconomic factors in a small areas level.

**Methods** : An ecological study has been carried out. The geographical analysis unit was census tract (CT). Mortality was available from the Aragon Mortality Registry and socioeconomic data from the 2001 National Census. A synthetic deprivation index (DI) was obtained by principal components analysis. Standardized Mortality Ratio (SMR) was calculated using internal standardization and smoothed by a Bayesian GLMM model, which accounts a spatial and non-spatial heterogeneity, comparing 2 estimation methods: INLA and MCMC. The DI was included both linear effect as discretized in quintiles.

**Results** : There were geographical variations in the distribution of mortality of the most common malignant tumors in the city of Zaragoza in the studied period. Differences may be explained, at least in part, by their relationship with the DI used. These inequalities varied with the type of tumor analyzed and were higher in men than in women. Lung, larynx and esophagus cancer in men had a stronger association with the DI with a risk increase in the most deprived CTs. In women, lung cancer had an inverse relationship. In addition, SES association tended to remain stable for most of the locations studied during the period. INLA method provided reliable estimation but in less computing time than MCMC.

**Conclusions** : This study supports the existence of socioeconomic inequalities in cancer mortality, more markedly in men. The INLA method is more preferable than MCMC. This work could be useful as point of reference for analyzing the effect of the current economic crisis, and also inequalities in incidence data. FIS PIO42602

## ORAL 83 Social inequalities : Socio-economic status and biological embedding: results from EPIC-Italy

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### ABSTRACT

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**Objectives** : Differences between socio economic groups contribute to health disparities in cancer. This is a major societal challenge and calls for a better understanding of the determinants of diverging pathways among individuals belonging to different socio-economic groups. Such analysis can build upon recent advances in molecular biology to identify biologically imprinted effects of socio economic position (SEP) and its evolution in the life course. One important biological mechanism used by organisms to adapt to their environment involves the stress response that may alter many mechanisms including inflammatory and immune responses. Inflammation is a key pathway involved in the development of chronic diseases including cardio-metabolic disorders and cancer.

**Materials and methods** : On-going work will be illustrated by the results from a pilot study including 268 participants from the Italian component of the European Prospective Investigation into Cancer and Nutrition study (EPIC-Italy) in which 28 inflammation markers and full-resolution genome-wide gene expression were derived from prospective blood samples. Association with early life, young adulthood and later adulthood SEP were first explored marginally. To mimic life course experiences, we sequentially adjusted for the chronologically ordered proxies for early life, young adulthood, and adulthood SEP indicators, and finally modeled social mobility between early life and adulthood SEP indicators.

**Results** : We showed that participants reporting a father with a 'manual' occupation had a higher inflammatory score at the proteins and gene expression level later in life compared to those whose father had a 'non-manual' occupation. No significant associations were found between participant's education and highest household occupation when examined separately.

**Discussion and conclusions** : Low socio-economic position in childhood is associated with modest increment in adult inflammatory burden and may in-turn have an impact on health.

## ORAL 84 Social inequalities : Individual socio-economic status and breast cancer diagnostic stages : a french case-control study

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### ABSTRACT

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**Objectives** : Health inequalities have increased over the last 30 years and represent a significant public health problem. We aimed to investigate whether the risk of having advanced stage breast cancer (BC) differed according to socio-economic status.

**Material and methods** : We conducted a matched case-control study on 619 women with BC, living in the Hérault, a French administrative area. Both Cases and Controls were recruited among invasive cases diagnosed in 2011 and 2012 and treated in Hérault care centers. Cases were defined as patients with advanced stage BC at diagnosis. Controls were composed of early stage patients. Individual socio-economic status was assessed using a validated individual score adapted to the French population and health care system.

**Results** : We observed that patients with low socio-economic status have a two-fold increase in the risk of having late stage BC, regardless of cancer characteristics and mode of detection (screening vs clinical signs). The association between the risk of having late stage BC and low socio-economic status was different depending on whether BC was diagnosed with or without mammography screening. For patients with BC detected by mammography screening, low socio-economic status was positively associated with the risk of late stage BC. Moreover, we observed a positive association between risk of late stage BC and low socio-economic status among patients with no history family of BC. No differences according to socio-economic status were observed among patients diagnosed with clinical signs or with a history family of BC.

**Discussion and conclusions** : One possible explanation for these results could be that low socio-economic status patients have less regular follow-up, which can lead to later and poorer diagnosis. Follow-up is improved in women with a better awareness of BC. Health policy makers could reduce health inequalities by reducing the delay in breast cancer diagnosis for women with low socio-economic status.

## ORAL 85 Social inequalities : Health professionals and the early detection of head and neck cancers

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### ABSTRACT

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**Background** : In the context of early detection of head and neck cancers (HNC), the aim of this study was to describe how people sought medical consultation during the year prior to diagnosis and the impact on the stage of the cancer.

**Methods** : Patients over 20 years old with a diagnosis of HNC in 2010 were included from four French cancer registries. The medical data were matched with data regarding uptake of healthcare issued from French National Health Insurance General Regime.

**Results** : In 86.0 % of cases, patients had consulted a general practitioner (GP) and 21.1% a dentist. Consulting a GP at least once during the year preceding diagnosis was unrelated to Charlson index, age, sex, département, quintile of deprivation of place of residence. Patients from the 'quite privileged', 'quite underprivileged' and 'underprivileged' quintiles consulted a dentist more frequently than those from the 'very underprivileged' quintile ( $p=0.007$ ). The stage was less advanced for patients who had consulted a GP (OR= 0.42 [0.18-0.99]) - with a dose-response effect.

**Conclusion** : In view of the frequency of consultations, the existence of a significant association between consultations and a localised stage at diagnosis and the absence of a socio-economic association, early detection of HNC by GPs would seem to be the most appropriate way.

## ORAL 86 Social inequalities : Factors related to non-Hodgkin's lymphoma place of care in France: is there a role of socioeconomic status ?

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### ABSTRACT

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**Objectives** : Diffuse large B cell lymphoma (DLBCL) and Follicular lymphoma (FL) are 2 major non-Hodgkin's lymphoma histological subtypes of for which care management is well codified. However, they are treated in numerous places of care (POC) leading to a potential variability in care management and impact on the survival of these patients. The aim of this study was to identify the socioeconomic and medical factors predicting the POC (teaching versus non-teaching hospital).

**Methods** : We performed a population-based "high-resolution" study including all patients diagnosed with FL and DLBCL in three registry-areas in France (Gironde, Côte d'Or and Basse-Normandie) between 2002-2008. The POC was classified as reference care centre: "teaching" (university or specialized oncology hospital) or non-teaching (private or community hospital). Univariate and multivariate analysis were performed, with a multiple imputation method (MICE) applied to a logistic regression.

**Results** : We included 1798 patients (median age 69 (9-99)). In a multivariate logistic regression adjusted on age, we first confirmed that higher comorbidity and disseminated stage of disease were associated with teaching management (OR: 1.36 IC 95%: 1.03-1.81 and OR: 1.46 IC 95%: 1.19-1.79, respectively). The registry area, the travel time to the nearest teaching hospital were independently associated with the place of treatment (OR: 0.52 IC 95%: 0.41-0.68 for travel time>43 mns). In contrast, the socioeconomic status (European Deprivation Index) was not associated with the POC.

**Conclusion** : Although our social welfare system seems giving a free access to all hospitals types in France, this study shows that medical factors such as age, comorbidity and stage of disease influence the choice of POC. Socioeconomic status is not associated with being treated in a reference center but patients living far from reference center are more treated in local hospital. Finally, our results emphasize disparities according to France area.



## ORAL 87 Social inequalities : Exploring social causal pathways for cervical cancer survival in low and middle income settings

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### ABSTRACT

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**Objectives :** The effect of socioeconomic (SE) conditions on cancer outcomes is a big black box, thus, intervention programs are focused in clinical patterns and do not consider social determinants and disparities. This study was conducted for analyzing social causal pathways between socioeconomic conditions and cervical cancer survival in low and middle income settings.

**Methods :** A cohort of 603 women with cervical cancer diagnosed in 1998-2010 characterized by Cancer Registry of Pasto, Colombia, was followed up to 5 years for identifying deaths due to cervical cancer. Effect in cause specific survival of SE variables (zone of residence, occupation, education, SE stratum) in baseline were estimated and adjusted by confounders (age and comorbidities). Using new Lange-Cox approach, causal mediation analysis was performed to assess direct and indirect effect of SE variables through mediators related to demographic conditions (civil status, multiparity) health insurance (regimen), access to early diagnosis (TNM, grade, diagnosis method), access to timely treatment (time to treatments, treatment scheme) and tumor characteristics.

**Results :** Socio-economic stratum (SES) and Education were related to cervical cancer survival; women with low SES and education have 2.4 (IC95% 1.8;3.9) and 3.2 (IC95% 2.3;4.4) more risk of death (HR) compared to those with high SES and Education respectively. The pathway of influence of SES is mediated 15% by access to early diagnosis (TNM) and 22% by time to treatment. The effect of education is explaining 23% by TNM mediation.

**Discussion and conclusions :** This study is clarifying the mechanism of social determinants in cancer outcomes and contributing to planning interventions programs, focalized in vulnerable social groups with low SES and education with increased barriers in access early diagnosis and timely treatment.

## ORAL 88 Social inequalities : Cancer and Socioeconomic inequalities in Geneva: area-level or individual indicator ?

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### ABSTRACT

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**Objectives :** To compare an ecological indicator with an individual one to describe socioeconomic inequalities in cancer. The ecological indicator (Socioeconomic position, SEP) has been developed at a Swiss level using small area data from the census 2000. The individual indicator is based on the last occupation of the patient at the time of diagnosis (Socio-professional category, SPC).

**Material and methods :** We selected patients diagnosed between 1995 and 2005 with breast, prostate, colorectal, stomach, lung, bladder cancer or melanoma. The standardized SEP ranges from 0 (lowest SEP) to 100 (highest SEP). We used terciles for survival analysis. The SPC is divided in 3 categories (High, Medium, or Low socio- professional category). We evaluated the effect of each indicator on incidence, 5y- net survival and hazard ratios of mortality estimated by Cox models.

**Results :** were stratified by age, sex, geographical area and cancer sites. Results We included 16'878 patients. Only 0.7% of the patients had missing data for the SEP and 3.2% for the SPC. The mean SEP score was 66.08. In terms of incidence, there was a significant correlation between the two indicators by age, geographical area, sex and cancer site. For some localisations, both indicators pointed out socioeconomic inequalities when estimating 5-y net survival. Differences between socioeconomic categories were however more marked with the individual index. Socioeconomic gradients using the individual indicator were even more pronounced with Cox model analysis, whereas results with the ecological one were moderate or not significant.

**Conclusions :** Results of the area-level indicator were consistent with those of the individual one, especially for incidence data. Individual indicator appeared nevertheless to be more discriminant for survival analyses. Each indicator measures different aspects of the socioeconomic condition of a patient. They should, therefore, be used as complementary tools when analyzing inequalities in health.

## ORAL 89 Social inequalities : Effects of individual and ecologic socio-economic characteristics on breast cancer survival in Umbria : a multilevel model

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### ABSTRACT

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**Objectives** : to determine if and how much socio-economic characteristics (SE) at individual and census tract level influenced indirectly the survival of women diagnosed with breast cancer, stressing the difference between the two levels.

**Materials and methods** : Breast cancer patients from the Umbria Cancer Registry (incidence 2001-2010, follow-up at: 31/12/2012) were considered, along with their main demographic and clinical variables. Marital status and education level (i.e., the individual SE) came from the Umbrian municipalities, while the SE at census tract level came from the 2001 National Census. The effects of the covariates on survival were studied by modelling the excess death risks with a multilevel mixed effects parametric survival model (fixed effects: SE and medical covariates; random effects: census tract). The variables were added step-by-step, starting from the baseline contribution of age and stage at diagnosis to survival. The AIC identified the best fitting model.

**Results** : 5091 cases were considered in the analyses. Stage, grade and comorbidity presence were the main determinants of the increasing death risks; surgical procedures, hormonotherapy and radiotherapy had protective effects. According to the AIC values, the best-fitting model was the one which included all variables. Individual marital status was significant. Single patients and widowed experienced a 37% and 44% excess death risk respectively. At census tract level, the increase of structural dependency had a limited but statistically significant effect. A limited protective effect was observed for the random covariate.

**Conclusions** : The individual SE expressing the family structure proved to be relevant, possibly because it influences access to care and treatment adherence. The individual SE characteristics seems to be more relevant determinants of survival than micro-ecologic ones. Thus individual level SE covariates should be increasingly considered and included in cancer registries data collection.

## POSTER 90 Social inequalities : Impact of age-related socio-economic and clinical determinants of quality of life among long-term breast cancer survivors

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### ABSTRACT

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**Objectives** : The main purpose of this study was to identify age-related socioeconomic and clinical determinants of quality of life among breast cancer survivors five years after the diagnosis. The secondary objective was to describe quality of life in the studied population according to age.

**Methods** : A cross-sectional survey in five-year breast cancer survivors was conducted in women diagnosed with breast cancer in 2007 and 2008 in Côte d'Or. Quality of life was assessed with the SF-12, the EORTC-QLQ-C30 and the EORTC-QLQ-BR23 questionnaires. Socio-economic deprivation was assessed by the EPICES questionnaire. Social support was assessed by the Sarason questionnaire and clinical features were collected through the Côte d'Or breast cancer registry. Age-related determinants of quality of life were identified using multivariate mixed model analysis for each SF-12 dimension.

**Results** : Overall 396 women completed the questionnaires. Women aged < 65 years had a better quality of life and a greater availability of social support than did women aged ≥ 65 years. Body mass index, relapse and EPICES were found to be determinants of quality of life in younger women ( $p < 0.006$ ). For older women, comorbidities and EPICES deprivation scores were predictors of low quality of life scores ( $p < 0.005$ ).

**Conclusions** : Five years after breast cancer diagnosis, disease severity did not affect quality of life. The major determinants of quality of life in younger women were disease relapse and EPICES deprivation scores while those in older women were comorbidities and EPICES deprivation scores.

## POSTER 91 Social inequalities : Stage, delay and management of head and neck cancer : a French population based-study in a high incidence area

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### ABSTRACT

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**Context** : Head and neck cancers (HNC) have a prognosis extremely poor, particularly in France. Management is subject to European recommendations, but there is no detailed data in the French general population. The objective of this study was to determine the conditions of diagnosis and therapeutic management of these patients.

**Materials and Methods** : A population-based study was conducted, using registries in the north-west of France, on 1 729 tumors diagnosed between 2008 and 2010. [ICD-O: C01-C06, C09-C10, C12-C14, C32]

**Results** : The tumors were diagnosed late (56.6% stage IV). After adjusting for sex, age, department, deprivation quintile and year of diagnosis, advanced stages were more frequent in patients with hypopharyngeal and oropharyngeal tumors compared to oral cavity ones ( $p < 0.0001$ ). They were also more frequent in patients with moderate or severe comorbidities ( $p = 0.01$ ) The assessment included a panendoscopy in 80.3% of cases, a cervical CT scan in 89.3% and a chest CT scan in 87.3%. A multidisciplinary meeting had taken place in 96.9% of cases. The vast majority of patients (90.7%) had received treatment, with surgery in 48.7% of cases and radiotherapy in 76.9%. The median time between diagnosis and first treatment (DTI) was 35 days [Q1: 21-Q3: 54]. When the first treatment was radiotherapy, the interval was 54.5 days [Q1: 40-Q3: 71]. In multivariate analysis, DTI was associated with type of first treatment and place of treatment. For advanced stage HNC, DTI was associated to comorbidities, topography of cancer and socioeconomic status; underprivileged patients being treated later than privileged.

**Conclusion** : Despite the recommendations for early detection and prompt treatment, diagnoses are often made late and times for radiotherapy seem long. However, the major risk of advanced stage concerns deep tumors and the most weakened subjects. Diagnostic assessment is broadly consistent with the recommendations and majority of patients receive a curative treatment.

## POSTER 92 Social inequalities : Correlation between cancer incidence rates and socioeconomic parameters at municipal level in the basque country

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### ABSTRACT

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**Objective** : Find out how cancer incidence rates correlate with available socio-economic statistics at municipal level, in the Basque Country.

**Methods** : Cases were drawn from the Basque Autonomous Region's population-based cancer registry. Crude and standardized incidence rates were calculated for each municipality for the period 2002-2012: for sex, and for main cancer locations. Several socio-economic stats were extracted from available statistics from the official statistics Institute. Cancer incidence rates, global and from usual topographical aggregations were contrasted against statistics related to personal/familial income and educational level.

**Results** : Crude rates of global cancer incidence correlated with mean personal and family income levels (Pearson's : -0.179 / -0.241; p: 0.005 / 0.000), and with educational level indexes (rate of people with university studies, Pearson's -0.196 p: 0,001; rate of people with secondary level studies, Pearson's -0.164 p: 0,01;...). When incidence rates of topographies were analyzed some significant correlations appeared on crude rates of melanoma, nasopharynx cancer, Hodgkin lymphoma, leukemia and stomach cancer. When age and sex adjusted rates were used some of the observed correlations disappear, but others were revealed. Standardized rates significantly correlated with mean income level on pulmonary cancer of females, cervix cancer, nasopharynx cancer and Hodgkin lymphoma (both sexes). When nonlinearity of variables is considered, the number of significant correlations increases. Spearman's Rho for familial income and crude incidence rate is -0.305(p<0.000); for men's lip and oral cavity cancer standardized incidence rates is -0.215(p<0.001); for cervix uteri -.191(p<0.002); and so on with several other rates.

**Conclusions** : Several correlations are observed among socio-economic statistic data at municipal level with cancer incidence rates. A deeper study of those associations might give clues for cancer related public health interventions.



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