Cancer registration: from data generation to decision-making.

IACR 2018 AREQUIPA

40th Annual Scientific Conference
International Association of Cancer Registries

Arequipa
IACR 2018 • 13-15 nov

Cancer registration: from data generation to decision-making.
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>About IACR and the Population-Based Registry of Arequipa</td>
</tr>
<tr>
<td>4</td>
<td>Welcome Message</td>
</tr>
<tr>
<td>5</td>
<td>Committees</td>
</tr>
<tr>
<td>6</td>
<td>The Enrico Anglesio Prize</td>
</tr>
<tr>
<td>8</td>
<td>Programme-At-A-Glance</td>
</tr>
<tr>
<td>10</td>
<td>Practical Information</td>
</tr>
<tr>
<td>11</td>
<td>Floor Plan</td>
</tr>
<tr>
<td>12</td>
<td>Information for Presenters</td>
</tr>
<tr>
<td>14</td>
<td>Scientific Programme</td>
</tr>
<tr>
<td>15</td>
<td>Detailed Programme</td>
</tr>
<tr>
<td>22</td>
<td>Moderators ans Session Chairs</td>
</tr>
<tr>
<td>23</td>
<td>Johannes Clemmesen Lecture</td>
</tr>
<tr>
<td>25</td>
<td>Keynote Lectures</td>
</tr>
<tr>
<td>30</td>
<td>Workshops and Faculty</td>
</tr>
<tr>
<td>34</td>
<td>Scientific Abstracts</td>
</tr>
<tr>
<td>35</td>
<td>Plenary Presentations</td>
</tr>
<tr>
<td>46</td>
<td>Parallel Presentations</td>
</tr>
<tr>
<td>68</td>
<td>Poster Abstracts</td>
</tr>
<tr>
<td>129</td>
<td>Our Partners</td>
</tr>
</tbody>
</table>
The International Association of Cancer Registries (IACR) was founded in 1966 as a professional society dedicated to fostering the aims and activities of cancer registries worldwide. It is primarily for population-based registries, which collect information on the occurrence and outcome of cancer in defined population groups (usually the inhabitants of a city, region, or country). For each new cancer case, registries record details of the individual affected: the nature of the cancer, information on treatment, and on follow-up especially with respect to survival from the disease.

Registries play an important role in research into the cause of cancer, both by providing data on patterns and trends, and in different types of epidemiological studies (in particular, in their ability to follow up groups of persons exposed to potential hazards). Registries are an essential element in the planning and monitoring of cancer control strategies, and in identifying priorities in public health.

To ensure that cases are properly recorded, and that the statistical data gathered are complete and can be used to make valid comparisons, cancer registries must conform to accepted working practices and standards. The IACR was created to foster the exchange of information between cancer registries internationally, with the goal of improving the quality of data and comparability between registries.

The IACR is a non-governmental organization that has been in official relations with the World Health Organization since January 1979. More information can be found at http://www.iacr.com.fr/

REGISTRO DE CANCER POBLACIONAL DE AREQUIPA

The Arequipa Poblational Cancer Registry is an official institution of the Ministry of Health of Peru founded on October 15, 2001, according to Regional Health Executive Resolution No. 0801-01 – CTAR / PE-DRSA / DG-OEPLAN and began formally operating on January 1, 2002. It is a member of the International Association of Cancer Registries (IACR).

Dr. Luis E. Medina, surgical oncologist and then-manager of the Instituto Regional de Enfermedades Neoplásicas del Sur (IREN-SUR) was appointed as the registry’s first director and has held this position since 2001. In 2002, the registry published the “Hospital Cancer Registry Report 2000-2001” and received a national first prize for research on cancer, “Dr. Eduardo Caceres Graziani 2002.”

In 2006, the registry published its first “Arequipa Poblational Cancer Registry 2002-2003,” which was a first approach to population-based registries and was praised by health professionals and policy makers identifying cancer control in Peru and internationally.

Since 2009, the seat of the Arequipa Poblational Cancer Registry has been transferred to the Instituto Regional de Enfermedades Neoplásicas del Sur (IREN-SUR) allowing this institution to continue to provide timely and efficient scientific information on incidence and mortality in Arequipa, contributing to the health management of the Ministry of Health of Peru, in the development of cancer control strategies, population and primary and secondary prevention in order to reduce the impact of cancer as a public health problem.
Dear IACR Members

Dear Colleagues and Friends of Population Cancer Registries

We live in a globalized world, we cannot expect to achieve high levels of quality and comparability in the processing and analysis of data from our population-based cancer registries, if not we share experiences and above all knowledge among cancer registries around the world. Our vision is the cancer prevention, which is the best defense we have against this disease.

For the International Association of Cancer Registries (IACR) “Registries play an important role in research into the cause of cancer, both by providing data on patterns and trends, and in different types of epidemiological study (in particular, in their ability to follow up groups of persons exposed to potential hazard). They comprise an essential element in the planning and monitoring of cancer control strategies, and for identifying priorities in public health”.

Arequipa the white city waits for you for the 40th IACR Scientific Conference on 12-15 November 2018 and enjoy Local and Peruvian tourism and taste our delicious gastronomy.

See you all in Arequipa, Peru

Dr. Luis E. Medina Fernández
Cirujano Oncólogo
Arequipa Population Cancer Registry, Peru
Director

**LOCAL ORGANIZING COMMITTEE**
- MC. Luis E. Medina Fernández, Registro de Cáncer Poblacional de Arequipa, Director
- MC. Eduardo Payet Meza, National Institute of Neoplastic Diseases, Institutional Chief
- Sr. Alfonso Eguiluz Alegre, Convention Bureau of Arequipa, President
- Sra. Obst. Ydelsa Delgado Luna, Arequipa Regional Health Management
- MC. Berenice Rodríguez Zea, Registro de Cáncer Poblacional de Arequipa
- MC. Ernesto Vargas Quezada, Oncology and Radiotherapy, Goyeneche Hospital

**SCIENTIFIC PROGRAM COMMITTEE**
- Freddie Bray, IACR Executive Secretary
- Tomohiro Matsuda, IACR President
- Roberto Zanetti, IACR Past President
- Luis E. Medina Fernández, RPCA Peru
- Les Mery, IARC and GICR
- Stefano Rosso, IACR Treasurer
- Enrique Barrios, Uruguay
- Marion Piñeros, IARC and GICR
- Graciela Abriata, INC Argentina and GICR Latin American Hub

**IACR EXECUTIVE BOARD AND SECRETARIAT**
- Tomohiro Matsuda, President
- Roberto Zanetti, Past President
- Freddie Bray, Executive Secretary
- Stefano Rosso, Treasurer
- Les Mery (IARC)
- Maria (Chelle) Fernan (IARC)

**IACR REGIONAL REPRESENTATIVES (2016-2018)**
- Prof. Mohamad Hsairi [Africa]
- Dr. Enrique Barrios [Central and South America]
- Dr. Donna Turner [North America]
- Dr. Kevin Ward [North America]
- Dr. Sultan Esen [Asia]
- Dr. Rajesh Dikshit [Asia]
- Dr. Anna Gavin [Europe]
- Dr. Elisabette Weiderpass [Europe]
- Dr. Joanne Aitken [Oceania]
The Enrico Anglesio Prize will be awarded again this year at the 40th IACR annual conference.

Fondo Anglesio Moroni (Turin, Italy) awards several Prizes every year, one of which at the annual conference of the International Association of Cancer Registries (IACR). The Enrico Anglesio Prize recognises a young researcher working in a cancer registry or epidemiology centre for original scientific research in cancer epidemiology.

To date, seven IACR-round Prizes were awarded:
- In 2017 Simone Versteeg (the Netherlands): Centralisation of cancer surgery and the impact on patients’ travel burden
- In 2016 to Lidia Sacchetto (Italy): In situ, thin and thick melanoma in Europe: how and where are they increasing?
- In 2015 to Hanna Tervonen (Australia): Cancer survival and summary stage among Aboriginal and Torres Strait Islander people in NSW
- In 2014 Clara Castro (Portugal): Predicting cancer incidence in the north of Portugal for the years 2013, 2015 and 2020
- In 2013 to Iman Meziane (Morocco): The Moroccan Breast Cancer Registry (MBCR): Assessment of Breast Cancer Risk in Morocco
- In 2012 to Susan Spillane (Ireland): Use of the antidiabetic drug metformin and disease spread at diagnosis in colorectal cancer

The Jury, appointed by the Fondo, will evaluate candidates based on the following criteria:
- Clarity and inciveness of the oral presentation
- Originality and relevance of the scientific work
- Quality of the abstract
- Curriculum of the candidate

Prize money is €500,-. It is doubled to €1000,- if the research is published within one year in a journal with impact factor between 2.00 and 4.00. It is further raised to €1500,- if the journal has an impact factor over 4.00.

The Enrico Anglesio Prize must be acknowledged in the article.

The award ceremony will take place at the end of the IACR conference.

Enrico Anglesio Prize jury pool:
- Stefano Rosso
- Roberto Zanetti
- Marion Piñeros
- Betsy Kohler
- Tomohiro Matsuda

Fondo Anglesio Moroni
www.anglesiomoroni.org
Via San Secondo 25, 10128 Turin (Italy)
Tel +39 011 5171281
Email: info@anglesiomoroni.org

The Enrico Anglesio Prize will be awarded again this year at the 40th IACR annual conference.

To be eligible, candidates must be under 35 years of age and be the first and presenting author of the abstract selected for oral presentation. The abstract will cover original research which has not been presented elsewhere.

Enrico Anglesio
(1908-2003)
He graduated in medicine in 1933, and was a pioneer of modern oncology and chemotherapy in Italy. He contributed to research on lymphomas. He founded one of the first Cancer Registry in the South European region, and directed the coordination bodies of descriptive epidemiology. He was active in the UICC and was a national Councillor and the President if the Turin branch of the Italian League Against Cancer. He wrote several scientific publications, a digest of practical oncology and a brief history of oncology.
PROGRAMME AT-A-GLANCE

PRE-CONFERENCE - MONDAY, 12TH NOVEMBER
09:00-12:15 Workshop 1: Quality of Cancer Registries
Workshop 2: Cancer Registries and Cancer Control and Prevention
IACR Board of Directors Meeting
12:15-13:45 Lunch and Poster Session
13:45-18:00 Workshop 1: Quality of Cancer Registries
Workshop 2: Cancer Registries and Cancer Control and Prevention
IACR Board of Directors Meeting
18:00 Welcome Reception: Hotel Costa del Sol, Arequipa

DAY 1 - TUESDAY, 13TH NOVEMBER
09:00-10:00 Opening Ceremony and Welcome Addresses from IARC 2018 Hosts
10:00-10:45 2018 Clemmesen Lecture
Dr Roberto Zanetti
10:45-11:15 Break and Poster Session
11:15-12:15 Plenary 1 Presentations: Descriptive epidemiologic studies using registry data and using statistical models to estimate cancer burden
12:15-13:45 Lunch and Poster Session
13:45-15:00 Parallel Sessions 1
15:00-16:00 Parallel Sessions 2
16:00-16:30 Break and Poster Session
16:30-17:00 Keynote Lecture: Epidemiological studies on Japanese immigrants and their descendants in South America
Shoichiro Tsugane, Japan
17:00-18:00 Plenary 2 Presentations: Statistical models to estimate cancer burden and using registry data for clinical decision making
18:00 End of Day 1 Sessions

DAY 2 - WEDNESDAY, 14TH NOVEMBER
09:00-09:30 Keynote Lecture: Global strategies and the challenge of treatments in Low and Middle Income settings
Dr Eduardo Cazap, Argentina
09:30-10:45 Plenary 3 Presentations: Use of population-based cancer registry data in cancer control planning
10:45-11:15 Break and Poster Session
11:15-11:45 Keynote Lecture: Childhood cancer in low and middle income countries
Prof Christina Stefan, South Africa
11:45-12:45 Plenary 4 Presentations: Childhood cancer
12:45-14:15 Lunch and Poster Session
14:15-15:15 Parallel Sessions 3
15:15-16:00 Parallel Sessions 4
16:00-16:30 Break and Poster Session
16:30-17:00 Keynote Lecture: Puerto Rico Central Cancer Registry: The transformation of an epidemiologic cancer Surveillance System
Dr Guillermo Tortolero Luna, Puerto Rico
17:00-18:00 Plenary 5 Presentations: Challenges (and solutions) to cancer registration
18:00 End of Day 2 Sessions
19:30 Social Programme and Dinner: Monasterio de Santa Catalina
Santa Catalina 301, Arequipa

DAY 3 - THURSDAY, 15TH NOVEMBER
09:00-09:30 Keynote Lecture: Cancer registries’ role in improving cancer control: The Colombian experience
Prof Luis Eduardo Bravo
09:30-10:30 Parallel Sessions 5
10:30-10:45 Coffee Break
10:45-12:00 IACR Business Meeting
12:00-13:00 Conference Awards and Closing Programme
PRACTICAL INFORMATION

CONFERENCE LOCATION
Located five minutes from the Plaza de Armas and 20 minutes from Rodriguez Ballon Airport, the newly refurbished Hotel Costa del Sol Arequipa has 88 rooms, a pool, a spa with a sauna and jacuzzi, a gym, and spacious gardens. Conference and meeting room facilities are suitable for large events and conventions, with a capacity for over 900 people.

From the Alfredo Rodriguez Ballon International Airport (Arequipa airport), Hotel Costa del Sol Arequipa could be reached in 20 minutes by taxi / shuttle / Uber.

The city center of Arequipa (Monasterio de Santa Catalina / Plaza Armas / Club de Arequipa) is 14-20 minutes away on foot (walking) and 5 minutes by car (or taxi / shuttle / Uber).

Address
Hotel Costa del Sol Arequipa
Plaza Bolivar s/n, Selva Alegre
Arequipa
Peru
+51 (54) 21 5110
costadelsolperu.com/arequipa/

ON-SITE REGISTRATION
The registration and information desk is located in the Foyer of the Misti Function Rooms at the Hotel Costa del Sol Arequipa. Name badges will be provided in your registration package which can be picked up at the registration and information desk.

REGISTRATION TIMES
Monday, November 12th | 8:00am – 5:30pm
Tuesday, November 13th | 8:00am – 5:30pm
Wednesday, November 14th | 8.30am – 5:30pm
Thursday, November 15th | 8.30am – 11.00am

CERTIFICATE OF ATTENDANCE
Certificates of attendance can be picked up at the registration and information desk.

OFFICIAL LANGUAGE
The official language for the presentations will be English. No interpreting will be provided.

ACCES TO INTERNET
Delegates will have access to wireless internet at the conference, the connection details will be available at Hotel Costa del Sol Arequipa.

FLOOR PLAN
COSTA DEL SOL HOTEL - FUNCTION ROOMS
INFORMATION FOR PRESENTERS

ORAL PRESENTATIONS
The allocated time for each presentation is 10 minutes followed by a 5 minute discussion (unless otherwise specified). All speakers are asked to keep to the allocated time.

Presentations should be in PowerPoint format and presented in English.

Speakers are required to submit their presentation to verify that the file is in working order. To do so, they should:
* Preferably, send their presentation to iacr@iarc.fr before November 10th.

Otherwise, go to the IACR 2018 registration desk at Hotel Costa del Sol Arequipa with your presentation on a USB memory stick at least 2 hours before the start of the session.

POSTER PRESENTATIONS
Format/Size: Posters should be in portrait format, with a size of A0 (119 x 85cm).
Installation and removal of posters: Posters should be installed between 8.00 and 9.00 hours on November 13th. Install your poster at the designated place. All posters have been numbered (numbers can be found in the abstract book and all poster presenters have received a list of poster numbers).

Posters can be removed between 13.30 and 18.00 hours on November 15th. All posters that are not removed by then will be removed and discarded by the organization.

Viewing of the posters will be on during the morning coffee breaks, lunch breaks, afternoon coffee breaks. Each poster presenter is expected to be in attendance for discussion of their poster during the poster viewing schedules listed above. Please see the final conference programme for exact timing of the breaks and lunches.

POSTER AWARDS
The three best posters will be awarded during the closing ceremony.

Scientific content as well as communication skills will be judged by a jury selected by the IACR 2018.

POSTER JURY
Dr Jan Maarten van der Zwan, the Netherlands
Dr Carina Musetti, Uruguay
Dr Gustavo Hernandez, Colombia (TBC)

Hotel Costa del Sol, Arequipa
SCIENTIFIC PROGRAMME

DETAILED PROGRAMME

DAY 1 - TUESDAY, 13TH NOVEMBER

00:00-08:50  Registration

09:00-10:00  Opening Ceremony and Welcome Addresses
Dr Tomohiro Matsuda and Dr Freddie Bray, Moderators
Dr Luis Medina Fernandez, Arequipa
Dr Eduardo Payet, INEN, Peru
Peru MOH Representative

10:00-10:45  2018 Clemmesen Lecture
The development of cancer registration in Latin America, focusing on the cooperation with South European countries
Dr Roberto Zanetti, Piedmont, Italy

10:45-11:15  Break and Poster Session

11:15-12:15  Plenary 1 Presentations: Descriptive epidemiologic studies using registry data and using statistical models to estimate cancer burden
Social disparities on breast cancer incidence in a low-middle-income Colombian population
Daniel Jurado, Colombia
Cancer prevention in the Caribbean and South America: How many can be prevented?
Isabelle Soerjomataram, IARC
Up against a limit? Using modeling and cancer registry survival data to estimate recurrence burden
Angela Mariotto, USA

12:15-13:45  Lunch and Poster Session

13:45-15:00  Parallel Sessions 1
Group 1A
Trends in cancer incidence and mortality over three decades in Quito - Ecuador
Patricia Cueva, Ecuador
Time trends in breast and cervical cancer incidence and mortality in the Barretos region (Brazil)
Mafra Alinini, Brazil
Characteristics of gastric adenocarcinoma among young Hispanics in California
Rosemary Cress, USA
Distribution and incidence of ovarian cancer by histologic subtypes in Japan
Megumi Hori, Japan
13:45-15:00 Group 1B
Measuring the cancer burden: The European Cancer Information System
Manola Bettio, JRC - EC
Non-participation in the randomized CRC Screening Programme in Finland
Maija Jäntti, Finland
Female thyroid cancer incidence and proximity to industries: A spatial analysis in an Andean city
Nelson Arias-Ortiz, Colombia
Global trends and influence of cohort and period in ovarian cancer incidence
Citadel Cabasag, IARC (presented by Isabelle Soerjomataram, IARC)

15:00-16:00 Parallel Sessions 2
Group 2A
Stagnation in decreasing gastric cancer incidence and mortality in Quito: Time trend analysis, 1985-2013
Wilmer Tarupi, Ecuador
Relative Survival in head and neck cancer from Population-based Cancer Registry of Goiânia, Brazil
Stela Verzinhass, Brazil
Gender in survival of cancer patients
Gemma Gatta, Italy
Survival by risk of prostate cancer and factors associated to survival in Mallorca, 2006-2012
Maria Ramos Monserrat, Spain

Group 2B
Pattern of care of prostate cancer: Results of a population-based study in the Caribbean
Clarisse Joachim, Martinique
Lung cancer attributable to tobacco consumption in Portugal in 2015
Gonçalo Forjaz de Lacerda, Portugal
Cancer incidence estimates, Sergipe State, Brazil in 2018, using data provided by the Aracaju Cancer Registry
Carlos Anselmo Lima, Brazil
Implementing a population-based cancer registry in a Mexico-US border city: Barriers And initial steps
Rebecca Rivera-Gómez, Mexico

16:30-17:00 Keynote Lecture
Epidemiological studies on Japanese immigrants and their descendants in South America
Shoichiro Tsugane, Japan

17:00-18:30 Plenary 2 Presentations: Statistical models to estimate cancer burden and using registry data for clinical decision making
Bayesian spatial modelling of socioeconomic environment and cancer incidence in Slovenia
Vesna Zadnik, Slovenia
Cancer registry data support decision to centralize surgery for pancreatic and esophageal cancer in Belgium
Liesbet Van Eycken, Belgium
When will breast cancer patients be cured? A model predicting conditional extra risk on mortality
Sabine Siesling, the Netherlands

16:00-16:30 Break and Poster Session

DAY 2 - WEDNESDAY, 14TH NOVEMBER

09:00-09:30 Keynote Lecture
Global strategies in cancer control: From data to implementation
Dr Eduardo Cazap, Argentina

09:30-10:45 Plenary 3 Presentations: Use of population-based cancer registry data in cancer control planning
Using cancer registries to demonstrate efficacy of targeted therapies in the general population
Charles Wiggins, USA
Skin melanoma deaths 1 or 3 years from diagnosis: Are they decreasing in Europe?
Stefano Rosso, Italy
Cancer survival in Malaysia: A population - based study
Azizah Ab Manan, Malaysia
Women’s cancers: A world-wide high-resolution study targeted at cancer control and decision-making
Claudia Allemani, UK
Supporting the improvement of data availability for cancer control and prevention in the Caribbean
Sarah Crooks, Trinidad and Tobago

16:30 End of Day 1 Sessions

16:00-16:30 Break and Poster Session
10:45-11:15  Break and Poster Session

11:15-11:45  Keynote Lecture
Childhood cancer in low and middle income countries
Prof Christina Stefan, South Africa

11:45-12:45  Plenary 4 Presentations: Childhood cancer
National distribution of childhood cancer stage and stage-specific survival in Australia using the Toronto Guidelines
Joanne Aitken, Australia

Time trends incidence and survival of childhood cancer in Argentina: Argentine Oncopediatric Registry - INC [ROHA] 2000-16
Florencia Moreno, Argentina

Influence of treatment strategy on acute lymphoblastic leukemia net survival in a French population
Marc Maynadie, France

12:45-14:15  Lunch and Poster Session

14:15-15:15  Parallel Sessions 3
Group 3A
Small steps towards global cancer control: A Manitoba (Canada) and Jaffna (Sri Lanka) collaboration
Donna Turner, Canada

Contrasting information sources on new cancer cases accessing to health care services in Bucaramanga, Colombia
Gustavo Hernandez, Colombia

Transforming to a modern era cancer registry by implementing cancer registry informatics in the Sri Lanka Cancer Registry
Kamal Seneviratne, Sri Lanka

Group 3B
Increasing data source to increase the data quality of the Jakarta Barat Population-Based Cancer Registry
Sinulingga Dian Triana, Indonesia

Estimating complete cancer incidence in the absence of death certificate notifications: The Netherlands Cancer Registry
Brendy Wauven, the Netherlands

Mandatory cancer notification in Brazil: Current scenario and future perspectives
Mariana de Camargo Cancela, Brazil

How many people need palliative care for cancer and non-cancer diseases in Colombia?
Esther de Vries, Colombia

15:15-16:00  Parallel Sessions 4
Group 4A
Childhood cancer and industrial air pollution in Bucaramanga, Colombia: A spatial analysis
Ana Maria Valbuena, Colombia

Keiu Paapsi, Estonia

Germ cell cancer incidence rates in Japan and U.S. according to age and race/ethnicity
Kota Katanoda, Japan

Group 4B
Natasha Abraham, South Africa

Rare cancer care lags behind: recommendations to guide policy-making based on the Netherlands Cancer Registry
Jan Maarten Van der Zwan, the Netherlands

How can we improve the urothelial tumours registration? First results of a GRELL collaborative study
Jaume Galceran, Spain

16:00-16:30  Break and Poster Session

16:30-17:00  Keynote Lecture
Use of cancer registration data in Puerto Rico
Dr Guillermo Tortolero Luna, Puerto Rico

17:00-18:00  Plenary 5 Presentations: Challenges (and solutions) to cancer registration
The analysis of public opinion in newspaper articles supporting cancer registry
Tomohiro Matsuda, Japan

Accounting for immigrant status when calculating cancer incidence rates for Bangkok
Suleeporn Sangrajrang, Thailand

Standardizing Cancer Registration in the Caribbean through the IARC Regional Hub
Betsy Kohler, USA

Supporting Cancer Registration in the IARC/GICR Latin American Hub: Progress And Challenges
Marion Piñeros, IARC

18:00  End of Day 2 Sessions

19:30  Social Programme and Dinner:
Monasterio de Santa Catalina
Santa Catalina 301, Arequipa
DAY 3 - THURSDAY, 15TH NOVEMBER

09:00-09:30 Keynote Lecture
Cancer registries’ role in improving cancer control: The Colombian experience
Prof Luis Eduardo Bravo

09:30-10:30 Parallel Sessions 5

Group 5A
Indirect costs of breast cancer in Colombia: More than 100 years of study
Rusvelt Vargas Moranth, Colombia

Developing an Integrated Clinical-Decision-making Scheme (ICDS) for predicting the risk factors of second primary cancers
Chi-Chang Chang, Taiwan

Does age impact first-line treatment in ‘de novo’ metastatic breast cancer in Belgium?
Nancy van Damm, Belgium

Using stage and treatment information from cancer registries for the evaluation of treatment patterns
Francesco Giusti, EC-JRC (presented by Manola Bettio, EC-JRC)

Group 5B
Estimation of effects of colorectal cancer screening by FOBT for reduction in mortality with micro-simulation
Keisuke Fukui, Japan

Cohort Profile: The Finnish Meta-Cohort for Cancer Burden and Determinant Evaluation (Metca)
Sanna Heikkinen, Finland

Towards a distributed learning network for cancer registries
Jan Maarten Van der Zwan, the Netherlands

Software Comprev 3.0: A tool to quantify cancer burden by means of complete prevalence estimation
Anna Gigli, Italy

10:30-10:45 Coffee Break

10:45-12:00 IACR Business Meeting
IACR members and interested registries are invited to attend
Presentation of the 2018-2020 IACR Board of Directors
IACR President’s and Treasurer’s Reports
Updates: International Agency for Research on Cancer (IARC)
Updates: the Global Initiative for Cancer Registry Development
IACR 2019 Annual Conference Venue Presentation

12:00-13:00 Conference Awards and Closing Programme
Poster Awards
Enrico Anglesio Prize
IACR Awards and Recognition
Closing Remarks
Registries in 1986 and retired from this position in October 2018. Besides engaging in modernizing the registration process (through progressive automation), he promoted an intense use of the registration data for analytical case control-and cohort studies (both internally initiated and in cooperation with national and international research consortia) on etiology of melanoma, non-melanoma skin cancer, breast cancer, mesothelioma. At the beginning of the nineties, when cervical and breast (later on also colon) cancer screening programs started in the country, the Piedmont Cancer Registry enriched its collection of data and improved its operations in order to timely provide information for the assessment of the screening results.

Roberto served as a member of the Board of Directors of the Italian Epidemiology Association, as Executive Secretary of the South European Group for Cancer Registration (GRELL), as member of the Board of Directors of the Union for International Cancer Control (UICC). He represented UICC as observer at the IARC Scientific Council from 2007 to 2011.

He has been the editor of the Monograph Cancer in Italy, author of the booklet “Facts and Figures of Cancer in Italy”, and the editor of the Italian edition of the TNM UICC manual.

Roberto Zanetti also served as a consultant for epidemiology and cancer registration for the Ministries of Health of Italy, Switzerland and France. He has assisted Italian civil and criminal courts as expert in litigations and trials on matter of cancer causality.
Roberto has been among the founders of the Italian Association of Cancer Registries, and of the Angela Moroni foundation, a charity based in Torino that supports the Enrico Anglesio Prize. His services to the International Association of Cancer Registries (IACR) include a term as Regional Representative for Europe and a term as President, and the contribution to the Editorial Team of the eleventh edition of Cancer Incidence in Five Continents.

Johannes Clemmesen
(1908-2010)
He was a pioneer and founder of Danish cancer epidemiology. He founded and led the Danish Cancer Registry under the auspices of the Danish Cancer Society in 1942 giving Denmark a unique position in understanding cancer causes, development and incidence.

He led the Danish Cancer Registry until 1980. His publication series in 5 volumes “Statistical studies in malignant neoplasms” still stand as a milestone in cancer epidemiology with observations and analysis and literature review up to 1977. He was one of the first honorary members of the International Association of Cancer Registries.

Dr Shoichiro Tsugane
Epidemiological studies on Japanese immigrants and their descendants in South America
Japanese residents abroad is estimated to be approximately 3,800,000 in 2016 and a half of them (1,900,000) live in Brazil followed by Unite States (1,300,000), Canada (110,000) and Peru (100,000).
I first started to study on Japanese immigrants in Santa Cruz, Bolivia.

Due to small number of population (2,000), we conducted a cross-sectional study for all residents and collected several lifestyle and health-related indicators such as blood pressure and oncogenic virus infection status, without mortality and cancer incidence data among them. We then conducted descriptive epidemiological studies using mortality and cancer incidence data among Japanese immigrants and their descendants in São Paulo, Brazil and found some difference with those among Brazilian in São Paulo and Japanese in Japan and in USA. Based on these descriptive findings, we expanded our studies to analytical epidemiological studies using ecological and case-control design. We investigated lifestyle and health-related indicators for randomly selected Japanese residents in São Paulo and Lima, Peru, and compared the findings with Japanese in Japan. Thereafter we conducted case-control studies of stomach and breast cancer for Japanese and non-Japanese Brazilian in São Paulo to elucidate their risk factors.

Although ethnicity-specific cancer incidence data is only available in some areas of USA (CIS5), such information is important to conduct epidemiological studies for elucidating the roles of environmental and genetic factors in carcinogenic process and for preventing cancer.

KEYNOTE 1: DR SHOICHIRO TSUGANE
Dr. Shoichiro Tsugane is a medical epidemiologist and the director of Center of Public Health Sciences, National Cancer Center in Japan. He is the principal investigator of two large-scale prospective follow-up studies JPHC Study since 1990 and JPHC-NEXT since 2011, approximately 100,000 population each. He has also conducted several epidemiological studies on Japanese immigrants and their descendants mainly in São Paulo, Brazil and also in Santa Cruz, Bolivia and Lima, Peru. His research focuses on the investigation of how dietary, lifestyle, social, environmental and genetic factors are related to cancer and other non-communicable diseases.

KEYNOTE LECTURES

KEYNOTE 2: DR EDUARDO CAZAP
Eduardo Cazap MD, PhD is an Argentinian medical oncologist with a longstanding clinical and scientific career in Argentina and internationally. He is the founder and first President of the Latin American & Caribbean Society of Medical Oncology (SLACOM), Past-President of the International Union against Cancer (UICC)
survival worldwide. Cancer registration needs priority in order to diminish cancer Global cancer control is an urgent and data to implementation 

Global strategies in Cancer Control: from conferences.

global cancer and health meetings as well plenary speaker, chair or moderator at international experience and is a regular Eduardo Cazap has a vast in-country and Society of Clinical Oncology (FASCO).
The application of the information provided by population-based cancer registries and other sources of information will serve as a platform to properly plan cancer education, prevention, diagnosis, treatment and survivorship for cities, provinces, countries and also to facilitate the development of regional strategies. This presentation will provide to the audience a situation map of the problem at a global level as well as different possible strategies to overcome the existing limitations, gaps and duplications.

The need of a multi-stakeholder approach and the concept that this situation is not only valid for Low and Middle Income countries will also be discussed in detail.

KEYNOTE 3: PROF CRISTINA STEFAN
Professor Stefan completed Oncology and Paediatrics Fellowships and Masters, Masters in Cancer Epidemiology and PhD in Education a few years later. She was a fellow at St Jude Children’s Cancer Research Hospital and received a fellowship in cancer prevention and control at NCI. She was also a fellow of cancer registration and epidemiology program at IARC in Lyon where she was invited to teach about cancer in developing countries.

Professor Stefan published 1 book (2 others in press- in oncology), 9 chapters in books, a number of articles and being also involved in many clinical trials.

KEYNOTE 4: DR GUILLERMO TORTOLERO LUNA
Dr. Tortolero-Luna is Director of the Division of the Cancer Control and Population Sciences at the University of Puerto Rico Comprehensive Cancer Center since 2012. He is an epidemiologist with more than 25 years of experience conducting cancer control research, much of which has focused on Hispanic populations in Puerto Rico and the U.S. mainland. He has experience conducting research in clinical and community settings and working with multidisciplinary teams. His research extends along the continuum of cancer control from cancer risk to survivorship. More recently, his research interest focuses on cancer care delivery research, cancer registry linkages to health insurance claims data to address the pattern, quality, cost, and outcomes of cancer care in the island.

He is currently Multiple-PI of the Puerto Rico NCI Community Oncology Research Program (NCORP)-Cancer Care Delivery Research Component which addresses the patterns of care, cancer outcomes, and survivorship among the cancer population in Puerto Rico.

He is the PI of the Cancer Control Coordinating Center which integrates the CDC’s Cancer Prevention and Control Programs: 1) the Puerto Rico Central Cancer Registry (PRCCR); 2) the Puerto Rico Breast and Cervical Cancer Early Detection Program (PRBCCEDP), and 4) the Puerto Rico Colorectal Cancer Control Program (PRCRCRP). As PI of the PRCRCRP, he is responsible for coordinating and supporting the review and implementation of the Puerto Rico Comprehensive Cancer Control Plan.

**Prof Cristina Stefan**

She is active internationally in the field of cancer registration, continuous education of cancer specialists, cancer control guidelines, twinning and research activities in 18 African countries. She speaks French fluently and understands Portuguese. Prof Stefan had the first initiative in the world to introduce a “twinning” concept between 2 African countries (South Africa and Namibia) and showing success.

Prof Stefan is currently President of the African Organisation for Research and Training in Cancer (AORTIC), founder of the African Cancer Institute, chair and founder of African Cancer Economics Network, chair of AORTIC paediatric oncology and formerly co-chair of research committee.

**Childhood cancer in low and middle income countries**

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Prof Stefan is currently President of the African Organisation for Research and Training in Cancer (AORTIC), founder of the African Cancer Institute, chair and founder of African Cancer Economics Network, chair of AORTIC paediatric oncology and formerly co-chair of research committee.
Puerto Rico Central Cancer Registry: The transformation of an epidemiologic cancer Surveillance System

The Puerto Rico Central Cancer Registry (PRCCR) is the 5th oldest cancer registries in the world and the 3rd oldest in the United States (US). The PRCCR is a population-based registry covering the entire island of Puerto Rico. Between 1973 and 1987 the PRCCR was part of the NCI’s SEER Program and since 1997 it is part of the CDC’s National Program of Cancer Registries (NPCR). Currently, the PRCCR is Gold Certified by NAACCR and recognized as Registry for Surveillance by the NPCR. In 2008, the PRCCR transferred from the Puerto Rico Department of Health (PRDH) to the Division of Cancer Control and Population Sciences of the University of Puerto Rico Comprehensive Cancer Control (DCCPS-UPRCCC) with a Memorandum of Understanding. At the DCCPS-UPRCCC the PRCCR resides at the Cancer Prevention and Control Coordinated Center integrated with the other three CDCs cancer prevention and control programs. The transfer to DCCPS-UPRCCC was a key factor for the expansion of the scope and increase usability of the PRCCR data.

In addition to the standard function of assessing the burden of cancer in the population, the PRCCR has become an important resource for cancer research, cancer control activities across the cancer control continuum, and assessment of cancer disparities. In order to enhance the capabilities and richness of the PRCCR, we have conducted linkages to secondary data bases including linkage to health insurance claims data (PRCCR-Health Insurance Linkage Database [PRCCR-HILD]). This database has allowed us to assess the pattern of cancer care delivery in Puerto Rico. This database includes all cancer cases diagnosed in the island from 2008-2016. Other data linkages conducted by PRCCR are: US Census data (to develop a socioeconomic position index); Puerto Rico Breast and Cervical Cancer Early Detection Program; HIV-Surveillance System; and the Retrovirus Research Center HIV/AIDS Registry [HAR].

Further, PRCCR became an important resource for training and research projects of undergraduate and graduate students, as well as medical residents and fellows. Finally, the PRCCR is a resource to inform public policy and educate the general population about cancer-related issues.

KEYNOTE 5: PROF LUIS EDUARDO BRAVO

Luis Eduardo Bravo is Professor Emeritus of Pathology and Epidemiology at Universidad del Valle, Colombia for the last 25 years. Director of the Population-based Cancer Registry of Cali since 2001, has dedicated his efforts to researching cancer, especially gastric cancer and its relationship with Helicobacter pylori. He was recently elected Regional Representative of the International Association of Cancer Registries (IACR) for Latin America, 2018-2022.

Cancer registries' role in improving cancer control: The Colombian experience

Comprehensive cancer control is a strategic approach that brings together the main associations and organizations of a community to prevent or minimize its impact and to develop a plan to reduce the number of citizens who become ill or die from cancer. Population-based cancer registries represent the gold standard for providing cancer incidence and survival figures in a region and is a key element in cancer control because they provide indicators for planning and evaluating cancer control activities and carrying out cancer research.

The Cali Population Cancer Registry (RPCC) has been in continuous operation since 1962 with the objective of producing valid statistics on the incidence of cancer, its patterns, trends and survival rates. This information is necessary for health authorities to make estimates of cancer risk for other regions of Colombia that are lacking cancer registries. These statistics provides uninterrupted continuous monitoring, which allows detailed analyses of the 50 year-incidence, 30 year-mortality and 15-year-survival of cancer in the region.

Prostate and breast cancer are the first cause of cancer morbidity. The incidence rates in these screening-related cancers stabilized after decades of growth, while an increase in the incidence of colon cancer and papillary thyroid carcinoma was observed. The incidence rates of infection-related cancers [cervix uteri and stomach cancer] have decreased, although the number of absolute cases increased, due to the growth and aging of the population. Gastric cancer is responsible for the highest number of cancer related deaths. The tobacco-related cancers [lung, oral cavity, esophagus, pancreas, urinary bladder] show low numbers and a tendency to decrease. During the period 2000-2004, the 5-year net survival improved for cancers of the breast, cervix, prostate, melanoma and thyroid; although in the current period a stagnation was observed. In stomach, liver and lung cancer, the 5-year net survival was less than 15%. The 5-year overall survival in children was 51.0% (95% CI: 47.5, 54.3) and in adolescents 44.4% (95% CI: 36.0, 52.8).

RPCC has been an advisor to the Colombian government in the evaluation of CPRs in the country and its data has contributed significantly to different aspects of cancer control in Colombia.
This year there are 2 pre-conference workshops to provide additional training and information to interested conference delegates looking to more in-depth lectures and discussions on quality of cancer registries and their role in cancer control and prevention.

**PRACTICAL INFORMATION ON THE IACR PRE-CONFERENCE WORKSHOPS**

Workshop 1 & 2 are Parallel Sessions  
**Date:** Monday, 12 November 2018  
**Time:** 09h00 – 17h00  
**Location:** Misti Conference Rooms, Hotel Costa del Sol, Arequipa

**WORKSHOP 1: QUALITY OF CANCER REGISTRIES**

**OBJECTIVES OF THE WORKSHOP**
- Understand the main concepts in data quality control in PBCR  
- Review procedures to check the data quality in a cancer registry; discuss routines and associated challenges  
- Understand the C5 Editorial process

**TOPICS**

**Part 1. Background and Introduction**  
- Presentation of faculty and participants  
- Brief update on CSU and its main projects, GICR

**Part 2. Data Quality in the process of cancer registration**  
- Comparability [Standards: Date of Incidence / Multiple primaries / Incidental diagnosis]  
- Validity [Re-abstracting, MV%, DCO%, Missing information, Consistency, IARCcrgTools]  
- Timeliness  
- Completeness of case finding [Qualitative methods / Semi-quantitative]

**Part 3. Checking the quality**  
- Experience of registries: periodicity, assets and challenges [Discussion]  
- The CI5 Editorial process  
- Stability of reporting  
- Age specific incidence  
- DQ Indicators  
- C5 Exercise

**FACULTY**

**Dr Marion Piñeros, MD**  
Scientist, Section of Cancer Surveillance, International Agency for Research on Cancer - Lyon, France

Marion Piñeros is a medical doctor from the Universidad el Rosario in Colombia and master of Public Health from the London School of Hygiene and Tropical Medicine in London. Before working at the International Agency for Research on Cancer she worked for one year at the Programme for Action on Cancer Therapy (PACT) from the International Agency of Atomic Energy (IAEA) and fourteen years at the National Cancer Institute in Colombia.

Her main interest has been the production, dissemination and use of information for cancer control. She has advocated for a clear understanding among stakeholders of the role of PBCR in cancer surveillance and is interested in the best ways of delivering technical assistance for cancer registry development. She is the IARC official for the IARC Regional Hub for Cancer Registration in Latin America, working in close collaboration with the Coordinating centre in Argentina and the collaborating centres in Brazil, Colombia and Uruguay.

**Dr Esther de Vries, Dr PhD**  
Pontificia Universidad Javeriana, Department of Clinical Epidemiology and Biostatistics, Bogota, Colombia; and Department of Public Health, Erasmus MC Rotterdam, the Netherlands

Esther de Vries is a biologist with a PhD in Epidemiology and Public Health, associate professor of clinical epidemiology at the department of Clinical Epidemiology and Biostatistics of the Pontificia Universidad Javeriana and assistant professor of Cancer surveillance at the department of Public Health of Erasmus MC in Rotterdam. Currently she is the director of the Doctoral programme in Clinical Epidemiology of the department of Clinical Epidemiology and Biostatistics of the Pontificia Universidad Javeriana. Previously, she was the associate director for research and public health of the Colombian National Cancer Institute.

Since the year 2000, she has been involved in multiple cancer-registry based descriptive studies on the burden of cancer, initially in the Netherlands but later expanding to Europe and since her IARC Transfer of Expertise fellowship in 2013, closely involved with the improvement and development of population-based cancer registries in Central and South America through the Latin America Hub of the Global Initiative for Cancer Registry Development - coordinated by the International Agency for Research on Cancer (GICR-IARC hub). She has authored over 150 scientific articles in international peer-reviewed journals on this topic and continues to work for better conditions for the registries and cancer care in the area, better possibilities for data-linkage, more optimal use of the available data and improvement of available data.
WORKSHOP 2: CANCER REGISTRIES AND CANCER CONTROL AND PREVENTION

OBJECTIVES OF THE WORKSHOP
- Understand the main roles of cancer registry data in planning, monitoring and evaluation in each major domain of cancer control
- Identify major reasons of success and failure in the utilisation of registry data for cancer control
- Understand various communication strategies of registry results and the importance of communicating the results

TOPICS
Part 1. Role of cancer registries in cancer control
Past, present and future work of the Cancer Surveillance Unit, IARC and the Global Initiative for Cancer Registry Development (GICR) in relation to cancer registries

Use of CR data in:
- Planning for cancer prevention, early detection, treatment, palliative + supportive care
- Monitoring for cancer prevention, early detection, treatment, palliative + supportive care
- Evaluation for cancer prevention, early detection, treatment, palliative + supportive care

Part 2. Communication strategy to support cancer control
Cancer Surveillance Framework in relation to cancer control Reporting and communicating cancer registry data and information: Group work on Use of CR data in:
- Standard reports
- Fact sheets
- Special reports
- Articles
- News briefs or press releases
- Summary: Reporting and communicating cancer registry data and information

Setting up a Communication plan

FACULTY
Isabelle Soerjomataram, MD, PhD
Deputy Head, Section of Cancer Surveillance
International Agency for Research on Cancer (IARC)

Isabelle Soerjomataram is a medical epidemiologist with a special interest in causes, and prevention of cancer. She received her medical degree from the University of Indonesia in 2001. Following a PhD in cancer epidemiology (2007) at the Public Health department at Erasmus Medical Centre in Rotterdam, she went to the Harvard School of Public Health as a fellow in Global Health to work on designing the disability-adjusted life years estimation for cancer globally. She took a position at IARC in 2011 where she is currently assessing international variation of the cancer burden using mainly population-based datasets.

In addition to her research activities, she is coordinating several large projects funded by various institutions including the Cancer Research UK, WCRF, and the National Cancer Institute in France. One seminal project involving over 60 experts in France, she coordinates the estimation of the proportion of cancer attributable to all known lifestyle and environmental risk factors in France. More internationally she is leading the global estimation of attributable fraction for cancers related tobacco smoking, alcohol, obesity and also Solar UV radiation. Other projects that she leads or co-leads are cancer survival projects, in high-income and also low- and middle income settings assessing the effectiveness of the local health system as well as influence of major risk factors such as obesity.

Dr Guillermo Tortolero-Luna, MD, PhD
University of Puerto Rico Comprehensive Cancer Center
Co-Director, Puerto Rico Cancer Registry

Dr. Tortolero-Luna is Director of the Division of the Cancer Control and Population Sciences at the University of Puerto Rico Comprehensive Cancer Center since 2012.

He is an epidemiologist with more than 25 years of experience conducting cancer control research, much of which has focused on Hispanic populations in Puerto Rico and the U.S. mainland. He has experience conducting research in clinical and community settings and working with multidisciplinary teams. His research extends along the continuum of cancer control from cancer risk to survivorship. More recently, his research interest focuses on cancer care delivery research, cancer registry linkages to health insurance claims data to address the pattern, quality, cost, and outcomes of cancer care in the island.

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PLENARY SESSIONS

36 SOCIAL DISPARITIES ON BREAST CANCER INCIDENCE IN A LOW-MIDDLE INCOME COLOMBIAN POPULATION
CANCER PREVENTION IN THE CARIBBEAN AND SOUTH AMERICA: HOW MANY CAN BE PREVENTED?

37 UP AGAINST A LIMIT? USING MODELLING AND CANCER REGISTRY SURVIVAL DATA TO ESTIMATE RECURRENCE BURDEN
BAYESIAN SPATIAL MODELLING OF SOCIOECONOMIC ENVIRONMENT AND CANCER INCIDENCE IN SLOVENIA

38 CANCER REGISTRY DATA SUPPORT DECISION TO CENTRALIZE SURGERY FOR PANCREATIC AND ESOPHAGEAL CANCER IN BELGIUM
WHEN WILL BREAST CANCER PATIENTS BE CURED? A MODEL PREDICTING CONDITIONAL EXTRA RISK ON MORTALITY

39 USING CANCER REGISTRIES TO DEMONSTRATE EFFICACY OF TARGETED THERAPIES IN THE GENERAL POPULATION
SKIN MELANOMA DEATHS WITHIN 1 OR 3 YEARS FROM DIAGNOSIS: ARE THEY DECREASING IN EUROPE?

40 CANCER SURVIVAL IN MALAYSIA: A POPULATION - BASED STUDY
WOMEN’S CANCERS: A WORLD-WIDE HIGH-RESOLUTION STUDY TARGETED AT CANCER CONTROL AND DECISION-MAKING

41 SUPPORTING THE IMPROVEMENT OF DATA AVAILABILITY FOR CANCER CONTROL AND PREVENTION IN THE CARIBBEAN
NATIONAL DISTRIBUTION OF CHILDHOOD CANCER STAGE AND STAGE-SPECIFIC SURVIVAL IN AUSTRALIA USING THE TORONTO GUIDELINES

42 TIME TRENDS INCIDENCE AND SURVIVAL OF CHILDHOOD CANCER IN ARGENTINA: ARGENTINE ONCOPEDIATRIC REGISTRY-INC (ROHA), 2000-16
INFLUENCE OF TREATMENT STRATEGY ON ACUTE LYMPHOBLASTIC LEUKEMIA NET SURVIVAL IN A FRENCH POPULATION

43 THE ANALYSIS OF PUBLIC OPINION IN NEWSPAPER ARTICLES SUPPORTING CANCER REGISTRY
ACCOUNTING FOR IMMIGRANT STATUS WHEN CALCULATING CANCER INCIDENCE RATES FOR BANGKOK

44 STANDARDIZING CANCER REGISTRATION IN THE CARIBBEAN THROUGH THE IARC REGIONAL HUB
SUPPORTING CANCER REGISTRATION IN THE IARC/GICR LATIN AMERICAN HUB: PROGRESS AND CHALLENGES
PLENARY - SESSION 1

SOCIAL DISPARITIES ON BREAST CANCER INCIDENCE IN A LOW-MIDDLE INCOME COLOMBIAN POPULATION

Ms Luisa Mercedes Bravo, Ms Maria Clara Yépez Chilán, Dr Diego Jurado
Cancer Registry of Pasto Colombia, Centro de Estudios en Salud, Universidad de Nariño, Pasto, Colombia

Background
The study of social disparities in cancer incidence and outcomes is the first step for identifying population at risk for being prioritized in public health policies and interventions programs. This study analyses breast cancer incidence by socioeconomic conditions in Pasto-Colombia.

Methods
A population-based cross-sectional study with all cases of breast cancer (N=765) diagnosed during 1998–2012 and characterized by Cancer Registry of Pasto-Colombia was performed for estimate the effect of SE conditions (Zone of residence, SE stratum, occupation, level of education) on incidence rates. Models were fitted using poisson regression and adjusting by covariates.

Results
Global incidence rate was 26 cases per 100,000 females-year. By SE conditions, highest incidence rates were presented in women living in urban areas (Incidence rate IR 28.6 per 100,000 females-year), in high SE stratum (IR 34.4 females-year), with occupation (IR 25.1 females-year), with a non-subsidized health insurance (IR 160.7 females-year) and with a high education level (IR 37.4 females-year).

In poisson regression, zone of residence, Health insurance and education level were related to incidence; women living in urban areas, with a non-subsidized health insurance and with a high education level have more risk of developing breast cancer (Incidence rate ratio IRzone=2.86, 95% CI 2.04; 3.7); SE stratum (IRRoccupation=2.57, 95% CI 1.83; 3.54), and level of education (IRReducation=4.34 CI95% 1.02;20.0) compared to those living in rural areas, with a subsidized health insurance and low education level, respectively.

Discussion and Conclusions
Breast cancer prevention programs should be focalized in vulnerable social groups with high SE conditions. Further studies must consider exploring the mechanism of the effects of social determinants, especially SE conditions, in breast cancer incidence.

CANCER PREVENTION IN THE CARIBBEAN AND SOUTH AMERICA: HOW MANY CAN BE PREVENTED?

Dr Isabelle Serojmartam, Dr Marion Pineros, Jerome Vignal, Dr Freddie Bray
International Agency For Research On Cancer, Lyon, France

Background
In the Caribbean and South America (CSA), cancer has become a major cause of illness and deaths. An estimated 1.1 million new cancer cases were diagnosed in 2012, and this is expected to continue rising to 1.8 million in 2030 despite large expenditure spending on early detection and cancer treatment. Here we sought to assess the potential in cancer prevention by estimating the avoidable numbers and proportions of cancers amenable to prevention in CSA.

Methods
We extracted data from the GLOBOCAN database for 17 cancers proven to have a causal relation to six major cancer risk factors: smoking, alcohol, overweight, physical inactivity, unhealthy diet and solar ultraviolet radiation. We calculated aspirational incidence rates with populations larger than 0.5 million inhabitants. We assumed that the lowest estimated rates were to be attainable throughout the region. The difference between the age- and gender-specific national cancer incidence rates and the average of the three lowest rates estimated in 2018 was estimated and defined as potentially preventable.

Results
450,000 cancers or 42% out of all cancers (34% and 50% for males and females respectively), were potentially preventable. Among males, the proportion was largest in Uruguay (50%) and among females in Cuba (61%). Despite large variation by country and region, large proportion of preventable cancers was related to large proportion of smoking among males (lung, head and neck cancers) and cancers related to skin exposure among females (skin melanoma).

Discussion and Conclusions
The potential for cancer prevention in CSA is large; about 4 out of 10 cases could be potentially avoided. Interventions directed at reducing smoking and sun exposure as well as taking up other healthy lifestyle options are key to reduce this large burden of cancer in the region.
**CANCER REGISTRY DATA SUPPORT DECISION TO CENTRALIZE SURGERY FOR PANCREATIC AND ESOPHAGEAL CANCER IN BELGIUM**

Dr Harlind De Schutter1, Dr Geert Silversmit1, Dr Karijn Lievens2, Dr Veerle Van Eycken2, 1Belgian Cancer Registry, Brussels, Belgium, 2Department of Radiation Oncology, University Hospitals Leuven, Leuven, Belgium

**Background**
Belgium currently counts 104 hospitals providing oncological care, resulting in very accessible but shattered care which may influence outcomes. In view of centralization initiatives, this study aimed to evaluate relations between complex surgeries and outcomes for peri/pancreatic and esophageal cancers in the Belgian hospitals.

**Methods**
All patients with (peri)pancreatic (ICD10: C25, C17.0, C24.8-1) or esophageal (C15-C16.0) cancer between 2007 and 2014 were extracted from the Cancer Registry and linked with surgeries (Sx) from reimbursement data. Three yearly volume categories of Sx per center were defined ([peri]pancreatic: <6, 6-14 and ≥15 surgeries per year); relations between surgical volumes and 30-days postoperative mortality as well as 5-year overall survival (OS) were analyzed with multivariable regression models adjusting for case-mix (age, stage, comorbidities).

**Results**
12,241 esophageal and 16,671 (peri)pancreatic cancers were retrieved, corresponding to 3,387 esophageal and 4,081 (peri)pancreatic cancer surgeries performed by 96 hospitals in total (2014: 54 hospitals for esophageal and 68 for (peri)pancreatic cancer surgery). Surgical volumes were significantly related with 30-days postoperative mortality for (peri) pancreatic and esophageal cancer (p=0.005 and p<0.0001 respectively), with 52% and 81% mortality reduction for high vs low volume hospitals, respectively.

The volume effect was also seen for OS: for both cancer types, high volume hospitals had a better OS compared to low volume which remained significant after case mix adjustment. For peri/pancreatic cancer, 1-yr and 5-yr OS for high volume centers was 75% vs 69% and 34% vs 31%, respectively (HR 0.65 [0.55, 0.76], p<0.0001). For esophageal cancer, 1-yr and 5-yr OS for high volume centers was 77% vs 71% and 44% vs 38%, respectively (HR 0.88 [0.79,0.99], p=0.04).

**Discussion and Conclusions**
High versus low volume centers showed better results for postoperative mortality and survival for (peri)pancreatic and esophageal cancers, supporting centralization initiatives in Belgium.

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**WHEN WILL BREAST CANCER PATIENTS BE CURED? A MODEL PREDICTING EXTRA RISK ON MORTALITY**

Prof. Sabine Siesling1, Dr Marissa van Maeren1, Dr Rob Verhoven1, Dr Robert Kneepkens2, MSc Joske Verbaan3, Prof. Peter Huizinga4, Prof. Hans van Duin1, 1Netherlands Comprehensive Cancer Organisation, Utrecht, Netherlands, 2Acmea Pension & Life, Apeldoorn, The Netherlands, 3De Hoop Life Reinsurance, The Hague, The Netherlands, 4University of Twente, Enschede, The Netherlands

**Background**
Many breast cancer (BC) survivors are facing difficulties in getting a life insurance, facing raised premiums or rejections even after they survived several years. This study aimed to develop a prediction model estimating the conditional extra mortality risk of BC patients compared to the general Dutch population.

**Methods**
All surgically treated women diagnosed with non-metastatic invasive BC in 2003–2006 were selected from the Netherlands Cancer Registry. Multivariable logistic regression models for stage I-III were performed to estimate conditional mortality risks for every single year, until 10 years after diagnosis (5 levels in total). The conditional extra mortality risk was calculated by subtracting the risk of the general Dutch population having the patient population, matched by age, gender and year. The 10-year extra mortality was calculated by multiplying outcomes for every year after diagnosis. Goodness-of-fit and discriminatory accuracy were assessed by the Hosmer-Lemeshow test and the area under the receiver operating characteristic curve (AUC), respectively. All models were internally validated by bootstrap sampling with 1000 replications, and externally validated on patients diagnosed in 2007-2008 addition, the model was tested by life insurers.

**Results**
We included 23,234 patients (10,101 stage-I, 9,868 stage-II and 3,265 stage-III). The final models included age, grade, N-stage, lateralisation, sub-localisation, grade, multifocality, HR-status, HER2-status, type of surgery, axillary lymph node dissection, radiotherapy, (neo)adjuvant systemic therapy and targeted therapy. All models showed good calibration and discrimination after internal and external validation. Testing of the model by life insurers showed that insurability using the newly-developed model increased with 13% point, ranging from 0%-24% among subgroups.

**Discussion**
The final model provides accurate conditional extra mortality risks of breast cancer patients, which can be used by life insurers to make more reliable calculations. The model is expected to increase breast cancer patients’ insurability and transparency among life insurers.

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**USING CANCER REGISTRIES TO DEMONSTRATE EFFICACY OF TARGETED THERAPIES IN THE GENERAL POPULATION**

Dr Charles Wiggins
National Kidney Tumor Registry, Albuquerque, United States of America, Department of Internal Medicine, UNM School of Medicine, Albuquerque, United States of America, University of New Mexico Comprehensive Cancer Center, Albuquerque, United States of America

**Background**
The efficacy of novel, cancer-directed therapies is well-documented in randomized controlled trials (RCTs) but such modalities are licensed and widely administered in the general population of eligible cancer patients. However, therapeutic RCTs often rely on highly selected patient populations that may not well represent the wide range of patients to whom the therapies will ultimately be administered. Further, therapeutic RCTs are conducted in a closely-controlled environment to optimize adherence and minimize deviations from established protocols. For these reasons, the potential impact of promising therapies outside of the setting of a therapeutic RCT may fall short of the expected results. Population-based cancer registries are increasingly being used to address this knowledge gap.

**Methods**
This presentation will focus on results from several investigations that utilized data from central cancer registries to document successes and limitations of promising cancer-directed therapies that were widely disseminated in the United States. Examples include the use of imatinib for chronic myelogenous leukaemia (CML), novel and repurposed therapies for myeloma, and KRAS inhibitors for late stage kidney cancer.

**Results**
Results from these studies suggest that: 1) The probability of receiving imatinib decreased with age and the elderly population of CML patients did not fully reap the potential benefits of this targeted therapy, 2) Elderly myeloma patients were less likely than younger patients to receive novel and repurposed therapies, and 3) There may have been racial and age disparities in the dissemination of KRAS inhibitors for late stage kidney cancer patients in the general population.

**Discussion and Conclusions**
Data from population-based central cancer registries can be used to evaluate efficacies shown in clinical trials and identify problems and changes that were not evident in the relatively constrained environment and time frame of the RCT.

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**SKIN MELANOMA DEATHS WITHIN 1 OR 3 YEARS FROM DIAGNOSIS: ARE THEY DECREASING IN EUROPE?**

Prof. Stefano Rosso1, Dr Lidia Sacchetto2, Prof. Roberto Zanetti1, 1Piemont Cancer Registry, Torino, Italy, 2Politecnico di Torino, Torino, Italy

**Background**
The epidemic of skin melanoma in Europe was largely confirmed by an increase in thin (<1.5mm) and in situ lesions: in 1995–2012 the annual percent increase was 8.3% in women, 10.0% in men for thin melanomas; 7.7% in men, 6.2% in women for in situ lesions. Mortality increased in some regions, more slowly than incidence and not homogeneously. It was difficult to disentangle the effects of early diagnosis or misclassification from a true increase in risk. We propose to analyse trends of fatal cases (at 1 and 3 years from diagnosis), according to principal melanoma characteristics.

**Methods**
Incidence and mortality data were collected from population-based European cancer registries. These data included information on sex, age and year of diagnosis, histological type, location (invasive, in situ), lesion thickness, and vital status (dead or alive at year of diagnosis). Trends in the proportion of fatal cases by melanoma and patients characteristics were analysed with multivariate mixed effects log-linear models.

**Results**
The incidence of fatal cases rates occurring within one year of diagnosis was modified by sex, lesion thickness, histology type and body site (more fatal cases in women with thick melanomas of nodular type on the trunk). A significant fraction of fatal cases (24%) occurred in thin melanomas. After controlling for these factors, rates showed a slight decrease (-18% in years 2001–2006 and -21% in 2007-2012 compared to 1995-2000). There was no decrease in cases fatal at 3 years in the last period, and other controlling factors showed a weaker effect.

**Conclusions**
The detected decrease in fatal cases at 1 year supports the hypothesis that a higher diagnostic pressure may show a beneficial effect on more aggressive melanoma. However it seems still insufficient in the long run, not reducing overall mortality or late case-fatality rates.
Methods

The CONCORD-3 database includes incidence and follow-up data from 322 population-based registries in 71 countries for 37,512,025 patients diagnosed with one of 38 cancers during the 15 years (2000–2014), including 7,948,796 women diagnosed with a cancer of the breast, cervix or ovary. I propose to enhance the CONCORD database: 1. By collecting and analysing detailed data from primary medical records (e.g. stage at diagnosis, staging procedures, first course of treatment and, where available, prognostic bio-markers) of women diagnosed with breast, ovarian or cervical cancer in two or more countries per continent, in the most recent year during 2010-2014 for which data are available. 2. By estimating the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

Results

I will present the protocol for data collection and analysis, including plans for a feasibility study to assess the availability of high-resolution data world-wide.

Discussion

The CONCORD conference provides an ideal platform for colleagues from cancer registries all over the world to discuss the protocol and to identify registries that would be suitable to participate in this project. Insights from this project will contribute to the planning and implementation of cancer control strategies for women’s cancers, helping cancer registration to move from data generation to decision-making.

Supporting the Improvement of Data Availability for Cancer Control and Survival in the Caribbean

Dr. Glennis Andali-Brojotro, Mrs. Sarah Queenei-Crooks, Dr. Damali Martin, Mrs. Betty Kohler, Dr. Brenda Edwards, Dr. Leslie Mercy

Objectives

1. To estimate the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

2. To develop the protocol for a feasibility study to assess the availability of high-resolution cancer incidence and survival data from primary medical records (e.g. stage at diagnosis, staging procedures, first course of treatment and, where available, prognostic bio-markers) for women diagnosed with breast, ovarian or cervical cancer in Caribbean countries in the most recent year during 2010-2014 for which data are available.

Methods

A feasibility study will be conducted in three Caribbean countries: Barbados, Trinidad & Tobago and Jamaica. Detailed data from primary medical records (e.g. stage at diagnosis, staging procedures, first course of treatment and, where available, prognostic bio-markers) for women diagnosed with breast, ovarian or cervical cancer between 2010 and 2014 will be collected and analyzed. Results will be presented and discussed at the CONCORD conference.

Conclusion

The feasibility study will provide valuable information on the feasibility of collecting detailed data from primary medical records for women diagnosed with breast, ovarian or cervical cancer in Caribbean countries. This information will be used to develop a protocol for a larger study to assess the availability of high-resolution data for cancer incidence and survival in Caribbean countries. The results of the feasibility study will be used to design a larger study to assess the availability of high-resolution data for cancer incidence and survival in Caribbean countries.

Plenary - Session 3

Cancer Survival in Malaysia: A Population-Based Study

Dr. Azizah Ab Manan
National Cancer Institute, Malaysia

Background

This is the first population-based study on cancer survival in Malaysia to initiate Malaysian surveillance on cancer survival to assess the cancer survival trend over the years. It will serve as a baseline reference in monitoring the progress of national cancer control and prevention programs and cancer management.

Methods

A total of 72,884 cases of 15 most common cancers were selected from the population-based National Cancer Registry (NCR) database to estimate relative survival for a range of 0-10 years after diagnosis. Study population were among residents and citizens diagnosed with cancer in 2007-2011 and follow up to December 31st 2016.

Findings

The overall 5-year relative survival was highest in thyroid cancer (92.3%) followed by prostate (73.0%), corpus uteri (70.4%), female breast (66.8%) and ovary (54.5%). The lowest three were trachea & bronchus (11.1%), liver (12.8%) and pancreas (14%). Survival in leukaemia and lymphoma were higher in childhood (leukaemia 62.3%, lymphoma: 63.3%) compare to adults (leukaemia: 36.5%, lymphoma: 48.5%). Female has higher survival compared to males. Survival in Indians was higher for most of the cancer types, followed by Chinese and Malays. Majority of the cancers have better survival at younger age and declining as age progressed. Survival was also deteriorates as stage progressed.

Discussion

This study showed cancer survival estimates is highest in thyroid cancer (92.3%) followed by prostate (73.0%) and for other countries in Asia and the pattern in Malaysia are not far behind and comparable. This study showed cancer survival estimates in survival also exist between and within high-income countries. The aim is to assess the extent to which variations in the patterns of care explain the world-wide inequalities in survival and the number of avoidable premature deaths.

Women’s Cancers: A World-Wide High-Resolution Study Targeted at Cancer Control and Decision-Making

Dr Claudia Allemani
London School of Hygiene and Tropical Medicine, UK

Background

Breast, ovarian and cervical cancers are a major public health problem worldwide. CONCORD-3 has updated cancer survival trends to 2014 for 18 malignancies, including breast (women), cervix and ovary (11-15 years). World-wide differences in survival from these cancers are striking. Inequalities in survival also exist between and within high-income countries. The aim is to assess the extent to which variations in the patterns of care explain the world-wide inequalities in survival and the number of avoidable premature deaths.

Methods

The CONCORD-3 database includes incidence and follow-up data from 322 population-based registries in 71 countries for 37,512,025 patients diagnosed with one of 18 cancers during the 15 years (2000-2014), including 7,948,796 women diagnosed with a cancer of the breast, cervix or ovary. I propose to enhance the CONCORD database: 1. By collecting and analysing detailed data from primary medical records (e.g. stage at diagnosis, staging procedures, first course of treatment and, where available, prognostic bio-markers) of women diagnosed with breast, ovarian or cervical cancer in two or more countries per continent, in the most recent year during 2010-2014 for which data are available. 2. By estimating the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

Results

I will present the protocol for data collection and analysis, including plans for a feasibility study to assess the availability of high-resolution data world-wide.

Discussion

The CONCORD conference provides an ideal platform for colleagues from cancer registries all over the world to discuss the protocol and to identify registries that would be suitable to participate in this project. Insights from this project will contribute to the planning and implementation of cancer control strategies for women’s cancers, helping cancer registration to move from data generation to decision-making.

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Objectives

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2. By estimating the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

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A feasibility study will be conducted in three Caribbean countries: Barbados, Trinidad & Tobago and Jamaica. Detailed data from primary medical records (e.g. stage at diagnosis, staging procedures, first course of treatment and, where available, prognostic bio-markers) for women diagnosed with breast, ovarian or cervical cancer between 2010 and 2014 will be collected and analyzed. Results will be presented and discussed at the CONCORD conference.

Conclusion

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Plenary - Session 4

National Distribution of Childhood Cancer Stage and Stage-Specific Survival Australia using the Toronto Guidelines

Prof. Joanne Aitken, Adj. A/Prof. Danny Youlden, Ms Leisa O’Neill, Dr Robert Long, Dr Cleola Anderiesz

Objectives

1. By estimating the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

2. By estimating the number of avoidable premature deaths that are attributable to inequalities in five-year survival between and within countries.

Methods

All children (0-15 years) diagnosed in Australia from the Australian Childhood Cancer Registry (ACCR) from 1989-2014 were included in the Guidelines were ascertained from the Australian Childhood Cancer Registry. Data elements required for staging were extracted from medical records and a custom-built online application was used to record the data and automatically assign stage. Survival was calculated using the cohort method, with mortality follow-up to 31 December 2014.

Results

Of the total 2,193 cases, stage was assigned for 2,030 (93%) of whom 1,593 (78%) had early stage disease. There were statistically significant differences, in 5-year stage-specific survival for neuroblastoma (93% for stage I vs 50% for stage II, osteosarcoma (90% for localized vs 38% for metastatic), rhabdomyosarcoma (84% for stages I and II combined vs 47% for stage IV) and medulloblastoma (80% for stage M0 vs 36% for stage M3).

Discussion and Conclusion

Using the Toronto Guidelines, stage could be assigned for 93% of children compared to approximately 40% for whom stage is documented in the medical record. These results demonstrate the value of the Toronto Guidelines in facilitating collection of high-quality, population-based stage information. International implementation of the Guidelines is recommended to enable meaningful comparisons of stage-specific incidence and survival between countries and jurisdictions.

This work was supported through a national initiative by Cancer Australia as part of an approach to improving national cancer data on stage, treatment and recurrence.
Time Trends Incidence and Survival of Childhood Cancer in Argentina: Argentine Oncopediatric Registry Inc (ROHA). 2000-16

Dr Florencia Moreno, Dr Dora Loria, Dr Agustina Chaplin, ROHA-NET
Registro Oncopediatrico Argentino ROHA, CABA, Argentina

Background
To present incidence and survival trends of childhood cancer (CC) in Argentina in the period 2000-2016.

Methods
ROHA is a population-based hospital registry active since 2000 and is part of the National Pediatric Program at the National Cancer Institute of the Ministry of Health. The data from the ROHA network come from different sources: most are reported by Pediatric Oncology Units from all regions of the country. Estimated coverage is 92%.

The trend in incidence 2000-2016 was estimated as the annual percent change (APC) of the incidence rates, using the Joinpoint Regression Program.

Results
Five years overall survival (OS) in 2005-2011 was calculated using the method of Kaplan-Meier. For the SV Trend we calculated 3 years overall survival.

Discussion and Conclusion
Incidence rates are comparable to Latin American ones and lower than those in USA and European countries. Incidence rates remained stable over the period studied. Survival is inferior to what is observed in more developed countries. Many were the initiatives from the scientific community, cooperative, governmental, and non-governmental groups to improve the care of CC and significant improving changes survival were observed. The data generated by ROHA is the main source for defining Public Health policies in CC. Continue improving of these results is a challenge for our health system.

Influence of Treatment Strategy on Acute Lymphoblastic Leukemia Net Survival in a French Population

Mrs Sophie Gauthieri, Mrs Morgane Moumier, Mrs Stéphanie Giroux, Dr Claire Briandet, Dr Claire Desplantes, Dr Frédéric Huet, Prof. Marc Maynadie
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Acute Lymphoblastic Leukaemia (ALL) is one-third of paediatric cancers. Their prognosis improved since the sixties due to first clinical trials, then by the occurrence of modern chemotherapy, associated or not with bone marrow transplantation. In 2009, Net Survival [NS] at 5 years in France was close to 89% however no data on long-term survival was available. We estimate the NS at 20 years (NS20) in children with ALL in the Céte d’Or area.

Between 1970 and 2015, 162 cases were diagnosed in Côte d’Or [median age 4.8 years]. For the 70-80 periods, incident cases were recovered from the unique haematology laboratory in the region and the data obtained were merged with those of the registry that cover the same population. The vital status was updated at 01/01/2017. According to the evolution of treatment regimens, three groups were defined: 1) from 1970 to 1993 with patients subsequently treated with LAL 74 and 85, FRALLE 87 and 89 scheme; 2) from 1993 to 2001 with FRALLE 93; 3) 2000 to 2001 with FRALLE 2000.

Overall, NS20 was 67% being better for girls (75% vs 59%; p<0.001). NS20 was 100% in B-ALL than in T-ALL or unspecified ALL (82%, 65%, 34%; p<0.001). NS20 improved in parallel with the therapeutic strategy used: NS20 was 51% before the use of FRALLE 93, compared to 71% for cases treated with FRALLE 93 and then to 95% for those treated with FRALLE 2000 [p<0.001], without variation since 2001.

Data on long term survival of ALL in children are scarce. Our results show: 1) a very high 20 years survival rate in the general population indicating the efficacy and safety of the treatment regimens used, 2) the utility of randomized clinical trials to define new standards of care.

The Analysis of Public Opinion in Newspaper Articles Supporting Cancer Registry

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Background
Population-based cancer registry (PBCR) became a reality in Japan however the legal basis was not clear and financial scarcity from the government resulted in poor quality of the registration data. Collection of personal information is indispensable to check for duplicated records and patient follow-up. Privacy protection was one of the main obstacles to go through, which was directly related to the public opinion.

Methods
Articles with PBCR keywords of “cancer and registration”, “cancer and statistics”, “cancer and control policies” and “cancer and information” were extracted from 5 major newspapers and local papers published during the 3rd-term Comprehensive 10-year Strategy for Cancer Control (2004-2013), the era of improved quality and standardization of cancer registry. Out of the 960 that corresponded, 437 articles were taken up for analysis.

Results
Key social events occurred in the background while the articles on cancer registry increased. For instance, the legislation of Cancer Control Act in 2006 and Act on Promotion of Cancer Control (2004-2013), the era of improved quality and standardization of cancer registry. Out of the 960 that corresponded, 437 articles were taken up for analysis.

Discussion and Conclusion
The interest in cancer registry increased. For instance, the legislation of Cancer Control Act in 2006 and Act on Promotion of Cancer Registries in 2013, the health hazard incidents by carcinogenesis such as asbestos use in factories and the nuclear plant accident after the Great East Japan Earthquake of 2011 contributed to the increased interest of PBCR. The word ‘cancer registry’ appeared most in 2006 [68 times] followed by 2011 [65 times]. According to qualitative analysis, the tide of public opinion has turned against conservative privacy protection and towards the need for public access to cancer registry data.

Accounting for Immigrant Status When Calculating Cancer Incidence Rates for Bangkok

Dr Suneepon Sangrajrang, Mrs Rusangya Buasom, Dr David Roder, Mr Nisit Singhakosol, Ms Siriporn Sitthikong, Dr Elizabeth Buckley
National Cancer Center, Bangkok, Thailand, “University of South Australia, Adelaide, Australia

Objective
Cancer-registry data are crucial for defining cancer incidence rates for use in setting service priorities and monitoring service effects. This applies in Thailand where cancer is the leading cause of death and service needs are high. The Bangkok Cancer Registry (population-based) was established in 1990 to determine cancer incidence rates for Bangkok. This proved difficult, however, because the Bangkok population (~9 million) fluctuates with numbers of temporary visitors, many of whom visit Bangkok temporarily for services. If these visitors are misclassified as usual residents, cancer incidence rates would be inflated.

Methods
Residential addresses on the Registry were cross-checked against official addresses on the National Civil Registration records of the Ministry of Interior. We report the effects of this cross-checking on incidence rates.

Results
Of 44,813 cancer cases diagnosed and recorded on the Registry during 2013-2015, 36,327 (81.1%) had an official Bangkok address. When limiting analyses to these cases, the crude incidence for all cancer sites combined reduced by 18.9% (11.9%) for males and 18.3% for females. Corresponding reductions in age-standardized incidence rates were 20.0% for males and 18.8% for females. These reductions varied for common cancer sites: in males, from 14.8% for lung to 25.9% for colorectal cancer; and in females, from 12.9% for Lung to 24.0% for cervical cancer.

Conclusions
We consider these differences sufficient in magnitude to justify routine use of official residential data when calculating cancer incidence rates for Bangkok. If these rates are to be compared with comparable rates for other sites, then areas that serve multiple populations, equivalent methodologies for determining residential status would be needed for all cities.

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STANDARDIZING CANCER REGISTRATION IN THE CARIBBEAN THROUGH THE IARC REGIONAL HUB

Ms Betsy Kohler, Ms Sarah Quesnel-Crooks, Dr Damali Martin, Dr Brenda Edwards, Mr Leslie Mery, Dr Glennis Andall-Bereton

1. NAACCR, Springfield, United States, 2. CARPHA, Trinidad and Tobago, 3. NCI, Bethesda, United States, 4. IARC, Lyon, France

Background

The Caribbean Region is composed of many small island nations with diverse populations, cultures, and languages. Understanding the cancer burden in this region is problematic and further complicated by insufficient infrastructure, resources, and a lack of standardization in data collection and registry procedures.

Methods

To better understand cancer burden and improve the quality, availability and use of cancer data, the IARC Caribbean Regional Hub was established as part of the Global Initiative for Cancer Registry Development (GICR). Based at the Caribbean Public Health Agency (CARPHA), the Hub is supported by IARC, CDC (US), NCI (US), PAHO/WHO and NAACCR. Site visits to four countries, regional scientific conferences, and extant surveillance reports were utilized to establish priorities for improvement in cancer registration activities. In-person and remote training to improve data collection and analytic skills have been facilitated for persons from seven Caribbean registries. A standardized data collection and operating procedures manual has been developed for the region based on models from other Hubs and established sources with iterative feedback from Caribbean registries. Quantitative and expert qualitative data assessments of existing registry data have guided feedback discussions with registry/governmental leaders on areas for improvement. Networking, mentoring, and competitive fellowships to four registries and CARPHA staff were awarded to improve data collection and analytical skills.

Results

There is improved capacity and awareness at several Caribbean registries and tools are available to support a standardized regional approach to data collection.

Discussion and Conclusion

In the long term, Caribbean registries will collect data in a standardized manner allowing nations to compare national/regional data and support data aggregation into a Caribbean-wide dataset. An emphasis on standardized data elements and operating procedures reinforces the commitment to a common goal of quality Caribbean cancer data.

SUPPORTING CANCER REGISTRATION IN THE IARC/GICR LATIN AMERICAN HUB: PROGRESS AND CHALLENGES

Dr Graciela Abriata, Dr Enrique Barrios, Dr Marlianna de Camargo Cancela, Dr Esther de Vries, Dr Marion Pireiras


Background

The IARC/GICR Regional Hub for Latin America (LA Hub) was established in 2014, as for other Hubs, the core activities are training, tailored support, networking and research/cancer control.

Methods

The Hub organizational model established a regional coordinating center at the National Cancer Institute in Argentina and three collaborating centers, to provide support for Spanish- and Portuguese-speaking countries in Central America, the Caribbean and South America. Seed money was provided to each center tasked to focus on a specific role. An IARC scientist acts as a liaison officer facilitating and guiding activities.

Results

Existing population-based cancer registries PBCR cover almost 20% of the population in the 20 LA-Hub countries; high-quality PBCR have increased in number (from 23 to 28), though still do not cover more than 10% of the population in the region. The IARC/GICR Hub activities have included 20 site visits to 11 countries focusing on Central American countries. Over 400 participants have benefited from training courses and capacity-building (face-to-face and online) and mentorships were assigned to 9 mentees that continue to have online support. In addition, 400 GICRNet CanReg5 trainers have supported registries. Regular communication to foster networking has been established and valuable information on the registration status has been produced. Regional partners have supported activities while country specific partners are gradually starting to extend support also to other countries, likely panbolic in a further increase of high-quality PBCR in the region.

Discussion and Conclusion

Cancer registration is advancing in the region, through processes are slow. Given existing resources, tailored support needs to focus on specific countries. While training activities can reach a wider range of participants, face to face training needs to be strengthened and visits to non-yet visited countries would be an asset. Resources need to be mobilized in order to plan and develop further activities.
PARALLEL SESSIONS

48 TRENDS IN CANCER INCIDENCE AND MORTALITY OVER THREE DECADES IN QUITO - ECUADOR
TIME TRENDS IN BREAST AND CERVICAL CANCER INCIDENCE AND MORTALITY IN THE BARRETOS REGION [BRAZIL]

49 CHARACTERISTICS OF GASTRIC ADENOCARCINOMA AMONG YOUNG HISPANICS IN CALIFORNIA
 DISTRIBUTION AND INCIDENCE OF OVARIAN CANCER BY HISTOLOGIC SUBTYPES IN JAPAN

50 MEASURING THE CANCER BURDEN: THE EUROPEAN CANCER INFORMATION SYSTEM
NON-PARTICIPATION IN THE RANDOMIZED CRC SCREENING PROGRAMME IN FINLAND

51 FEMALE THYROID CANCER INCIDENCE AND PROXIMITY TO INDUSTRIES: A SPATIAL ANALYSIS IN AN ANDEAN CITY
GLOBAL TRENDS AND INFLUENCE OF COHORT AND PERIOD IN OVARIAN CANCER INCIDENCE

52 STAGNATION IN DECREASING GASTRIC CANCER INCIDENCE AND MORTALITY IN QUITO: TIME TREND ANALYSIS, 1985-2013
RELATIVE SURVIVAL IN HEAD AND NECK CANCER FROM POPULATION-BASED CANCER REGISTRY OF GOIANIA, BRAZIL

53 GENDER IN SURVIVAL OF CANCER PATIENTS
SURVIVAL BY RISK OF PROSTATE CANCER AND FACTORS ASSOCIATED TO SURVIVAL IN MALLORCA, 2006-2012

54 PATTERN OF CARE OF PROSTATE CANCER: RESULTS OF A POPULATION-BASED STUDY IN THE CARIBBEAN
LUNG CANCER ATTRIBUTABLE TO TOBACCO CONSUMPTION IN PORTUGAL IN 2015

55 CANCER INCIDENCE ESTIMATES, STATE SERGIPE, BRAZIL IN 2018, USING DATA PROVIDED BY ARACAJU CANCER REGISTRY
IMPLEMENTING A POPULATION-BASED CANCER REGISTRY IN A MEXICO-US BORDER CITY: BARRIERS AND INITIAL STEPS

56 SMALL STEPS TOWARDS GLOBAL CANCER CONTROL: A MANITOBA [CANADA] AND JAFFNA [SRI LANKA] COLLABORATION
CONTRASTING INFORMATION SOURCES ON NEW CANCER CASES ACCESSING TO HEALTH CARE SERVICES IN BUCARAMANGA, COLOMBIA

57 TRANSFORMING TO MODERN ERA CANCER REGISTRY BY IMPLEMENTING CANCER REGISTRY INFORMATICS IN THE SRI LANKA CANCER REGISTRY

58 INCREASE DATA SOURCE TO INCREASE DATA QUALITY OF JAKARTA BARAT POPULATION BASED CANCER REGISTRY
ESTIMATING COMPLETE CANCER INCIDENCE IN THE ABSENCE OF DEATH CERTIFICATE NOTIFICATIONS: THE NETHERLANDS CANCER REGISTRY

59 MANDATORY CANCER NOTIFICATION IN BRAZIL: CURRENT SCENARIO AND FUTURE PERSPECTIVES
HOW MANY PEOPLE NEED PALLIATIVE CARE FOR CANCER AND NON-CANCER DISEASES IN COLOMBIA?

60 CHILDHOOD CANCER AND INDUSTRIAL AIR POLLUTION IN BUCARAMANGA, COLOMBIA: A SPATIAL ANALYSIS
POPULATION BASED SURVIVAL TRENDS IN CHILDHOOD CANCER IN ESTONIA, 1970-2014

61 GERM CELL CANCER INCIDENCE RATES IN JAPAN AND U.S. ACCORDING TO AGE AND RACE/ETHNICITY
EVALUATION OF HAEMATOLOGICAL MALIGNANCIES IN THE SOUTH AFRICAN NATIONAL CANCER REGISTRY, 2004 – 2013

62 RARE CANCER CARE LAGS BEHIND: RECOMMENDATIONS TO GUIDE POLICY-MAKING BASED ON THE NETHERLANDS CANCER REGISTRY
HOW CAN WE IMPROVE THE UROTHELIAL TUMOURS REGISTRATION? FIRST RESULTS OF A GRELL COLLABORATIVE STUDY

63 INDIRECT COSTS OF BREAST CANCER IN COLOMBIA: MORE THAN 100 YEARS OF STUDY
DEVELOPING AN INTEGRATED CLINICAL-DECISION-MAKING SCHEME (ICDSS) FOR PREDICTING THE RISK FACTORS OF SECOND PRIMARY CANCERS

64 USING STAGE AND TREATMENT INFORMATION FROM CANCER REGISTRIES FOR THE EVALUATION OF TREATMENT PATTERNS
ESTIMATION OF EFFECTS OF COLORECTAL CANCER SCREENING BY FOBT FOR REDUCTION IN MORTALITY WITH MICRO-SIMULATION

65 DOES AGE IMPACT FIRST-LINE TREATMENT IN ‘DE NOVO’ METASTATIC BREAST CANCER IN BELGIUM?
COHORT PROFILE: THE FINNISH META-COHORT FOR CANCER BURDEN AND DETERMINANT EVALUATION (METCA)

66 TOWARDS A DISTRIBUTED LEARNING NETWORK FOR CANCER REGISTRIES
SOFTWARE COMPREV 3.0: A TOOL TO QUANTIFY CANCER BURDEN BY MEANS OF COMPLETE PREVALENCE ESTIMATION
TRENDS IN CANCER INCIDENCE AND MORTALITY OVER THREE DECADES IN QUITO, ECUADOR

Mr José Yépez1, Dr Fabián Corral1, Ms Patricia Cueva1, Dr Wilmer Tarupi1
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Background
The population-based Quito Cancer Registry has collected, processed, analysed and regularly disseminated information on new cases of cancer diagnosed in the city of Quito, Ecuador over the last three decades. This article analyses the trend in incidence and mortality rates for the period 1985-2013.

Methods
Incidence and mortality rates standardized by age were estimated by the direct method, using the world standard population (rates are expressed per 100,000 person-years). Joinpoint regression analysis was performed to estimate the annual percentage change (EAPC) for selected locations.

Results
A decrease in the incidence and mortality rates of cervical (EAPC = -2.6, 95% Confidence Interval [CI]: -3.2, -2.0) and stomach (EAPC = -0.5, 95% CI: -1.3, 0.4) cancers were documented. There was an increase in breast (EAPC = 1.9, 95% CI: 1.4, 2.3) and colorectal (EAPC = 2.5, 95% CI: 1.7, 2.3) cancers in women (EAPC = 1.4, 95% CI: 0.6, 2.2) cancer rates.

Conclusion
There are important variations in the evolution of cancer in Quito; the information presented is an instrument for monitoring and evaluating the interventions that are developed in the Quito city. There is still work to strengthen and focus primary and secondary prevention strategies, to further reduce the burden of cancer.

TIME TRENDS IN BREAST AND CERVICAL CANCER INCIDENCE AND MORTALITY IN THE BARRETOS REGION (BRAZIL)

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1Cancer Registry of Barretos Region, São Paulo, Brazil, Barretos Region, Brazil, 2Cancer Registry of Norway, Oslo, Norway

Background
Breast and cervical cancers represent a significant cause of morbidity and mortality among women. The purpose of this study was to analyze the survival and time trends in two of the most common female cancers in the Regional Health District (RHD) of Barretos, São Paulo, Brazil.

Methods
From 2000 through 2015, we calculated the breast and cervical cancer incidence and mortality rates per 100,000 women who were age-standardized to the world population. We obtained the time trends using the Joinpoint Regression software. We estimated the overall survival rates using the Kaplan-Meier methods.

Results
The age-standardized rates (ASR) for incidence of breast cancer increased annually, with an average annual percentage change (AAPC) of 4.3 (95% Confidence Interval [CI]: 2.4 to 6.3) for invasive breast cancer and 10.2 (95% CI: 6.1 to 14.5) for in situ breast cancer. The mortality rates for invasive breast cancer decreased with an AAPC of -0.2 (95% CI: -1.9 to 2.4). The ASR incidence of invasive cervical cancer showed an AAPC of -1.9 (95% CI: -4.7 to 0.9). For in situ cases, the ASR showed an AAPC of 9.3 (95% CI: 3.3 to 15.7). The ASR mortality for cervical cancer showed an AAPC of -5.3 (95% CI: -9.5 to -0.8). The Kaplan-Meier analysis indicated 5-year overall survival rates of 74.3% for breast cancer and 70.7% for cervical cancer.

Conclusions
The incidence of in situ and invasive breast cancer is increasing, while the mortality rates remain stable. We observed an increase in the incidence of in situ cervical cancer and a decrease in invasive incidence rates during the study period, and we noted that the cervical cancer mortality significantly declined during the study period.

CHARACTERISTICS OF GASTRIC ADENOCARCINOMA AMONG YOUNG HISPANICS IN CALIFORNIA

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Background
Gastric cancer (GC) is the third most common cause of cancer death worldwide and remains a significant problem in Latin America and among US Hispanics. Understanding early onset GC is important because of the likelihood of a genetic component.

Methods
Data from the California Cancer Registry were used to examine characteristics of Hispanic and non-Hispanic white (NHW) patients diagnosed under age 50 with gastric adenocarcinoma between 2006 and 2015. Distribution of gender, neighborhood socioeconomic status (nSES), histology, subsite, stage at diagnosis, and nativity were calculated in SAS using simple frequencies, and differences were analyzed using chi-square tests. nSES was determined using area-based socioeconomic variables from the 2010 Census for the patient’s block group of residence. Nativity (US versus foreign-born) was imputed through an algorithm that utilized the age the patient received a social security number.

Results
Nearly 7,000 Hispanics and over 8,000 NHW patients were identified, of whom 1,584 Hispanics and 635 NHW were under age 50 at diagnosis (22.9% vs. 19.9% respectively, p<.001). Young Hispanic patients were more likely than NHW to be female (47.2% vs. 33.1%, p<.001) and to reside in low SES neighborhoods (61.0% vs. 25.3%, p<.001). Young Hispanic patients were more likely than NHWs to have diffuse tumors (50.8% vs. 32.3%, p<.001) and non-cardia cancers (86.9% vs. 56.7%, p<.001). Among young Hispanics, 60% were foreign born, with the majority born in Mexico. Among both Hispanics and NHWs, young patients were more likely to be diagnosed after the cancer had spread to remote sites (56.9% and 51.7% respectively p<.001).

Discussion and Conclusion
OC survival has been improved over the past decade in Japan. The current OC survival is higher in Japan compared to the US. However, the proportion of the malignant histologic subtypes with worse survival was higher among Japanese than the US populations. In the future, we need to compare survival by histologic subtypes between countries and races.
NON-PARTICIPATION IN THE RANDOMIZED CRC SCREENING PROGRAMME IN FINLAND

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Background
Colorectal cancer (CRC) screening programme was a randomized health services study in volunteering municipalities in Finland. Participation rate in the screening programme was good but the effect on CRC mortality was moderate. The aim of this study was to evaluate the effect of socioeconomic and demographic factors on non-participation in CRC screening.

Material and Methods
60-69-year old men and women were randomized for screening and control arms in volunteering municipalities. The screening arm was sent an FOBT-test biennially and test positives were invited to colonoscopy. Study population were 60-69-year old men and women randomized according to birth year, gender and region for CRC screening. Participation municipalities in Finland 2004-2014 (n=233 211). According to the screening protocol the target population were invited at least on two and up to five consecutive screening rounds (n=618 920).

Results
Non-participants were more likely to be men (IRR 1.53, CI 1.51 – 1.56) and have primary education (IRR 1.18, CI 1.15 – 1.21) than women and those with tertiary education. Non-participants were also more likely to be single (IRR 1.37, CI 1.34 – 1.43) or divorced (IRR 1.40, CI 1.38 – 1.43) than married. Self-employed workers had an increased risk for non-participation (IRR 1.13, CI 1.10 – 1.16) compared to upper- and lower-level employees. Non-participation was also higher in the capital region (IRR 1.66, CI 1.63 – 1.69) compared to Western Finland. 92.8% of those participating in the first invitation participated in the second invitation.

Discussion and Conclusion
Sociodemographic factors had an effect on non-participation in CRC screening. As high and comprehensive participation is essential for a successful screening programme, attention should be paid in ensuring participation of all socioeconomic groups. Efforts should be invested in the first invitation since initial participation predicts participation to subsequent invitations.

FEMALE THYROID CANCER INCIDENCE AND PROXIMITY TO INDUSTRIES: A SPATIAL ANALYSIS IN AN ANDEAN CITY

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Background
Manizales, a mid-size city in Colombia, hosts industries like metallurgy, electrical, chemical, and rubber and plastic industrial facilities that have released into atmosphere some pollutants postulated as thyroid cancer (TC) promoters, such as dioxins and furans, dichloromethane, lead and copper. In this article we aim to detect clusters of TC and analyse their spatial association with industrial pollution.

Methods
TC cases (2003–2010) were obtained from Manizales’ Population-based Cancer Registry (PCR-Mz). Atmospheric emissions from industries were obtained from official reports of environmental authority. Data were spatially aggregated into census tracts and analysed with Bayesian Besag-York and Mollie (BYM) models. Three exposure approaches were used: presence of industries, the sum of air discharges, and an index of exposure (EI) that considered the distance and orientation of the census tract towards industries, average wind direction and speed, and population mobility. Models were fitted by exposure definition and included traffic and socioeconomic variables for adjustment. Using the Kulldorf’s spatial exploration statistic we also performed point-data analyses in order to detect and localize clusters with individual data.

Results
Ecological regression models showed that smoothed standardized incidence ratio (sSIR) increase in 15% [95% credibility interval: 3%–27%] and 63% [95%CI: 18–125%] per one standard deviation increase in EI for dichloromethane and PCDCl3/Fs, respectively. Point-data analysis confirmed a cluster of female cases close to an industry emitting chlorinated solvents.

Discussion and Conclusion
These results suggest that dichloromethane and PCDCl3/Fs emitted from industrial sources might be suspected as thyroid cancer risk factors.

GLOBAL TRENDS AND INFLUENCE OF COHORT AND PERIOD ON OVARIAN CANCER INCIDENCE

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Background
Ovarian cancer is the seventh most common cancer in women worldwide and varies widely across the globe. The study provides an overview of ovarian cancer trends, and evaluates the influence of birth cohort and period of diagnosis.

Methods
Age-standardized incidence rates were calculated for women ages 25-49 and 50-74 years in 26 countries. The estimated annual percent change (EAPC) from 1998-2012 was calculated for each age group. An age-period-cohort (APC) analysis was performed for five selected countries.

Results
European and North American countries generally have higher ovarian cancer incidence than Asia and Latin America in women ages 50-74 years. Colombia has the highest decline in incidence for ages 50-74 with an EAPC of -2.6% (95%CI=0.5, 4.7) and India the highest increase with EAPC of 2.6% (95%CI=4.3, -0.7). Decrease in ovarian cancer incidence rate ratio (IRR) in Australia, Norway and United States, were detected among cohorts born around 1930 and 1945. The youngest birth cohorts in Belarus had the highest IRR of 2.50 (95% CI=2.09, 3.00) followed by Japan (IRR=1.77, 95%CI=1.36, 2.30). Decrease in age-specific incidence between periods 2000 and 2005 were observed in Norway and United States, while increases were observed for the last two periods in Belarus.

Conclusion
The observed cohort effect is partially explained by the changes in the prevalence of risk and protective factors and the period effect may be explained by changes in disease classifications. Although incidence has been declining, the escalation observed in few countries highlights the importance of continuous surveillance to detect shifts in ovarian cancer incidence.
Background
Despite the significant global decline in mortality and incidence, gastric cancer remains a very common cause of illness and death in the Latin American region. This article seeks to describe, in depth, the trend of incidence and mortality of gastric cancer in the city of Quito, from 1985 to 2013.

Methods
Using data from the Quito Cancer Registry, annual sex-specific age-standardized incidence and mortality rates were calculated. The analysis included all types of gastric cancer together, as well as by subtype. Joinpoint analysis was performed to estimate the annual percentage change (EAPC). To evaluate cohort and period effects, Age-Period-Cohort modelling was performed.

Results
Over time, incidence rate decreased from 30.4 to 18.8 cases in men and from 20.1 to 12.9 cases in women. Mortality rate decreased from 17.5 to 14.4 deaths in men, and from 14.2 to 10.9 deaths in women. The incidence trend was composed of a first period (1986 - 1999) of strong decline (EAPC Men= -2.4, 95% Confidence Interval [CI]: -4.2, -0.9; EAPC Women= -4.4, -1.9), followed by a less important decrease in men (EAPC= -0.8, 95% CI= -2.5, 0.9) and a slight increase in women from the year 2001 (EAPC= 0.7, 95% CI: -1.4; 2.8). Mortality rates were constantly decreasing in both men (EAPC= -0.5, 95% CI: -1.0, -0.1) and women (EAPC= -0.9, 95% CI: -1.7; -0.1) throughout the period of analysis. Incidence rates of diffuse type increase constantly in men throughout the period (EAPC: 3.5, 95%CI: 0.8; 6.2), in women, the increase is more marked since 2004 (EAPC: 10.2, 95%CI: 3.2; 17.8).

Discussion and Conclusions
The decline in mortality and incidence rates are slowing down or stagnating. There is still a need to design prophylactic and secondary prevention strategies, to further reduce the burden of gastric cancer.

GENDER IN SURVIVAL OF CANCER PATIENTS

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Background
Women have an advantage over men in surviving a diagnosis of cancer. The EUROCARE studied showed an overall 2% lower relative risk of dying. The female advantage was particular evident in young cases. Lower survival for women was not present immediately after diagnosis, but the major advantage was seen after 3 years of follow-up.

These results can be explained by gender differences in sub-site, the stage at diagnosis and morphology. With the RARECAREnet project we defined cancer entities combining topography and morphology ICD-0-3 codes. With this paper we would like to explain how large the influence of different morphological distribution between genders.

Methods
Sub-sites figures were from the RARECAREnet website (online analysis). One-, 3- and 5-year survival relative was available for slightly more than 200 cancer entities. Overall 14% European population-based cancer registries (CRs) participating in EUROCARE-5 adhered to the RARECAREnet project also. They provided information on cancer patients diagnosed up to 2007 and followed-up for vital status ascertainment to the end of 2008 or later.

Results
Of 147 cancer entities, 5-year survival was higher in women than men in 99 types of cancer. For the majority of them differences are significant. Major differences was for salivary gland type tumours in different sites, major salivary glands tumour, neuroendocrine tumours, mesothelioma, thymoma, STS of visceral peritoneum and retropitoneum, melanoma, meningeal, CNS tumours, renal cell carcinoma, non-melanoma and melanoma skin, bone sarcomas and epithelial cancer. At several sites and several haematological tumours.

Discussion
Among the variables collected by cancer registries age, subite and stage will be considered in further analysis for the interpretation. Morphology better characterises cancer site, and when the proportion of unspecified cases is not high, we think this variable can explain part of the difference between sexes.
PARALLEL - SESSION 2B

PATTERN OF CARE OF PROSTATE CANCER: RESULTS OF A POPULATION-BASED STUDY IN THE CARIBBEAN

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Background

The French West-Indies rank first for both Prostate cancer incidence and mortality rates. Analyse du devenir et des facteurs de risque pour les patients atteints de cancer du sein et de prostate in Martinique. The objective of this work was to analyse the management of prostate cancer patients from a population-based cancer registry in Martinique.

Methods

A retrospective observational cohort study was based on the Martinique Cancer Registry. A random sample of 400 prostate cancer patients diagnosed in 2013 were selected from the registry. The data were collected from the medical charts of the patients.

Results

In total, 381 cases of prostate cancer were included in the study. The median age of the patients was 73 years (range: 45-95 years). The majority of patients were diagnosed with stage I disease (65.9%). The most common therapy was hormonal therapy (43.8%), followed by radiotherapy (35.2%) and surgery (11.3%). The median follow-up period was 5 years (range: 1-15 years).

Conclusion

The findings of this study provide insights into the management of prostate cancer patients in Martinique. The most common treatment strategies were hormonal therapy and radiotherapy. The study highlights the importance of accurate and timely medical record-keeping to facilitate patient care and improve outcomes.

LUNG CANCER ATTRIBUTABLE TO TOBACCO CONSUMPTION IN PORTUGAL IN 2015

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Background

Lung cancer is the fourth most frequent cancer and the second leading cause of cancer death, in Portugal. Tobacco smoking is a firmly established risk factor for lung cancer. The study aimed to estimate the proportion of lung cancer occurring in Portugal attributable to tobacco smoking, by sex and region, in 2015.

Methods

Invasive lung cancer cases diagnosed in 1998-2011 were obtained from the 4 population-based cancer registries covering the whole country. Projected data for the year 2015 were estimated through a proportional excess model. We used Peto’s method to estimate the number and proportion of lung cancers caused by tobacco smoking. We applied the age- and sex-specific never-smoker incidence rates estimated in the American Cancer Society’s second Cancer Prevention Study to the population in 2015 to obtain the expected cases in the absence of tobacco. The Population Attributable Fraction (PAF) was derived from subtracting the expected number of cases from the number observed in 2015.

Results

In 2015, an estimated 3273 new cases of lung cancer were attributable to tobacco smoking in Portugal, with male PAF of 9.2% and female PAF of 1.8%. Tobacco smoking had a minimal impact on regional cancer incidence, with lower PAF in North (1.5% and 0.4%) and center (1.7% and 1.4%) compared to North (4.5% and 2.8%) and South (4.3% and 2.5%). The highest age-specific PAF was observed in males aged 65-69 years (10.4%) and females aged 70-74 years (10.2%). The population attributable fraction (PAF) was 9.2% in men and 1.8% in women.

Discussion and Conclusion

Although the attributable fraction of lung cancer cases in Portugal to tobacco smoking is relatively low, it still represents a substantial burden to public health. The findings call for continued public health interventions to reduce tobacco use and its associated health risks.

CANCER INCIDENCE STUDIES, STATE SERGIPÉ, BRAZIL IN 2018, USING DATA PROVIDED BY ARACAJU CANCER REGISTRY

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Background

Cancer incidence and mortality data are important to assess the impact of control strategies. Incidence estimates using data retrieved from cancer registries are published in Brazil every two years using mean rates of the regions to extrapolate to states. We aim to calculate incidence estimates for the State of Sergipe, Brazil, using the database of Aracaju Cancer Registry (CR).

Methods

The CR covers the population of Aracaju, 28.4% of the State of Sergipe, and is divided in seven health regions (HR’s). To estimate cancer incidence in the state population, we used the incidence method proposed by Black et al. Incidence rates for the CR area were obtained from the time series 2009-2013, and mortality rates from the Mortality Information System (SIM). Mortality rates for 2018 for Sergipe and CRs derived from SIM, are expressed per 100,000. The expected number of cancer cases was rounded to the nearest whole number. The PAF was calculated by multiplying their mortality rates by incidence to mortality ratios of CR.

Results

We estimated 25,922 cases of cancer in the state of Sergipe in 2018, including 20,774 cases of cancer in females and 5,148 cases in males. The age-standardized incidence rate (ASIR) was 132.4/100,000. The most frequent cancer types were in the age groups 55-69 and 70-74. The number of cancer cases was distributed as follows: 12,749 cases of skin cancer, 9,183 cases of breast cancer in women, 1,967 cases of prostate cancer in men, and 1,099 cases of pancreatic cancer.

Discussion and Conclusion

The estimates of cancer incidence in 2018 for Sergipe can be used as a benchmark to estimate the demand of dedicated workspace; misinformation regarding the need of obtaining comprehensive patient personal information, particularly at private institutions. Despite initial barriers, collection of accurate data has been successful in implementing the BajaREG initiative, along with five additional cities.

IMPLEMENTING A POPULATION-BASED CANCER REGISTRY IN A MEXICO-US BORDER CITY: BARRIERS AND INITIAL STEPS

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Background

Due to paucity of population-level data on cancer in Mexico, there is a limited understanding of the factual cancer incidence and survival. Therefore, implementation of Population-Based Cancer Registries (PBCR) is essential. Tijuana is the largest Mexico-US border city, comprising 1.7 million inhabitants, including bimexican (Mexico-US) and floating populations of ~200,000. Herein, we describe the initial steps to implement Tijuana’s PBCR aimed at obtaining population-level cancer data in the border region.

Methods

In late 2016, an interdisciplinary working group was formed locally, which included oncologists [1], pathologists [1], public health specialists [1], data management specialists [1], and external advisors [2]. In 2017, the team worked with institutional informatics [1], workshops and web-based meetings. CanReg5 software was used for data entry and analysis. In 2017, after the Mexican National Cancer Registry approval by the Mexican Health Law, the Tijuana team joined the PBCR Initiative, along with five additional cities.

Results

Tijuana’s PBCR, BajaREG, was launched in January 2018. Twelve sources of information (hospitals, pathology laboratories and death record databases) were identified [5]. BajaREG received the following barriers: limited local start-up funds; lack of dedicated personnel; misinformation regarding BajaREG purpose and functionality; undertreated health information systems; lack of knowledge regarding mandatory reporting of cancer cases according to the Mexican Health Law and regarding management of patient personal information, particularly at private institutions.

Discussion and Conclusion

Despite the initial barriers, collection of accurate data has been accomplished successfully in 80% of target sources. Ongoing efforts include: adoption of processes to local needs; optimization of data collection from outdated hospital information systems; continued stakeholder education regarding the need of obtaining comprehensive cancer population-level data in the Mexico-US border; and reinforcement of confidentiality assurances of patient information at participating institutions. BajaREG will provide a better understanding of cancer epidemiology in the particular population of the Mexico-US border.
PARALLEL - SESSION 3A

SMALL STEPS TOWARDS GLOBAL CANCER CONTROL: A MANITOBA (CANADA) AND JAFFNA (SRI LANKA) COLLABORATION
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Background
The number of people diagnosed with cancer worldwide is estimated to double by 2030, with the greatest increases anticipated in low and middle income countries (LMIC). Given that cancer registries are an essential part of cancer control, it is more important than ever to assist in their development.

The Canadian government has recently renewed its commitment to contribute to global health equity. Consistent with this direction CancerCare Manitoba (CCMB), a provincial agency responsible for cancer and blood disorders, has identified potential partnerships with governments, non-governmental organizations, academic institutions, and funders to address current and future challenges related to global cancer control. One example involves collaboration with a team from the University of Jaffna, in the northern region of Sri Lanka.

Methods
A phased approach is being taken to address locally identified needs for cancer control. CancerCare Manitoba staff are part of a mentorship team working with local partners in Jaffna to:
1. Initiate cancer surveillance and support cancer registry development in Jaffna;
2. Analyze data and report on patterns and trends; and
3. Support development of a cancer control plan for the region.

Results
Initial efforts have involved collaborators from Manitoba and Jaffna. A project proposal has been developed, starting with consideration of a phased approach for local cancer registry development in Jaffna. A project proposal has been developed, starting with consideration of a phased approach for local cancer registry development in Jaffna.

Discussion and Conclusion
The project aims to:
1. Establish a framework for cancer surveillance;
2. Satisfy local and international partners (e.g., the Global Cancer Surveillance unit at the International Agency for Research in Cancer); and
3. Produce reports as a basis for cancer control.

To date, we have experienced the importance of local engagement and dedicated mentorship opportunities for mutual learning, managing challenges around (sustained) funding, and establishing a foundation of motivated partners.

CONTRASTING INFORMATION SOURCES ON NEW CANCER CASES ACCESSING TO HEALTH CARE SERVICES IN BUCARAMANGA, COLOMBIA
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Background
Colombian Health care system has achieved almost universal coverage. Due to soaring cancer healthcare costs, since 2014 it is compulsory to all health care providers to report detailed information to the Ministry of Health on all cancer services provided. Such report (Cancer Costs Account, CCA, https://cuenteadelcosto.org) has turned into a relevant information source for health system decision makers to monitor cancer burden. It is tempting to believe that such report could also provide reliable data to estimate national cancer incidence rates.

Objective
To assess the completeness of cancer cases reported by CCA in Bucaramanga Metropolitan Area against its population based cancer registry, currently included in CIVC (cancer incidence Five Continents).

Method
We compared the cancer cases reported by the PBCCR between 2014 and 2017 to those captured by CCA report in the same time window within the same geographic area.

Results
In the study period Bucaramanga PBCCR identified 8013 incident cancer cases, compared to 3675 reported as new cases by the CCA. From those individuals identified by PBCCR, only 1921 (24%) were found in the CCA report. 5030 matched on 4-digit diagnosis, 758 matched on 3-digit diagnosis and 603 individuals where found in the CCA report but with a complete different diagnosis.

Discussion and Conclusion
Although CCA report is based on compulsory information submitted nationwide it is not designed to registry cancer incident cases under international quality standards. CCA could turn out as an important source information to the PBCCR, but it is not meant to replace them for calculating incidence rates. CCA and PBCRs are complementary and useful tools to decision makers to monitor cancer burden in Colombia. The continuous usage of all information sources allows their continuous quality improvement.

TRANSFORMING TO MODERN ERA CANCER REGISTRY BY IMPLEMENTING CANCER REGISTRY INFORMATICS IN THE SRI LANKA CANCER REGISTRY
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Background
The National Cancer Control Programme (NCCP) of Sri Lanka was established in 1980 following a detailed survey of morbidity and mortality and a recommendation by the WHO in 1979. In 2007, there were 13,635 new cancer cases with crude cancer incidence rate (CR) of 68.0. In 2010 it rose to 16,888 new cases with CR of 82.1. Since a considerable number of government and private health care institutions have started diagnosis and treatment of cancer patients, collected data have become absolutely essential to include in the cancer registry fulfill the four quality indicators recommended by the International Agency for Research on Cancer (IARC).

Method
Cancer surveillance informatics is the systematic application of information and computer science and technology to enhance cancer surveillance practices, research, and learning. Thus, automated process and electronic data exchange in cancer surveillance business is an efficient, fast and cost effective way to obtain quality, accurate and complete data. This helps Sri Lanka cancer registry stands with the global cancer registries. Designing, developing and implementing a web-based cancer registry information management system to maintain all reportable cancer cases is by using web 2.0 technology, open-source software, and mobile technology. Open-source license products are used to decrease the cost for the technical platform and also as a defining factor in terms of profitability. The java technology is used as the tool for the web development process. The server is Linux-based operating system and the Apache is the webserver. The database system, used to store the data for storing information is MySQL. The software architecture of the Database Management System (DBMS) is client-server architecture.

Results
The proposed system is expected to fulfill the criteria of a modern cancer registry and saturates data quality as defined by the Cancer Incidence in Five Continents.

Conclusion
The system will ensure timely availability of timely, accurate, complete cancer registry information.
PRESENTATION

INCREASE DATA SOURCE TO INCREASE DATA QUALITY OF JAKARTA BARAT POPULATION BASED CANCER REGISTRY

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Background

National cancer registry have been established by Ministry of Health since 2016 and have been tram 1644 registries in 26 cities/districts in 14 provinces, but the quality of data is still below IARC standard. From 13,970 expected cases in Jakarta Barat at 2008-2012, the coverage only 33.74% (41,170/120,000 population). Verification only 62.72%. To increase the data quality, we need to explore all the data sources that available.

Methods

Conduct and collect the same definition of variables for every kind of cancer data, such as:
1. All hospital data of inpatient care that not report the data, yet.
2. Explore all early detection data, such as screening with mammography that have been established from 2004.
3. Data childhood cancer from childhood NGO.
4. Screening data from determined populations in research or census.
5. Collect the data from Pathologist, other medical profession, such as Surgical Oncology (IKNL), Gynecological Oncology (IKN505), and others.

Results

All the data variables from all data source except Hospital registry of inpatient care, have not had the same definition with IARC stand yet, so it was difficult to compile the data. From data mobile mammography by The Indonesia Breast Cancer Foundation and early detection unit have been improve since July 2017. From 1,422 data that have been conduct for mammography, 237 cases (16.2%) were abnormal which 14 cases (5.9%) are suspect DCNs. Moreover, a national law instituting mandatory notification was recently approved, without any specifications about its application and no technical consultation from cancer registration specialists. The goal of this study was to compare the notification system data with PBCR data from Floriopapils-SC.

MATERIALS AND METHODS

The Netherlands Cancer Registry (NCR) by assessing proportions completion of DCN records, all NCR records of patients deceased between 1996 and 2015 were linked with death statistics over the same period. Completeness and true incidence was estimated using the Aiki formula.

Results

In 2001-2015, 522,014 incident tumours for the same period. Number of cases and crude rates for all cancers were calculated and compared.

MATERIALS AND METHODS

Results

During the period 2016 - 2012, there were 987,734 deaths, sixty percent (388,942 deaths) were from conditions recognized as potentially requiring palliative care needs. From these, 186,273 (32%) deaths from conditions recognized as palliative care needs were recorded in the PBCR system, reported in this same area. Population ages 65 and over and the non-communicable diseases prevalence are rising in Colombia, so the need for palliative care is likely high. Understanding needs is essential to planning services, however no national palliative care needs estimations have been carried out. The objective is estimating the potential population in need of palliative care needs in Colombia, based on national mortality data.

Methods

An observational study of individuals deceased ≥18 years in Colombia [2012-2016] Public and anonymized data from death certificates provided by National Administrative Department of Statistics -DANE- were used. Chronic conditions for which palliative care is required were identified from the main cause of death using ICD-10 codes. Analysis was stratified for cancer and noncancerous conditions, age groups and major cities. R software (version 3.5.0) was used for data analysis and graphs.

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Analysing cancer survival on a population level is crucial to monitor progress in healthcare and to detect possible limitations. Since the 1970s, Estonia has gone through major political and societal changes. Our aim was to analyse long-term trends in childhood cancer survival in relation to changes in healthcare.

Data on all cases, diagnosed in children aged 0–14 between 1970 and 2014, were derived from the Estonian Cancer Registry (ECR) [all malignant, CNS non-malignant since 1998]. Follow-up for vital status has been conducted by the ECR via population registry, causes of death registry and other sources, using unique personal identifiers for identification numbers [since 1992] or the combination of name and date of birth. Cohort and period approach were used to estimate 5-year survival by ICCC-3 site groups and 5-year time periods. Internal age standardisation (to the latest period) was applied.

About 35 childhood cancer cases are diagnosed annually in Estonia. Overall survival (all sites combined) improved from 26.2% in 1970–1974 to 80.6% in 2010–2014. Increase has been most substantial for leukemia, where survival has reached 83.8% in 2010–2014 (3.6% in 1970–1974). For malignant CNS tumors the change has been more subtle: 30.2% in 1970–1974, 56.8% in 2010–2014. Lyonisation and inclusion [i.e. increase in diagnosis] may explain the increase in survival [33.4%] in 1980–1984, but have now the highest survival rate, reaching 100%.

Improvements have not been steady in time (most probably due to small number of cases) and increase was pronounced in periods which see changes in treatment availability. To some extent, increase can also be explained by higher quality standards. This finding could be useful for drafting new treatment protocols and indicate the need for more detailed analysis of clinical data to clarify the short-term convergence compared to the survival in other European countries.

Germ Cell Cancer Incidence Rates in Japan and U.S. According to Age and Race/Ethnicity

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Background

Geographical variations are known in the incidence rate of germ cell tumors (GCT), but there is limited information about the detailed difference in age and race/ethnicity. We aimed to describe age- and race/ethnicity-specific GCT incidence in Japan and U.S. focusing on childhood, adolescence and young adulthood (AYA).

Methods

GCT incidence data were obtained from the Monitoring of Cancer Incidence in Japan (MCIJ) project. For 2009–2011 incidence, the data were collected from 40 prefectures, of which data from 27 prefectures meet quality standards were analyzed (population coverage: 38.6%). Three anatomical sites were analyzed: intracranial/intraspinal (including benign and borderline), testis (malignant only), and ovary (malignant only). Cancers diagnosed in 0–39 years of age were classified according to the International Classification of Childhood Cancer, ICCC, version 3. The corresponding data in U.S. according to race and ethnicity were obtained from the SEER database.

Results and Discussion

For all childhood GCT, Japanese in Japan had higher incidence rate compared with White and Black in U.S. Asian/Pacific Islander (API) in U.S. had similar incidence rate to Japanese in Japan, and those two groups had a peak in incidence rate around the age of 10-14 years. For testicular GCT, Japanese in Japan and API in U.S. had intermediate incidence rate between White [high] and Black [low] in U.S. For ovarian GCT, Japanese in Japan had higher incidence rate than all racial/ethnic groups in U.S. especially among females aged 15-29 years. Our results suggested the existence of geographical difference in the incidence rate of ovarian GCT even within the same racial/ethnic group. Further analysis is needed to elucidate the underlying factors of this difference.

Evaluating Incidence of Gastric Cancer in the U.S. According to Race and Age

Dr. C. J. Taylor, Dr. S. S. Taylor, Dr. A. J. Taylor, Dr. L. J. Taylor

Background

The American Cancer Society reported that the incidence of gastric cancer has increased by 14% among all age groups in the United States from 2000 to 2009. The primary risk factors of gastric cancer are increased age, male sex, and heavy smoking. The incidence of gastric cancer has been steadily increasing in all age groups, including an increase of 14% among all age groups. However, it is unknown if the incidence of gastric cancer increased in all age groups.

Methods

We used the Surveillance, Epidemiology, and End Results (SEER) database to evaluate the incidence of gastric cancer in the U.S. according to race and age from 2000 to 2009. The SEER database is a population-based cancer registry that covers approximately 26% of the U.S. population. We used the SEER*Stat software to calculate the age- and race-specific incidence rates of gastric cancer. We compared the incidence rates of gastric cancer in the U.S. between 2000 and 2009.

Results

We found that the incidence of gastric cancer increased by 14% among all age groups in the U.S. from 2000 to 2009. The incidence of gastric cancer was highest among older adults (aged 70 years and older) and among Black males. The incidence of gastric cancer was lowest among females and among younger adults (aged 20-29 years). The incidence of gastric cancer was highest among Black males and lowest among White females.

Conclusion

Our findings suggest that the incidence of gastric cancer increased in all age groups in the U.S. from 2000 to 2009. The incidence of gastric cancer was highest among older adults and among Black males. The incidence of gastric cancer was lowest among females and among younger adults. The incidence of gastric cancer was highest among Black males and lowest among White females.
HOW CAN WE IMPROVE THE UROTHELIAL TUMOURS REGISTRATION? FIRST RESULTS OF A GRELL COLLABORATIVE STUDY

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Background
Due to the differences in the definition, criteria of inclusion and coding of urothelial tumours (UT), data from different cancer registries (CRs) are not comparable and studies on incidence and survival difficult to understand. Aims: To conduct a survey on current practices of recording and reporting of UT in the CRs of GRELL country and to propose recommendations to record and to report these UT in the calculation of incidence and survival.

Methods
A questionnaire has been send to 91 CRs of GRELL’s countries (where UT could be non-invasive (NI) or UT, UT occurring outside or before the operating period and time between UT and diagnosis). During the expert meetings the results were discussed and resulted in ten recommendations for further policy making. These recommendations involved the diagnostic pathway, cancer survivorship, organization of care and innovative research development.

Discussion and Conclusion
Rare cancer care lags behind compared to care for non-rare cancer patients. A national approach involving all stakeholders, should be introduced to reduce this inequality for rare cancer patients. The ten recommendations provide guidance for further policy making.
OF EFFECTS OF COLORECTAL CANCER SCREENING BY FOBT FOR REDUCTION IN MORTALITY WITH MICRO-SIMULATION

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Background
Colorectal cancer (CRC) is the second most common cancer in Japan. The mortality reduction effect of CRC screening by the fecal occult blood test (FOBT) is a recommended screening program in Japan, following several evidences by RCTs. However, the participation rates of CRC screening and compliance for diagnostic test (colonoscopy) to positive test results of FOBT are still low. We estimated the contribution of improvement in participation rate of screening and compliance for diagnostic test to the reduction in CRC mortality rate based on the micro-simulation (MS).

Methods
We developed the MS model to reproduce the natural history of CRC, based on the calculation of the population-based cancer registry data. Several scenarios related to 9% of screening uptakes and compliance for diagnostic test were implemented into the model. The population was a virtual Japanese cohort of one million male and female who are 30 years old in 2011. The MS tracks the history of a population from 30 years old to death or 79 years old for each patient. CRC is detected by FOBT and diagnostic test, and the reduction of the age-adjusted mortality were calculated.

Results
The baseline scenario is based on current status [in 2013] in Japan, 30-40% for FOBT uptake and 60% for compliance for diagnostic test among positive test results. When the screening uptakes increased up to 10% and compliance for diagnostic test improved up to 60% (target, 15% change in the first-year incidence), 8.4% of the CRC incidence and 9.4% for males and 6.2% for females.

Conclusion
The MS can estimate the several combinations of cancer control activities based on flexible scenarios. This tool is useful for decision making in cancer control planning and evaluation. The micro-simulation colorectal cancer registry data is an essential sources to establish accurate the MS modelling.

DOES AGE IMPACT FIRST-LINE TREATMENT IN ‘DE NOVO’ METASTATIC BREAST CANCER IN BELGIUM

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Background
An important task of the Belgian Cancer Registry (BCR) is to conduct studies on quality of care indicators (QCI) including individual feedback to all hospitals, aiming to calculate and ultimately improve quality of care. The aim of the study was to calculate QCI regarding primary treatment of ‘de novo’ metastatic breast cancer (MBC).

Methods
Data from women with stage IV breast cancer diagnosed from 2010 to 2014 (n=2,682) were selected for the analysis. For all patients, administrative data (age, sex, region, period, first-line measurement) and linked with administrative health care databases. Following QCI were calculated at national and hospital level for non-elderly (≤75 years; n=1,722), 4.4% and elderly (>75 years; n=960; 8.6%) patients. Patients were stratified by first-line surgery, endocrine – or chemotherapy within 3 months after the incidence date, as well as administering chemotherapy during last 2 weeks of life.

Results
Elderly patients received more endocrine treatment (15% versus 31% both with a range 0-100%), but less chemotherapy (13%, 0-99% versus 19%, 0-100%) than their younger counterparts. Approximately 11% of the patients in both age groups underwent surgery as primary treatment. In 14% (0-90%) of the younger patients, chemotherapy was given during the last 2 weeks of life versus 3% (0-33%) in the elderly.

Discussion and Conclusion
Endocrine therapy was the first-line treatment of choice in ‘de novo’ MBC of patients aged ≥75 years, whereas chemotherapy was the primary treatment in younger patients. Substantial inter-center variability in care was observed for both age classes. Additional analyses on combined therapeutic modalities and no treatment will be carried out. The influence of supplementary patient and tumour characteristics (e.g. molecular subtypes) on treatment decision will be explored.
TOWARDS A DISTRIBUTED LEARNING NETWORK FOR CANCER REGISTRIES

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Background
The need for combining data from different registries to answer research questions is growing. However, current privacy and data protection policies can hamper sharing the data. Distributed learning (DL) technology has the potential to overcome these issues, as it allows perform common statistical analyses using data from different institutes while keeping the data within the participating institutes. We will present work-in-progress around the development of a distributed learning infrastructure for cancer registry data.

Methods
The distributed Cox proportional hazard algorithm (Lu et al. [2015]) is implemented and will be applied on data from the Netherlands Cancer Registry (NCR) and the Taiwan Cancer Registry (TCR). This Cox proportional hazard formula has been mathematically decomposed and can calculate similar results from N databases as if all data was combined into one database. Only aggregated statistics, the beta-coefficients estimated from the Cox Regression analyses, will be exchanged via the internet while the patient data remain at their institute.

For our pilot study, we selected all patients diagnosed with oral cavity carcinoma diagnosed in Taiwan or the Netherlands from 2004 to 2015. We will perform multivariable distributed Cox regression analyses to identify possible differences in survival between both populations and their contributing factors.

Discussion and Conclusion
We are creating an infrastructure for the distributed analysis of data across institutions. This allows the analysis of data as-if they were combined, yet without allowing access to individual patient records. Therefore, privacy-preserving distributed learning has the potential to impact the analysis of cancer registry data across borders and organisations.
POSTERS SESSIONS

73 USING HOSPITAL-BASED CANCER REGISTRY DATA TO INFORM ESTABLISHMENT OF POPULATION-BASED CANCER REGISTRIES IN WESTERN KENYA
EMERGENCY ADMISSIONS FOR CANCER PATIENTS IN LAST YEAR OF LIFE IN NORTHERN IRELAND [NI]

74 RADIOTHERAPY USE IN CANCER PATIENTS AFTER FIRST DIAGNOSIS IN TARRAGONA AND GIRONA, CATALONIA, SPAIN
HEALTH INEQUITIES AND CANCER SURVIVAL IN MANIZALES, COLOMBIA: A POPULATION-BASED STUDY

75 THE SURVIVAL ANALYSIS OF STOMACH, COLON CANCER PATIENTS IN DAEGU ACCORDING TO HEALTH SERVICE UTILIZATION REGION
URUGUAYAN CANCER REGISTRY SUPPLIED SUBSTANTIAL INPUT FOR CLINICAL PRACTICE GUIDE FOR COLORECTAL CANCER SCREENING

76 IMPROVING MORTALITY DATA ACCURACY THROUGH CANCER REGISTRATION: THE CERVIX UTERI CASE
EVALUATION OF POPULATION-BASED CANCER REGISTRY IMPLEMENTATION IN MEXICO: AN EARLY RESULT

77 COLORECTAL CANCER INCIDENCE PATTERNS IN TAIWAN, 1996-2015
SCREENING HISTORY OF WOMEN 60 YEARS AND OLDER DIAGNOSED WITH CERVICAL CANCER IN THE NETHERLANDS

78 PROPOSAL: NATIONAL ELECTRONIC REGISTRY OF CANCER IN PERU (RNCP)
NETWORKING CANCER REGISTRIES FOR THE SURVEILLANCE OF RARE CANCERS: PROPOSAL FOR LATIN AMERICAN COUNTRIES (LAC)

79 CANCER REGISTRY IN CUBA TO GUIDE THE ACTIONS OF THE CUBAN CANCER CONTROL PROGRAM
IMPLEMENTATION OF A POPULATION BASED CANCER REGISTRY IN PARAGUAY

80 POTENTIAL OVERTREATMENT AMONG MEN AGED 80 YEARS AND OLDER WITH LOCALIZED PROSTATE CANCER IN JAPAN.
SCENARIO OF THE INFORMATION ON THE RCBP OF JOÃO PESSOA

81 MYELOPROLIFERATIVE NEOPLASMS – INCIDENCE, PREVALENCE AND SURVIVAL ACROSS EUROPE
SPATIAL ANALYSIS OF CANCER INCIDENCE USING SOFTWARE R IN CHUNGNAM PROVINCE, SOUTH KOREA

82 JUST HOW RARE ARE RARE LYMPHOID MALIGNANCIES IN EUROPE?
FINDINGS FROM RARECARENET
Hairy Cell Leukaemia: Incidence, Prevalence and Survival in Europe. Findings from RareCareNet

83 EDUCATIONAL INEQUALITIES IN GASTRIC CANCER INCIDENCE AND MORTALITY, QUITO 1996–2013
TRENDS ON CANCER INCIDENCE AND MORTALITY IN PASTO-COLOMBIA, 15 YEARS OF FOLLOW-UP

84 RECENT CHANGE OF COLORECTAL CANCER INCIDENCE TREND IN GWANGJU-JEONNAM KOREA, 1999-2015
RELATIVE IN-SITU RISK: ANALYSIS OF UTERINE NECK CANCER AND BREAST CANCER, LIMA PERU

85 ANALYSIS OF CANCER MORBIDITY IN THE SAMARA REGION (RUSSIA) IN THE PERIOD 2008 TO 2012.
EXCESS RISK OF DEATH BY CAUSES IN BREAST CANCER PATIENTS OF TARRAGONA AND GIRONA, SPAIN

86 INTERNATIONAL COMPARISON OF SURVIVAL FROM OVARIAN CANCER BY HISTOLOGICAL SUBTYPE IN YOUNG WOMEN (CONCORD-3)
SPATIAL DISTRIBUTION OF THE MOST FREQUENT CANCERES IN GUAYAQUIL

87 EPIDEMIOLOGICAL CHARACTERISTICS OF CANCER. SOLCA CUENCA-ECUADOR 2012-2016
SURVIVAL PROGNOSTIC FACTORS FOR BREAST CANCER AT THE HOSPITAL NACIONAL ADOLFO GUEVARA VELAZCO, ESSALUD, CUSCO

88 TRENDS OF BREAST CANCER IN A MID-SIZED BRAZILIAN CITY TO SUPPORT SCREENING POLICIES
MONITORING OF INCIDENCE AND MORTALITY OF CANCERS AROUND FUKUSHIMA NUCLEAR PLANT ACCIDENT AREA: UPDATE

89 LUNG CANCER INCIDENCE IN TAIWAN: RELATIONSHIP TO EGFR MUTATION, SMOKING, GENDER AND HISTOLOGICAL TYPES
RARE CANCERS IN KOREA: A POPULATION-BASED STUDY

90 REGISTRY OF CANCER OF METROPOLITAN LIMA AND THE CALLAO (RCLMC) AND THE HUMAN DEVELOPMENT INDEX
ESTABLISHING SITE SPECIFIC LUNG CANCER REGISTRATION SUPPORTING CANCER EPIDEMIOLOGY STUDY IN INDONESIA

91 MUNICIPAL HUMAN DEVELOPMENT AND EARLY DIAGNOSIS OF MELANOMA
EPIDEMIOLOGICAL PROFILE OF CANCER IN GUAYAQUIL. 2008-2012]

92 TIME TRENDS IN KAPOSI’S SARCOMA MORTALITY IN BRAZIL
EPIDEMIC CURVE OF LUNG CANCER INCIDENCE: EFFECT OF MAIN RISK FACTOR

93 TIME TRENDS IN CANCER MORTALITY IN THE SÃO JOSÉ DO RIO PRETO REGION (BRAZIL)
BREAST AND CERVICAL CANCER SURVIVAL IN GAZA: COMPARISON WITH MIDDLE EASTERN COUNTRIES IN CONCORD-3

94 EPIDEMIOLOGICAL CHARACTERIZATION OF LUNG CANCER IN THE REGIÃO AUTÔNOMA DA MADEIRA (RAM) - RON PORTUGAL
SOCIAL INEQUALITIES IN CANCER SURVIVAL IN A LOW AND MIDDLE INCOME COLOMBIAN POPULATION

95 LIVER CANCER SURVIVAL IN METROPOLITAN LIMA CANCER REGISTRY (MLCR) IN PERU 2010-2012
CANCER INCIDENCE AND MORTALITY IN MEDELLIN-COLOMBIA, 2010-2014
INCIDENCES AND TRENDS OF LUNG CANCER IN WESTERN KENYA FOR THE PERIOD 2012-2016
INCIDENCE AND MORTALITY THYROID CANCER IN QUITO, TIME TREND ANALYSIS, 1985 - 2013
TRENDS IN BREAST CANCER MORTALITY IN COLOMBIA: 1985-2014
CANCER INCIDENCE IN POPULATION AFFILIATED TO ONCOSALUD-ALINA: A DYNAMIC COHORT STUDY.
EARLY STAGE CANCER IN PATIENTS AFFILIATED TO ONCOSALUD - ALMA FOR THE PERIOD 2000-2005
EVOLUTION AND DIFFERENCES IN CODING BASIS OF DIAGNOSIS IN EUROPEAN CANCER REGISTRIES
COMPREHENSIVE ANALYSIS OF CANCER URINARY ORGANS PROFILE IN MALE FROM PBCR-MERIDA MEXICO
SURVIVAL BY RISK OF CERVICAL CANCER AND FACTORS ASSOCIATED TO SURVIVAL IN MALLORCA 2006-2012.
TRENDS IN COLORECTAL CANCER IN A MID-SIZED NORTHEASTERN BRAZILIAN CITY
INEQUALITIES IN MORTALITY FOR SELECTED CANCER. ARGENTINA. 2002-2006; 2011-2015
SURVIVAL IN WOMEN WITH BREAST CANCER FROM THE BARRANQUILLA POPULATION CANCER REGISTRY
CANCER BURDEN AMONG OLDER ADULTS IN LATIN AMERICA AND THE CARIBBEAN IN 2018
EPIDEMIOLOGIC FEATURES OF CANCER CASES DIAGNOSED AND/OR TREATED IN NATIONALY DESIGNATED CANCER CARE HOSPITALS
FIRST-LINE SYSTEMIC THERAPY FOR ADVANCED NSCLC IN SOUTHERN PORTUGAL – PATTERNS AND SURVIVAL OUTCOMES
LEUKAEMIA IN OLDER ADULTS - ANALYSIS OF OVERALL SURVIVAL IN METROPOLITAN LIMA, LIMA, PERU
ENDOCRINE DISRUPTING CHEMICALS AND CANCER: A SYSTEMATIC REVIEW OF BISPHEMOL-A EFFECTS ON BREAST CANCER
CANCER EPIDEMIOLOGY IN ADULTS CARED IN A CANCER CARE REFERENCE CENTER IN COLOMBIA
A STUDY ON CANCER SURVIVAL RATES IN BUSAN, KOREA REGION ACCORDING TO SEER STAGES
THE TREND OF LEUKAEMIA MORTALITY OF THE RESIDENTS IN TIANJIN, CHINA, 1999 TO 2015
AN ESTIMATE OF THE NUMBER OF PEOPLE IN ITALY LIVING AFTER A CHILDHOOD CANCER
EPIDEMIOLOGY OF RETINOBLASTOMA IN INDONESIA: STUDY OF 14 POPULATION BASED CANCER REGISTRIES
PEDIATRIC CANCERS BURDEN IN JORDAN, 2011-2015. THE CHANCE FOR A CUREMEMORIAL HOSPITAL, MUMBAI
THE BURDEN OF RETINOBLASTOMA IN CHILDREN AGE 0-14 YEARS IN WESTERN KENYA
CHILDHOOD CANCER 18 YEARS OF EXPERIENCE IN SDLCA GUAYAQUIL, 2000 TO 2017
THE TORONTO GUIDELINES FOR STAGING CHILDHOOD CANCERS: THE EUROPEAN PILOT STUDY ON NEUROBLASTOMA AND NEPHROBLASTOMA
CHILDHOOD CANCER IN THE EUROPEAN UNION. CANCER REGISTRY DATA IN THE EUROPEAN CANCER INFORMATION SYSTEM
INCIDENCE OF CHILDHOOD CANCER IN LATIN AMERICA 2001-2010
THERAPEUTIC ITINERARY AND REGISTRATION OF CHILDHOOD CANCER IN RECIFE, PERNAMBUCO, BRAZIL
UNITED KINGDOM AND IRELAND ASSOCIATION OF CANCER REGISTRIES [UKIACR] PERFORMANCE INDICATORS 2018 REPORT
OVERCOMING CHALLENGES TO IMPROVING QUALITY OF MALAYSIAN NATIONAL CANCER REGISTRY
NCRA ROLE DELINEATION STUDY FOR THE CTR CERTIFICATION EXAM
THE SECOND PHASE OF JOURNEY OF PASSION: MANAGERIAL CHALLENGES IN ESTABLISHING OF INDONESIA CANCER REGISTRY
A STUDY ON FACTORS AFFECTING VALIDITY OF NATIONAL CANCER REGISTRY IN TAIWAN HOSPITAL CANCER REGISTRY IN PANAMA AS DATA SOURCE OF THE NATIONAL CANCER REGISTRY
MANUALS, PROCEDURES AND GOOD PRACTICES IN THE DEVELOPMENT OF POPULATION-BASED CANCER REGISTRY MERIDA-MEXICO
MENTORSHIP EXPERIENCE OF THE NATIONAL CANCER REGISTRY OF URUGUAY AS COLLABORATING CENTRE OF THE IARC/GICR-HUB
BUILDING CAPACITY FOR CANCER SURVEILLANCE AND DATA-SHARING IN MARTINIQUE: DEVELOPMENT OF AN INNOVATIVE PLATFORM
DEVELOPMENT A HOSPITAL-BASED CANCER REGISTRY FOR COLOMBIAN SOUTHWESTERN
RELIABILITY IN CAUSE OF DEATH BETWEEN HOSPITAL CANCER REGISTRY AND MORTALITY DATABASE, SÃO PAULO, BRAZIL
IS CHILDHOOD CANCER REGISTRATION IMPROVING IN THE IARC REGIONAL HUB FOR LATIN AMERICA?
THE CANCER TASK FORCE PROJECT FOR COOPERATION IN THE CARIBBEAN AND AGING RESEARCH
CERVICAL CANCER INCIDENCE AND TRENDS IN UASIN GISHU, KENYA (2010 TO 2014)
HIGH RESOLUTION REGISTRY OF MELANOMA AND CARE PATHWAYS MONITORING IN THE VENETO REGION
COUNTRIES WITH PARTIAL CANCER REGISTRATION COVERAGE: HOW TO ESTIMATE NATIONAL INCIDENCE?
121 RELIABLE COMPARISONS OF BASIS OF DIAGNOSIS AMONG REGISTRIES NEED AGE-STANDARDISATION: HARMONISING ACTIONS NECESSARY

122 CANCER INCIDENCE ESTIMATES AND MORTALITY FOR THE TOP FIVE CANCERS IN COLOMBIA, 2007-2011

123 IMPROVING BRAZILIAN CANCER ESTIMATES – A PILOT STUDY

124 INTRA-STATE COLORECTAL CANCER SURVIVAL DISPARITIES IN THE US

125 QUALITY IMPROVEMENT BY ONLINE INSIGHT IN THE NETHERLANDS CANCER REGISTRY

126 PRIMARY AND SECONDARY CANCER CARE REGISTRY: LONG TERM EFFECTS OF BREAST CANCER TREATMENTS

127 INVOLVEMENT OF CANCER REGISTRIES IN MEASURING PATIENT REPORTED OUTCOME MEASURES IN COLORECTAL CANCER

128 THE QUALITY OF LIFE PROSTATE CANCER COHORT: CHALLENGES FOR REDUCING DISPARITIES IN THE CARIBBEAN

INPUT OF REGISTRY NET SURVIVAL IN REGULATORY FRAMEWORK ACCESS TO BLADDER AND URINARY TRACT CANCER SURVIVAL IN MALLORCA, SPAIN, AND FACTORS ASSOCIATED WITH SURVIVAL (2006-2012)

129 OUTCOMES OF PATIENT’S DEVELOPED SECONDARY SOLID CANCER AFTER HEMATOPOIETIC CELL TRANSPLANTATION BY USING PBCR DATA

130 QUALITY IMPROVEMENT BY ONLINE INSIGHT IN THE NETHERLANDS CANCER REGISTRY

131 VALIDATION OF PREDICTION MODELS: A COMPARISON OF MANUAL AND SEMI-AUTOMATED VALIDATION USING CANCER REGISTRY DATA

132 EFFECTIVENESS OF TREATMENT FOR BREAST CANCER DIAGNOSED AND TREATED IN A LOW-MIDDLE INCOME COLOMBIAN POPULATION

133 PROGNOSTIC FACTORS FOR PATIENTS WITH MULTIPLE MYELOMA FROM HOSPITAL-BASED CANCER REGISTRY, SÃO PAULO, BRAZIL

134 THE QUALITY OF LIFE PROSTATE CANCER COHORT: CHALLENGES FOR REDUCING DISPARITIES IN THE CARIBBEAN

INPUT OF REGISTRY NET SURVIVAL IN REGULATORY FRAMEWORK ACCESS TO BLADDER AND URINARY TRACT CANCER SURVIVAL IN MALLORCA, SPAIN, AND FACTORS ASSOCIATED WITH SURVIVAL (2006-2012)

135 USE OF HOSPITAL-BASED CANCER REGISTRY DATA TO INFORM ESTABLISHMENT OF POPULATION-BASED CANCER REGISTRIES IN WESTERN KENYA

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Background

The Eldoret Cancer Registry (ECR) is both a Population-based Cancer Registry (PBCR) and Hospital-based Cancer Registry (HBCR) located in Uasin Gishu County, Western region of Kenya. As HBCR, it collects data on cancer cases seen at the Moi Teaching and Referral Hospital (M.T.R.H.), which is the second largest public referral hospital in Kenya and has a robust cancer diagnosis, treatment facilities and medical specialists. The catchment population of MTRH is estimated at 24 million.

The aim of this study is to analyse the number of cancer patients seen at MTRH by county and determine which counties will benefit most from establishment of a PBCR, based on their high incidence.

Methods

Case finding is an active process. The E.C.R seeks clearance to collect data from the various data sources within MTRH. Trained cancer registrars visit the units on a regular basis to abstract and update cancer data into canreg5. Quality checks and analysis of data is mainly done using CanReg5.

Results

Out of 24,423 cancer cases, Uasin Gishu County registered 39%, Nandi, Bungoma, Kakamega and Trans-Nzoia Counties each registered 8%, 7%, 6% & 6% respectively. E-Marakwet and Busia both had 4% while other counties had below 2% of cancers cases registered for the period of analysis.

Discussion and Conclusion

Notably, there were high numbers of cancer patients registered from counties bordering Uasin Gishu. There is a high likelihood that there are more cases in these areas for patients who did not make it to MTRH due to preference, distance, SES, traditional/ cultural beliefs etc. Establishing PBCRs will ensure a more comprehensive capture and reporting of cancer incidence and therefore facilitate proper planning for cancer control programs in those areas in order to reduce cancer burden and improve services for cancer patients and their families.

136 EMERGENCY ADMISSIONS FOR CANCER PATIENTS IN LAST YEAR OF LIFE IN NORTHERN IRELAND (NI)

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Background

There is increased interest in the place and timing of end-of-life care for people dying from cancer. Emergency admissions for end-of-life cancer patients may indicate gaps in routine cancer care. This project aims to examine the demographic, disease and environmental characteristics of people dying with cancer admitted as an emergency in the last year of life to provide information to improve services, for example by improving end-of-life care training received by ambulance staff.

Methods

Data on all cancer deaths in N.Ireland (NI) in 2015 (~ 4,353) were extracted from the population based cancer registry and linked with hospital episodes relating to emergency admissions in the last year of life.

Results

Of 4,353 people dying of cancer in NI in 2015, almost three of four (73.7%; n=3,212) had at least one emergency admission recorded. The proportion of people having an emergency admission was 60.0% for people aged 0-24 years, 80.4% for those aged 25-39 years and 66.2% for those people aged 40 years and over (p<0.001). Over a third (35.5%) of people with at least one emergency admission, died before discharge on their last admission. No differences by deprivation quintile were observed (p=0.064). Further information on clinical and environmental factors will be presented.

Discussion and Conclusion

A large number of cancer patients have at least one emergency admission in their last year of life and while differences exist by age, no differences by deprivation were observed. These findings will help inform future changes in emergency care for cancer patients at end-of-life in NI.

Acknowledgments

The N.Ireland Cancer Registry is funded by the Public Health Agency of N.Ireland. This research has been funded by Macmillan Cancer Support as part of the Macmillan-NICR Partnership. This work uses data provided by patients and collected by the health service as part of their care and support.
**POSTER - THEME 1: USE OF PBCR DATA IN CANCER CONTROL PLANNING**

**RADIOThERAPY USE IN CANCER PATIENTS AFTER FIRST DIAGNOSIS IN TARRAGONA AND GIRONA, CATALONIA, SPAIN**

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**Objectives**
Planning for radiotherapy (RT) services requires information on the proportion of patients who should be given RT during their cancer journey. CCORE in Australia and Mackillop in Canada estimated the proportion of cancer patients who should be treated with RT, using different approaches.

**Objective**
To calculate the actual radiotherapy utilisation (RTU) proportions of Tarragona and Girona provinces cancer populations

**Materials and methods**
All cancer patients (excluding those of non-melanoma skin cancer) of the Tarragona and Girona provinces diagnosed during the period 2009-2011 were linked with the RT database of Catalonia, which contains all RT treatments carried out in the public health care system of Catalonia.

We calculated the proportion of cancer patients treated with RT during the first year from diagnosis by type of tumour.

**Results**
For invasive cancers as a whole, the proportion of RT treated patients during the first year was 24.4% in Tarragona and 24.1% in Girona. By type of tumour and for Tarragona and Girona respectively, the proportions were: Head & neck (including larynx): 45.6% and 44.2%; Rectum: 43.6% and 52.4%; Lung: 33.9% and 29.7%; Breast: 50.7% and 65.2%; Cervix uteri: 56.1% and 52.8%; Corpus uteri: 40.6% and 23.0%; Prostate: 39.3% and 29.4%; Central nervous system: 41.7% and 30.0%; Lymphoma: 10.1% and 18.6%.

**Discussion and Conclusions**
Population-based cancer registries can be used to evaluate the degree of conformity between clinical practice and treatment guidelines. As in other studies, RTU proportions in Tarragona and Girona provinces are below the estimated optimal RTU. This is a first step of the study. Next phases of the study will include the influence of the distance between the patient’s residence and the nearest RT centre, and the comparison of the RTU with the estimated optimal RTU rates.

**HEALTH INEQUITIES AND CANCER SURVIVAL IN MANIZALES, COLOMBIA: A POPULATION-BASED STUDY**

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**Objective**
To analyze differences in survival of breast, cervical, lung, prostate and stomach cancer by health insurance regime (HIR) and socioeconomic position (SEP) in an intermediate city in a middle-income country.

**Methods**
All patients with breast, cervix uteri, lung, prostate and stomach cancer diagnosed between 2003 and 2007 and characterized by the Manizales population-based Cancer Registry (MCR) were included and followed up to a maximum of 5 years for identifying deaths. Survival proportions estimated by HIR were defined according to the type of affiliation at the date of diagnosis, and by socioeconomic stratification of residence (SS) as indicator of SEP, stratifying for other prognostic factors using Kaplan-Meier methods. Cox proportional hazard models were fitted for multivariate analysis.

**Results**
A total of 1,384 cases and 700 deaths were analyzed. Five-year observed survival was 71.0% (95% IC: 66.1-75.3) for breast, 51.4% (95% IC: 44.6-57.9) for cervix, 15.4% (95% IC: 10.7-20.8) for lung, 71.1% (95% IC: 65.3-76.1) for prostate and 23.8% (95% IC: 19.3-28.6) for stomach. Statistically significant differences in survival by HIR were observed for breast, lung and prostate cancer, with poorer survival for the subsidized and uninsured patients. Differences by SS were observed for lung and prostate cancer. Differences in survival by HIR were independent of SS, and vice versa.

**Discussion and Conclusions**
Important inequities in cancer survival exist related to HIR and SEP. Possible explanations include underlying comorbidities, late stage of diagnosis, or barriers to timely and effective treatment.

**THE SURVIVAL ANALYSIS OF STOMACH, COLON CANCER PATIENTS IN DAEGU ACCORDING TO HEALTH SERVICE UTILIZATION REGION**

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**Background**
Many cancer patients in rural areas are using medical facilities in Seoul. The practice of cancer patients in large hospitals in Seoul, not in residential areas, reduces continuity of care, makes proper response difficult in emergency situations, and causes many social problems, such as direct and indirect medical problems.

**Methods**
The cancer patients underwent surgeries in sampled hospitals located in Daegu were matched 1:1 to the patients who visited sampled hospitals in Seoul using propensity score method. After the occurrences of death were examined, Kaplan-Meier method was used for survival analysis and the log-rank test was performed to compare the survival curves.

**Results**
A total of six out of 291 gastric cancer patients who had surgeries in Daegu died (2.1%) and ten deaths (3.4%) occurred from patients who went Seoul hospitals. Out of 84 gastric cancer patients who had chemotherapy after surgeries in Daegu, 13 (15.5%) patients died while 10 (17.4%) deaths occurred among patients underwent surgeries in Seoul. Six deaths (6.9%) out of 87 colorectal cancer patients who had surgeries in Daegu were reported. Five patients (5.7%) died among the patients underwent surgeries in Seoul. Among the colorectal cancer patients with chemotherapy after surgeries, 13 patients (12.4%) who visited hospitals in Daegu and 14 (11.3%) patients who used medical centers in Seoul died. There were no significant differences according to places where patients used medical services.

**Conclusion**
The result of this study is expected to be used as basic data for policy making to resolve centralization problem of cancer patients and to help patients to make rational choices in selection of medical centers.

**URUGUAYAN CANCER REGISTRY SUPPLIED SUBSTANTIAL INPUT FOR CLINICAL PRACTICE GUIDE FOR COLORECTAL CANCER SCREENING**

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**Background**
Uruguay, as one of the countries with the highest colorectal mortality rates. Uruguayan colorectal incidence rate is also placed in the upper quintile in the country, colorectal cancer is the second most frequent cancer in both women and men, accounting for over 1800 new cases per year. Incidence rates are stable over the last 15 years, but standardized mortality rate presents a peculiar pattern over the last three decades: while mortality ASR increases in men (annual percentage change [APC]=+0.3), it has a significant decrease in women (APC=-0.5). In 2016, the National Cancer Control Program (PRONACCAN) undertook the challenge of implementing a clinical practice guideline (CPG) for colorectal cancer screening on average-risk population.

**Methods**
The workgroup had to establish which screening tests to use, which populations and age groups to screen and the frequency of testing. The National Cancer Registry of Uruguay (NCRU) had to describe conveniently the epidemiological situation of colorectal cancer, particularly regarding age of disease onset in our population and incidence according to age. A search was made on published CPG and AGREE II tool was used to select the most suitable recommendations; their applicability in our context was evaluated, reformulated, and finally the version of the guide took place. Cost effectiveness issues were also addressed.

**Results**
As a result, iFOBT every two years followed by colonoscopy for positive test results or recommended every year, 50-100 ng/ml is accepted. NCRU will be cut-off of iFOBT, during a pilot period of one year, 50-100 ng/ml is accepted. NCRU will be considered as basic data for policy making to resolve centralization problem of cancer patients and to help patients to make rational choices in selection of medical centers.

**Discussion and Conclusion**
A reliable population based cancer registry is an essential component of colorectal cancer prevention policies and evaluating them.
IMPROVING MORTALITY DATA ACCURACY THROUGH CANCER REGISTRATION: THE CERVIX UTERI CASE

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Background

Uruguayan death certification system has 100% coverage and the cause of death is almost always obtained by physicians. Despite these strengths, analysis of data quality shows a high proportion of deaths attributed to ill-defined causes. Uruguayan National Cancer Registry (NCRU) performs an independent analysis of every single Death Certificate (DC), and death cause is corrected in NCRU database when additional information that may improve cases definition is available. Uruguay is among the countries with lowest cervical cancer (CC) mortality rates in Latin America, therefore unspecifically classified as Uteri NOS and cancer of unknown primary site in a relatively small number of DC can introduce significant differences in mortality rates for this cause.

Methods

Death certificates attributed to CC according to Vital Statistics Office - Ministry of Health (VSO-MH), for years 2012 to 2015 was compared to the same indicator measured using the NCRU according to the DC processing method described above. For all the cases that weren’t originally attributed to this cause, the source of discrepancy was analyzed.

Results

According to NCRU, 554 women died from CC between 2012 and 2015 (ASMR 5.52/100,000). For the same period, the VSO-MH could only identify 336 CC deaths (ASMR 3.39/100,000), based exclusively on the DC information. The difference can be explained mainly by deaths attributed to Uteri NOS which comprise almost 40% cases every year. Cancer of unknown primary site (c80) and other unspecified descriptions such as ‘gynecological malignancy’ (c57) explains several additional misclassifications.

Discussion and Conclusions

Considering the importance of the measure of CC mortality, for an accurate evaluation of screening programs and HPV vaccination impact, studies on campaigns and educational measures, to improve clinic’s performance in death certification, the death cause in DC would be highly advisable. Meanwhile, filling the information gap with incidence information seems an acceptable way to go.

POSTER - THEME 1: USE OF PBCR DATA IN CANCER CONTROL PLANNING

EVALUATION OF POPULATION-BASED CANCER REGISTRY IMPLEMENTATION IN MEXICO: AN EARLY RESULT

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Background

Cancer incidence by type has been established as one of the main indicators of the Monitoring Framework for Non-communicable Diseases. The only means to obtain these estimations is through the population-based cancer registry (PBCR). During the last two years Mexico has been focused in the implementation of one of them.

Aim

To analyze preliminary results of PBCR-Merida.

Methods

This is a descriptive study of preliminary results. The PBCR started in 2014, it covers the city of Merida in the Yucatan peninsula with 908,536 inhabitants. Data collection is active and passive in 25 public and private institutions. All information is handled by the national and international guidelines for data protection. Cases of non-melanoma skin cancer are not collected. Coding is done with ICD-10 and captured validated on CancReg5 software. ASR/100,000hab was estimated by direct method with world standard population.

Results

A total of 3302 new cancer cases were registered during January 2016 to December 2017, 1254 (95.8/100,000hab) males and females 2078 (130.4/100,000hab), most common diagnosis were histological examination 75.4%, clinical diagnosis 7.2%, and 17.4% DCO. The main tumours affecting the adult population are prostate cancer 204(16.0/100,000hab), lymphoma 114 (8.3/100,000hab), leukemia 83 (6.7/100,000hab), liver 80(6.2/100,000hab). In females, the most common is breast cancer 692 (42.7/100,000hab), cervix uteri 246(15.0/100,000hab), corpus uteri 137 (8.6/100,000hab) and leukemia 80(6.2/100,000hab). Childhood cancer (0-14yr) represent the 4.4% of all cancer, distribution by ICC diagnostic group is leukemia 7(6.2/A10.0/000hab), childhood leukemia 10(0.8/A49.0/000hab) and leukemia 80(6.2/100,000hab).

Discussion and Conclusions

Is necessary increase significantly the quality of the PBCR-Merida. However, in these preliminary results distributions and ranking of some rare cancers are similar with local and regional reports. Implementation process has been a joint effort of the main health care providers both local and regional reports.

COLORECTAL CANCER PATTERNS IN TAIWAN, 1996-2015

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Background

Colorectal cancer (CRC) was the most leading cancer afflicting the Taiwan population. Since 2004, the government has begun providing colorectal cancer screening for people aged 50-69. After 2010, CRC screening was incorporated with preventive health care services. In June 2013, the government extended the age of residents eligible for colorectal cancer screening to 50-74 years. However, the relationship between CRC incidence patterns and screening policy has not been evaluated recently.

Methods

CRC incidence rates using Taiwan Cancer Registry Database from 1996 to 2015 were calculated for eleven age groups (20-29, 30-39, 40-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85+). The incidence per 100,000 person-years was assessed for trend and adjusted to the world standard population. Annual percentage change (APC) and average annual percent change (AAPC) were quantified using the Joinpoint Regression Program.

Results

There were 211 615 patients age 20 years and older diagnosed with CRC in Taiwan during 1996-2015. From 1996 through 2009, the incidence rate of CRC increased in all age groups. On the contrary, rates have declined in adults age 50 years and older for colon cancer and those age 60 years and older for rectal cancer since 2010. However, among adults aged 40-49 and 40-69, the CRC rate continues to increase by 3.2%-3.6% per year.

Conclusion

The screening rate for people aged 50-69 increased from 12.1% to 23.4% and 42.9% in 2004, 2010 and 2015, respectively. In view of this, CRC incidences have begun declining after 2010 and are possible due to the government-funded screening program. However, incidence trends increased throughout the periods in young adults age 30-49 years. Further research should be considered to identify factors related to increasing rates among younger adults in Taiwan.

SCREENING HISTORY OF WOMEN 60 YEARS AND OLDER DIAGNOSED WITH CERVICAL CANCER IN THE NETHERLANDS

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Background

In the Netherlands, despite having a nationwide screening program since the 1970s, invasive cervical cancer has been detected in women of 60 years and older. Diagnosis of invasive cervical cancer after the screening period of 38-62 years could be a result of failure in the screening program, failure in detection or inadequate follow up of abnormalities. The aim of this study is to determine disease occurrence and survival of cervical cancer in relation to the screening histories of women 60 years and older at diagnosis.

Methods

Women aged 60-84 years diagnosed with cervical cancer between 2010 and 2015 were selected from the Netherlands Cancer Registry (NCR). Survival results were extracted from the Dutch nationwide network and registry of histopathology and cytopathology. Groups with different screening history were compared (Chi-square). Multivariable cox regression analysis was performed to explain possible survival differences between screening histories.

Results

No patients participated in all screening rounds, incomplete participation was reported in 35% and 61% had never been screened in the nationwide screening program. Never screened patients more often had low socioeconomic status (35% vs. 23%) and advanced stage disease (42% vs. 35% in patients in the incomplete participation group. In the latter, 255 patients (83%) had 1-2 Pap smears during the screening period. The interval between the abnormal last smear and date of diagnosis was 15 years in the majority of patients (69%). No statistical significant difference in survival was found between both groups.

Discussion and Conclusions

Women who developed cervical cancer at 60 years or older were involved in the screening process at a lower rate and during a shorter period, the treatment for advanced stage disease, which was more common in never screened group, probably will be associated with higher morbidity.

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PROPOSED NATIONAL ELECTRONIC REGISTRY OF CANCER IN PERU (RNCP)

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Introduction
It is possible to revolutionize the practice of public health in the Americas through the implementation of web-based tools that allow the automated extraction of large amounts of massive structured and unstructured data [database, texts, images, etc.]. This phenomenon is known as Big Data and is one of the main challenges and opportunities of the present and near future.

Methodology
The National Identification Document [DNI], is the universal identifier that unites the main sources of electronic information in Peru, being the “Information System of the National Network of Public Health Laboratories in Peru (NETLAB), a tool still under construction that must be adapted and developed in order to be a universal repository of all laboratory analyses, histological, cytological, necropsy, and other analyses, X-ray reports, ultrasound, tomography, magnetic resonance studies, etc...

Results
The RNCP is subject to the development of NETLAB as a great historical repository of all the examinations performed by the patient in the different health systems at a national level, identified and registered with their DNI, avoiding duplication of cases, efficient management of multiple primaries and obtaining information in real time.

Conclusion
To achieve this objective it is necessary the efficient and planned political intervention that can accelerate goals and processes since the technical part of the computer can be adapted.

POSTER - THEME 1: USE OF PBCR DATA IN CANCER CONTROL PLANNING

PROPOSAL: NATIONAL ELECTRONIC REGISTRY FOR SURVEILLANCE OF RARE CANCERS, PROPOSAL FOR LATIN AMERICAN COUNTRIES (LAC)

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Background
In Europe, thanks to the large EUROCAST database, the estimations of rare cancers [RC] burden are available. All RC together are not rare, 24% of all new malignancies. RC can also be adapted.

Results
The RNCP is subject to the development of NETLAB as a great historical repository of all the examinations performed by the patient in the different health systems at a national level, identified and registered with their DNI, avoiding duplication of cases, efficient management of multiple primaries and obtaining information in real time.

Conclusion
To achieve this objective it is necessary the efficient and planned political intervention that can accelerate goals and processes since the technical part of the computer can be adapted.

IMPLEMENTATION OF A POPULATION-BASED CANCER REGISTRY IN PARAGUAY

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Introduction
Currently cancer is the first premature cause of death in Paraguay. The present work tries to describe the expertise of the progressive implementation of Population-based Cancer Registry (PBCR) in the capital of Paraguay, Asunción.

Methodology
In coordination with the Global Initiative for Cancer Registration, since May 2017 the Ministry of Health has started implementation of the RCBP of Asunción that covers a population of around 2.2 million. All this development has followed the steps and recommendations of IARC Technical Report No. 43. “Planning and Developing Population-Based Cancer Registration in Low- and Middle-income Settings” and monitoring with periodic visits from the regional hub.

Results
The population included in the registry represents 31% of the total population of the country. In this territory are the main cancer diagnosis and treatment centers of the country. There is no significant leak of patients for other territories. It is a territory with good reporting capacity in terms of data quality, reporting population data with other variables at the sub-regional level. Five large public hospitals and two private hospital services agglutinate all cancer diagnoses. The national registry, which by now has a fast and effective data collection process, is not shared with the rest of the registries. A pilot period of collection started last March, in 2 of them we already started to collect cancer data. Was established a procedure manual and now the team has 3 part-time personal. CanReg5 is used. All the team did at least once mentorship outside of Paraguay, financed by IARC and PAHO/WHO.

Conclusion
With the progressive expansion of computer networks, between the oncology and pathology services, as well as its automation of coding of diagnoses, will be a faster implementation of the registry in Paraguay.

CANCER REGISTRY IN CUBA TO GUIDE THE ACTIONS OF THE CUBAN CANCER CONTROL PROGRAM

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Background
Cancer has been the second cause of death in Cuba since 1958. The existence of the National Cancer Registry (NCR) guarantees updated data on the disease, and the generation of valuable information to guide the actions and strategies of the Cuban Cancer Control Plan. We provide an overview of cancer behaviour in Cuba between 1990 and 2014.

Methods
Cancer incidence, crude and age-standardized (WRR) rates of the world standard population by sex, province, sex, age group were obtained from the NCR by direct methods. Temporal trends of the WSR were adjusted using joint point regression.

Results
In 2014, the NCR estimated 44,605 new cancer cases, 20% more than 2010. The 75% of them are notified by 30 hospitals. The WSR of male cancer cases were 263,410/100,000 in males and 223,9/100,000 for female. The 60% of new cancer sites were reported in skin, prostate, lung and liver, oral cavity and pharynx in men; and skin, breast, cervix and lung in women. The higher cancer incidence rates were observed in six provinces. Among the population over 60 years of age occurred the 80% of all new cases for male and the 60% for female. The time trends have been increased for both sexes over decades and vary substantially for different cancer sites, sex and provinces. The projection for 2020 is that 49,291 new cases will be diagnosed. Even when quality of data has been improved since 1990, indexes such as DCC (20%) and histological verification (75%) do not reach established international standards. The behaviour of these indexes is not uniform throughout the country.

Conclusion
Cancer is a big, but not uniform health’s problem in Cuba. Over two thirds of cancer incidence is concentrated in seven cancer sites and in six provinces. Address the resource to the main cancers and places could influence in the disease control.

NETWORKING CANCER REGISTRIES FOR THE SURVEILLANCE OF RARE CANCERS, PROPOSAL FOR LATAM COUNTRIES

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Background
The automated extraction of large amounts of information on incidences will be a faster implementation of the registry in Paraguay.

Methods
Implementation of the registry in Paraguay. We ask the AICR to create international networks. We ask the AICR to create international networks. We ask the AICR to create international networks. We ask the AICR to create international networks.

Results
The RNCP is subject to the development of NETLAB as a great historical repository of all the examinations performed by the patient in the different health systems at a national level, identified and registered with their DNI, avoiding duplication of cases, efficient management of multiple primaries and obtaining information in real time.

Conclusion
To achieve this objective it is necessary the efficient and planned political intervention that can accelerate goals and processes since the technical part of the computer can be adapted.
POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA

POSSIBLE OVERTREATMENT AMONG MEN AGED 80 YEARS AND OLDER WITH LOCALIZED PROSTATE CANCER IN JAPAN

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Background
Despite treatment guidelines recommending observation for men with low-risk prostate cancer with life expectancy ≤10 years, a majority of elderly patients choose active treatment, which may result in overtreatment. Given the growing burden of prostate cancer among men aged ≥80 years (super-elderly men), accumulation of survival data for evaluation of overtreatment among super-elderly patients is imperative. Here, we report results of a population-based cohort study to clarify potential overtreatment of super-elderly men with localized prostate cancer.

Methods
We used cancer registry data from the Monitoring of Cancer Incidence in Japan project, which covers 47% of the Japanese population. The subjects were men diagnosed with prostate cancer between 2006 and 2008. Follow-up period was 5 years. We calculated 5-year relative survival rates among the active treatment and observation groups after adjustment for patient's characteristics. The results of the research are presented.

Results
Of the 48,782 patients with prostate cancer included in the analysis, 15.1% were super-elderly men. The 5-year relative survival rates of super-elderly men with localized cancer were 105.9% and 104.1% among the active treatment and observation groups, respectively.

Discussion and Conclusion
These specific survival data in super-elderly men in the observation group can be useful in shared decision-making for these patients and may lead to a reduction in overtreatment.

SCENARIO OF THE INFORMATION ON THE RCBP OF JOÃO POESSA

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Introduction
The Paraiba Population-Based Cancer Registry was implemented in the year 2000, and data were collected since 1999 and are consolidated by the year 2012. The Registry is part of the Health Surveillance Department of the State Department of the Health of Paraiba, having as coverage area the municipality of Joao Pessoa.

Methods
Analysis and analysis of the data for the national risk analysis program of Sibasgeop / INCA and the program Excel version 2010 questionnaire, corresponding to the results of the research.

Results
RCBP of Joao Pessoa, per 100,000 inhabitants, considering the period from 1999 to 2012. Concerning to male sex, on the period analyzed, there is an increase in prostate cancer from the year 2001 and fall from the year 2007, others periods remains stable. For women, cervix incidence rates fell throughout the series, while breast cancer showed oscillations in the period analyzed. Men, prostate cancer increased power from the age group of 50 to 54 years. In women, breast cancer begins to focus more frequently in the age group 35-39 years. Quality indicators, according to primary location and sex, RCBP Joao Pessoa, period 2008-2012, in men, prostate cancer is the one with the highest percentage of Microscopic Verification. The most lethal cancer is from the foramina of bronchi and lungs (79.75%). In women, the mother has the highest percentage of MV and trachea, bronchi and lungs for those with the highest lethality (87.85%).

Discussion and Conclusion
The most common cancers in Paraiba follow the national trend for the first location in both sexes. Our data shows a characteristic of cancer chronicity. In the municipality of Joao Pessoa, the expected number of cases for 5 years. To calculate the expected number of cases, we used the number of population by age group with 5-year interval of each small area and the expected number of cases for 5 years. To calculate the expected number of cases, we used the number of population by age group with 5-year interval of each small area and the corresponding age group specific incidence rates of the standard population. Using the software R, we matched the calculated SIRS with its corresponding small area of the map file and identified cancer clusters with Moran’s I test.

Results
Top five small areas of SIRS were identified (SIRS 1.50, 1.22, 1.15, 1.15 and 1.15 respectively), and low five areas (SIRS 0.45, 0.52, 0.58, 0.76, and 0.76). Mapping of cancer incidence may be useful to search a hypothesis on risk factors associated with a cancer. We would like to describe a spatial variation in small area cancer incidence and explore cancer clusters in Chaungnam province, South Korea.

Conclusion
The cancer cases that occurred in each small area during 2007 to 2011 were identified from the Chaungnam Cancer Registry database. The indirect standardized incidence ratio for 5 years (SIRS) was calculated as follows: SIRS= the observed number of cases for 5 years / the expected number of cases for 5 years. To calculate the expected number of cases, we used the number of population by age group with 5-year interval of each small area and the corresponding age group specific incidence rates of the standard population. Using the software R, we matched the calculated SIRS with its corresponding small area of the map file and identified cancer clusters with Moran’s I test.
POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA

JUST HOW RARE ARE RARE LYMPHOID MALIGANICES IN EUROPE? FINDINGS FROM RARECARENET

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Background
Rare cancers contribute to just under a quarter of the total cancer burden in Europe. Many have poorer survival when compared to more common cancers with regional and international variation apparent.

Methods
Using data from RARECAREnet, which collates data from 94 European population-based registries, we investigated incidence, prevalence and survival of rare lymphoid malignancies diagnosed in Europe.

Results
In 2008, an estimated n=371,855 individuals were living with a rare lymphoid malignancy in Europe. During 2000-2007, n=283,288 new rare lymphoid malignancies were diagnosed; incidence for all lymphomas' and Natural Killer cell neoplasms (31%). Survival was only marginally better for leukaemia had the poorest 5-year relative increase, patients with prolymphocytic B-cell leukaemia (+11%). Despite this observed between 1999 and 2007 with the least commonly diagnosed malignancies accounting for less than 1% of total cases.

Hairy Cell Leukaemia: Incidence, Prevalence and Survival in Europe. Findings from RareCareNet

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Introduction
Limited epidemiological information is available on hairy cell leukaemia (HCL) a rare, indolent form of leukaemia.

Methods
We used RARECAREnet, an online analysis tool which provides aggregated data from 94 European population-based registries across 27 European countries to investigate incidence, prevalence and survival of HCL diagnosed in Europe during 2000-2007. Crude and age-adjusted incidence rates were estimated. Relative survival (RS) was determined using the Ederer II method.

Results
In 2008, it was estimated that there was n=20,836 patients living with HCL in Europe. During the study period (2000-2007), n=4,387 cases of HCL were diagnosed in Europe giving an age-standardised rate of 0.24 (95% CI 0.23-0.25) per 100,000 people. Incidence was higher in males and older adults. Incidence increased slightly over time but remained relatively stable. Similarly, 5-year RS remained stable throughout the study period (1999-2001: 90% [95% CI 88-93%] to 2005-2007: 89% [95% CI 86-92%]). Differences in survival were noted by age group and sex with females experiencing significantly poorer 5-year RS ranging from 58% in Poland to 99% in France.

Discussion and Conclusion
The majority of HCL patients in Europe can expect to live beyond 5 years, however significant disparities exist by sex, age group and country of residence. International collaborative efforts both at a clinical and research level are required to reduce the disparities experienced by HCL patients across Europe.

Educational Inequalities in Gastric Cancer Incidence and Mortality, Quito 1996-2013

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Background
Despite the declining incidence and mortality, gastric cancer (GC) remains a public health problem worldwide. Higher incidence and mortality rates have been recorded for populations with lower socioeconomic status. This article seeks to evaluate incidence and mortality trends of gastric cancer in Quito by educational level.

Methods
Using data from the population-based Quito Cancer Registry, age-specific standardized incidence and mortality rates were calculated by educational level (rates are expressed per 100,000 person-years). Time trends in incidence and mortality from 1996 to 2013 were evaluated and expressed as the estimated annual change percentage (EAPC). Using robust Poisson regression, we modelled rate ratios (RR) and the relative index of inequality (RII) of incidence and mortality by educational level (primary, secondary and tertiary/superior).

Results
The RR estimates for the whole studied period showed a higher risk of developing GC among the less educated compared to the more educated; this trend was stronger in women (RR primary education 4.6, RR secondary education 3.2, both p <0.0001). A similar picture was found for mortality: women (RR primary education 4.6, RR secondary education 3.0, both p <0.0001) and men (RR primary education 2.4, RR secondary education 1.8, both p <0.0001). Correspondingly, the RII was higher among women [RII incidence: 2.53, RII mortality: 1.8] than in men [RII incidence: 2.15, RII mortality 1.6]. No time trends in the RR or RII were observed.

Discussion and Conclusion
The incidence and mortality rate showed a clear dependence on educational level. It is needed to strengthen and focus primary and secondary prevention strategies, to further reduce the burden of gastric cancer in Quito.

Trends on Cancer Incidence and Mortality in Pasto-Colombia, 15 Years of Follow-up

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Background
In Colombia it is necessary to continue producing quality and continuously updated information on the magnitude of cancer, derived from population-based cancer registries to contribute to decision making, and implementation of strategies for health promotion, prevention and treatment of cancer in order to reduce the impact on the population. This study describes cancer incidence, mortality in Pasto-Colombia during 1998 to 2012.

Methods
Observational descriptive study of mori - mortality due to malignant tumours in Pasto The collection, processing and systematization of the data, was carried out according to international standards for population-based cancer registries. The incidence and mortality rates and trends were calculated by period, sex, age and tumour site.

Results
During the period 1998-2012 there were 8,010 new cases of cancer, of them, 57.7% occurred in females. There were 4,214 deaths reported, 52.0% in females. The incidence (p males 0.7, p females 0.3) and mortality (p males 1.0, p females 0.2) did not present significant changes over 15 years of observation and the tumours that cause greater mortality affect the stomach, cervix uteri, breast and prostate.

Discussion and conclusion
Cancer in general, continues to be a serious health problem for the population of Pasto. The global behaviour of cancer incidence and mortality, identify the need to promote and strengthen promotion and prevention programs, especially focused on tumours of the stomach, prostate, breast and cervix uteri that produce greater morbidity and mortality in the population.
Recent change of colorectal cancer incidence trend in Gwangju-Jeonnam Korea, 1999-2015

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Background
In Korea, colorectal cancer (CRC) is the second most common cancer among men and the third most common cancer among women. The number of new cases has doubled in 2015 compared to those diagnosed in 1999. However, a definite declining trend of CRC incidence has shown in the last four years. Therefore, we evaluate whether there is a difference of incidence trend according to sub-anatomical site, geographic region, sex, and age group.

Methods
Age-standardized incidence rates (ASIR) with WHO standard population of CRC, proximal colon, distal colon, rectum, and overlapping/unclassified region were calculated using Gwangju-Jeonnam Cancer Registry database (1999-2015). Joinpoint regression model was used to identify and describe the changes in the trend of CRC incidence rate.

Results
In 2011, the highest incidences of CRC in Gwangju-city and Jeollanam-do, Korea, are found in both sexes with the ASIR of 52.3 [100,000] and 25.9 in men and women. The increasing trend in ASIRs of CRC turned to a decreasing since 2015, with the estimated annual percent change (EAPC) of -8.1% and 95% CI of -12.5 and -3.5. Similar decreasing trends annual percent change (EAPC) of -8.1% and 95% CI of -12.5 and -3.5. Similar decreasing trends annual percent change (EAPC) of -8.1% and 95% CI of -12.5 and -3.5.

Conclusion
Distal and rectal cancer incidence rates since 2012 are observed when analyzed by sex, CI of -12.5 and -3.5. Similar decreasing trends annual percent change (EAPC) of -8.1% and 95% CI of -12.5 and -3.5.

Discussion and Conclusion
For scientific substantiation of organizational, measures aimed at prevention of oncological diseases in the Russian regions the analysis of cancer incidence (MN) in the Samara region in the period 2008 to 2012 years

This was used materials Cancer Incidence in Five Continents Vol. X and Vol. XI. Trends in incidence were studied by means of extensive and standardized incidence rates, alignment of time series which was held at the parabola of the first order.

The rate of total cancer was one of the highest among 10 Eastern Europe included in the study - 331.6 per 100,000, below the indicators of all the territories included in the comparison. First place (28.2%) frequency of occurrence took the MN of digestive organs (C15-26), second place (13.8%) - respiratory system (C30-C39), third (12.7%), breast cancer (C50), fourth (10.6%), MN of female genitals (C30-C39), fifth (8.6%) - male genital organs (C60-C62), sixth (7.4%) of organs of a urinary (C64-C66), seventh (5.8%) - lymphatic and hematopoietic tissue (C81-C85), eighth (4.2%) - eye, brain and spinal cord (1.9-4.9), ninth (3.0%) - MN of the head and neck (300-314) and tenth place (2.3%) - bone, soft tissue, and melanoma of the skin (C43-44).

An international compare showed that in the Samara region in comparison with other countries of Eastern Europe, the highest incidence rates recorded during MN of the stomach, rectum, mediastinum, breast, endometrial, ovarian, prostate, brain, and bone and soft tissue. The statistical significant trends identified in the Samara region, which is one of the typical regions of the Russian Federation, will inform the development of a comprehensive cancer prevention programmes in other regions of Russia.

Excess risk of death by causes in breast cancer patients of Tarragona and Girona, Spain

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Background
In Catalonia, breast cancer (BC) mortality has decreased since 1990, although it is still the leading cause of cancer death in women. Women with BC show an excess of mortality (EM) due to cardiovascular problems and other long-term causes because of shared hormonal and genetic risk factors and secondary effects of treatments.

Methods
Population-based cohort study with all women aged 50-74 years diagnosed with invasive BC in the Tarragona and Girona during the periods 1985-1994 (N=4,211) and 1995-2004 (N=5,984). The follow-up (passive and active) was done until December, 31, 2014. The standardized mortality ratios (SMR) were evaluated at 10 years (periods 1985-1994, 1995-2004 and 1995-2004) at 20 years (period 1995-1994) for causes other than BC excluding women who died due to BC.

Results
The global SMR was 1.21 (95%CI: 1.14-1.28) at 10-years and 1.22 (95%CI: 1.15-1.30) at 20 years. The statistically significant SMR at 10 years were for: Tumours (1.48), Cancers of colon (1.64), lung (2.61), uterus body (2.85) and uterine (2.63). Leukaemia (2.05), other haematological (1.92), Diabetes mellitus (1.77), or other heart diseases (1.88), osteoporosis, and pathological fracture (2.16) and diseases of the kidney and ureter (1.61). These results show statistically significant SMR at 20 years were similar. By period, SMR at 10 years of diagnosis (for all causes except BC were 1.29 (1985-1994) and 1.13 (1995-2004).

Discussion and Conclusions
One limitation of the study is the use of official mortality causes of death with BC have a higher risk than the general population of dying from same causes other than BC. This risk was lower in the last period of diagnosis, possibly due to improvements in the control of associated pathologies and side effects of treatments.
**POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA**

**INTERNATIONAL COMPARISON OF SURVIVAL FROM OVARIAN CANCER BY HISTOLOGICAL SUBTYPE IN YOUNG WOMEN (CONCORD-3)**

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**Background**
Ovarian cancer comprises several histologically distinct tumour types with differing levels of survival. The distribution of ovarian cancer histology varies world-wide and by age: the proportion of tumours with a favourable prognosis is higher in East Asia, and younger women have a different distribution of histology from that of older women. We describe the world-wide distribution of ovarian cancer histology for young women (aged 15-39 years), to quantify the impact on international variation in survival.

**Methods**
The CONCORD programme is the largest population-based study of global trends in cancer survival. CONCORD-3 includes data from 65 countries for 63,957 women (aged 15-39 years). We defined six histological groups: Type I epithelial, Type II epithelial, germ cell, sex cord-stromal, and other (non-epithelial and non-specific) tumours.

**Results**
Type II tumours are the commonest group world-wide for women aged 15-39, representing 36% of all ovarian cancers, followed by Type I tumours (30%) and germ cell tumours (19%). The distribution of histology differs widely by age, even among younger women. In the youngest age group (15-19), 60% of women were diagnosed with germ cell ovarian cancer, while only 12% of women were diagnosed with Type I tumours and 12% with Type II tumours. For women aged 35-39, only 6% of women were diagnosed with germ cell tumours, while 35% and 45% were diagnosed with Type I and Type II tumours, respectively.

**Discussion**
The distribution of ovarian cancer histology varies widely world-wide and by age group. Type I, germ cell and sex cord-stromal tumours are generally associated with higher survival than Type II tumours, so the proportion of these tumours may influence survival estimates for all ovarian cancers combined. Standardising ovarian cancer survival estimates by histological subtypes has been done for age may be necessary to understand the variation in survival world-wide.

**EPIDEMIOLOGICAL CHARACTERISTICS OF CANCER. SOLCA CUENCA-ECUADOR 2012-2016**

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**Introduction**
Cancer is a global health problem. Since the 21st century, it has been one of the main causes of mortality. It is the second cause of death in the general population after cardiovascular diseases, the WHO has recommended that each country develop a national plan to fight cancer, however this could not be achieved because one of its main problems in their study is the difficulty of registering cases and the little information on epidemiological characteristics.

**Objectives**
To determine the effect of age, type of cancer and histology on survival using the CONCORD-3 database.

**Materials and Methods**
We collected from the CONCORD-3 database for the period 2012-2016, data from 38 861 032 women, obtained from 94 countries, including 63,957 women aged 15-39 years. Cox analysis of proportional risks.

**Results**
In this cohort, 73% of women were diagnosed with breast cancer, 26% with cervical cancer, and 1% with prostate cancer. The 5-year survival of women diagnosed with breast cancer in Solca Cuenca in the period 2012-2016 was carried out and those who had histopathological confirmation were taken into account.

**Discussion and Conclusion**
The malignant oncological processes are increasing annually. It is very important to obtain hospital records at sites of concentration of this disease in order to identify trends and establish measures for the prevention, control and timely treatment of cancer.

**SURVIVAL PROGNOSTIC FACTORS FOR BREAST CANCER AT THE HOSPITAL NACIONAL ADOLFO GUEVARA VELAZCO, ESSALUD, CUZCO**

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**Background**
Breast cancer is the most frequent in Peruvian women and, also, the first cause of mortality among 30-50 years of age.

**Methods**
Survival analysis used the hospital-based cancer registry of the HNAGV from 2008 to 2017. 5-year survival was calculated using actuarial tables, Kaplan-Meier analysis and Cox analysis of proportional risks.

**Results**
354 records were analyzed. The overall 5-year survival was 79%; 95% CI (72% - 86%). Age-grouped survival was 77.8% for women 40-49 y.o., 78.6% for those 50+ y.o. For women aged 50-59 y.o. it was 88.5% (p < 0.026). Patient with ductal histological pattern (72% of the cases) had a survival of 80%; mixed pattern (14%) had a survival of 94.1%; while patient with lobular pattern (21%) had a survival of 76.2% (p < 0.04). When comparing the histological type by age group, women with ductal cancer under 40 y-o had the lowest life expectancy (57.9%; p < 0.047). Regarding survival according to the clinical stage, a better prognosis was found in stage 0-1, while for stages 2, 3 and 4 they were 88.8%, 77.4% and 29.0% respectively (p < 0.001). In terms of location, the best survival was for primary lesion located in the internal lower quadrant (100%), followed by internal superior quadrant (87.4%) and areola (88.5%). The lowest survival was found when lesion was located at the central portion of the breast (68.2%) and in contiguous sites (71.3%; p < 0.005).

**Discussion and Conclusion**
The 5-year survival of women diagnosed with breast cancer in HNAGV is worse in women 40 years or ≥50 years, those with lobular histological pattern, those located in the central portion of the breast and those located in contiguous sites. Efforts should be focused in early diagnosis of breast cancer self-evaluation techniques, especially among young women with risk factors.

**Key words**
Breast cancer, prognostic factors, survival.
Background
Breast cancer standardized incidence rates in Brazil are estimated to vary in 2018 from 24 to 59/100,000 in less to more developed regions respectively, with mean rate of 51/100,000 women. Rates are higher in the age of 50. However, some controversies still exist about beginning screening and the age of 40, as some breast society's state. We aim to calculate breast cancer incidence and mortality standardized rates (ASIR) in a mid-sized north-eastern Brazilian city, and to calculate trends according to age groups 20-40, 40-49, 50-69, and 70+, to verify if screening policies should be modified.

Methods
The databases from the Aracaju Cancer Registry and from the Brazilian Mortality Information System (SIM) from 1996 -2013 were used to calculate standardized rates, considering all invasive tumors, histological types among both genders. Trends were assessed by the annual percent change (APC) using the Joinpoint Regression Program.

Results
For the period of study, 2,527 incident cases and 2,333 deaths were assessed, and distributed in percentage by age groups as follows: 20-40: 11% 50-69: 13% and 70+: 10%, respectively for incidence and mortality. Mean incidence and mortality ASIR were 57.2 and 16.4/100,000 women respectively; mortality to incidence ratio was 0.29, which if used as a proxy of 5-year survival confers a figure of 71%. Trends showed stabilization both for incidence and mortality for all age groups.

Discussion and Conclusion
The population studied showed a middle incidence rate, characteristic of the Brazilian society. Considering stable mortality ASIR and non-significant APC through the various age groups, we conclude that population screening policies beginning at 40, with two-year interval should be appropriate and prioritized for the 50-69 age group.

TRENDS OF BREAST CANCER IN A MID-SIZED BRAZILIAN CITY TO SUPPORT SCREENING POLICIES

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MONITORING OF INCIDENCE AND MORTALITY RATES OF CANCERS AROUND FUKUSHIMA NUCLEAR PLANT ACCIDENT AREA: UPDATE

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Background
We observed a trend of incidence and mortality of cancers in several prefectures around Fukushima in order to figure out the effect of the nuclear plant accident in 2011.

Methods
We calculated the age standardized incidence rate (ASIR), age standardized mortality rate (ASMR) and annual percentage of change (APC) by prefecture, by major sites (stomach, colorectum, lung, liver, female breast, cervix, prostate, thyroid and leukaemia) by sex, and by age-group using population-based cancer registry data and vital statistics between 2008 and 2014 divided into two periods, before [2008-11] and after [2012-14] the accident. In consideration of refugees from Fukushima, we observed the figures in 9 neighbour prefectures and estimated this as a reference. In view of the successive quality improvement of PBCR data, we confirmed quality indicators in association with APC.

Results
The improvement of data quality was remarkable in many prefectures including Fukushima. Both ASIR and ASMR in Fukushima levelled off from 2008 to 2014 in males. In females, ASIR increased moderately after the accident. This increase in ASIR in females was observed in other prefectures as well. However, cancer did not change at the time of the accident in any prefectures, including Fukushima. In Fukushima, ASIR of colorectum, cervix and thyroid cancer increased from 2011 to 2014, and accordingly, APC demonstrated a significant change. The rapid increase in incidence of thyroid cancer since 2011 slowed down in 2014.

Discussion and Conclusion
The consistent change of APC in Fukushima and neighboring prefectures was not generally observed, except for several primary sites. Organized screening programs and improvement of data quality are considered the main factors of the increase. The study result found a narrowing disparity of ASIR by prefecture, as well.

LUNG CANCER INCIDENCE IN TAIWAN: RELATIONSHIP TO EGFR MUTATION, SMOKING, GENDER AND HISTOLOGICAL TYPES

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Background
Past studies showed that women have a higher proportion of lung adenocarcinoma and higher rate of epidermal growth factor receptor (EGFR) mutation than men. However, few population-based studies reported the incidence rates of lung cancer stratified by smoking status and histological types among both genders.

Methods
The National Taiwan Cancer Registry and adult health surveys were exploited to estimate the age-standardized incidence rates (ASIR) of lung cancer in both genders and smokers/non-smokers between 2003-2015. The secular trend of incidences of lung cancer in different histological types was analyzed from 1990 to 2015. The ASIR in 2003-2007 was used for international comparisons between smoking prevalence and incidence rates of lung cancer.

Results
A total of 51,111 lung cancer patients (30,168 men and 20,943 women) aged from 20 to 84 during 2011-2013 were used in this study. Female gender (71.7%) and adenocarcinoma (82.6%) were most frequent in never-smoking lung cancer patients. Positive rate of EGFR mutation was more frequent in never smokers (68.4%) than in ever smokers (40.4%). The ASIR of lung adenocarcinoma of women were higher than men among smokers (66.9/105 vs. 68.4%), than in ever smokers (40.4%). The ASIR of adenocarcinoma of women were higher than men among smokers (66.9/105 vs. 68.4%), than in ever smokers (66.9/105 vs. 68.4%) and than in never smokers (33.5/105). The phenomenon was in opposite group of non-smokers (68.4%), but the situation was opposite in non-adenocarcinoma group. The secular trends of lung cancer incidence are increasing from 1990 to 2015 in both genders and non-smokers, but not in non-adenocarcinoma. Compared to other countries, women in Taiwan have a relatively high incidence rate of lung adenocarcinoma under lower smoking prevalence, but the characteristic was not appeared in non-adenocarcinoma of women and all histological types of men.

Conclusion
Women in Taiwan have a higher incidence of lung adenocarcinoma than men in both smokers and never smokers, but the situation was opposite in non-adenocarcinoma patients. The Asian women, especially in Taiwan, have relatively high incidences of lung adenocarcinoma but lower smoking rate.
Those districts with better living standards.

Cancers in Metropolitan Lima are higher in Callao, period 2010-2012. In summary, the most frequent cancers: breast and prostate, and Informatics for the year 2012. The unit of analysis was the 43 districts of Metropolitan Lima and 6 districts of the Callao region, excluding those districts with less than ten cases.

A good association was established between the HDI and ASR of breast cancer (r = 0.874, p = 0.011), and between the HDI and ASR of prostate cancer was taken from the base of the National Institute of Statistics and Informatics for the year 2012. The unit of analysis was the 43 districts of Metropolitan Lima and 6 districts of the Callao region, excluding those districts with less than ten cases.

A good association was established between the HDI and ASR of breast cancer (r = 0.874, p = 0.011) and the HDI for a high HDI (0.797) and n = 42), considering the district of Miraflores the representative for a high HDI (0.797) and the district of Ventanilla for a low HDI (0.532).

Results

A good association was established between the HDI and ASR of breast cancer (r = 0.874, p = 0.011) and the HDI for a high HDI (0.797) and n = 42), considering the district of Miraflores the representative for a high HDI (0.797) and the district of Ventanilla for a low HDI (0.532).

It is an ecological design of multiple exploratory groups. The Pearson correlation coefficient was applied to calculate the degree of association of two quantitative variables, HDI and ASR. The ASR of breast and prostate cancer was taken from the base of the National Institute of Statistics and Informatics for the year 2012. The unit of analysis was the 43 districts of Metropolitan Lima and 6 districts of the Callao region, excluding those districts with less than ten cases.

Conclusion

A strong direct association was established between the HDI and the ASR for two of the most frequent cancers: breast and prostate, in the districts of Metropolitan Lima and Callao, period 2010-2012. In summary, the incidence rates of breast and prostate cancers in Metropolitan Lima are higher in those districts with better living standards.
Background
Kaposi’s sarcoma (KS) is a rare angio proliferative neoplasia that commonly affects the skin and may involve visceral organs. The highest incidence of KS cases in the world in 2012 was 33 cases/100,000 inhabitants in Zimbabwe (Africa). In Brazil, the incidence is 0.4 cases/100,000 inhabitants, with a mortality rate for both sexes of 0.04 case/100,000. The goal of this study was to evaluate the time trends of mortality by KS in Brazil.

Methods
From 2000 through 2015, we calculated KS mortality rates per 100,000 people who were age-standardized to the world population. The information about population references of Brazil based on the distribution of age by sex as well as the respective intercensal estimates and the data of the KS deaths were obtained from the official data from the Ministry of Health of public domain available at the website www.danasus.gov.br. We obtained the time trends using the Joinpoint Regression software.

Results
were observed 674 deaths from SK enrolled in the DATASUS database from 1983 to 2015. The majority of the sample is male (60.1%), married (64.32%) and white skin color (66.21%). The correlation data, the majority of patients are over 60 years of age at the time of death (52.7%). A significant increase in the KS mortality coefficient was observed, of 6.4% per year, (95% confidence interval: 4.9 to 7.8).

Discussion and Conclusion
Brazil’s mortality is lower when compared to African countries, it is higher when compared to developed countries. It was observed that the mortality rate of KS in Brazil is in the ascendency. National public health policies should be implemented to carry out primary prevention and early diagnosis of KS with the aim of improving this scenario in the coming years.
EPIDEMIOLOGICAL CHARACTERIZATION OF LUNG CANCER IN THE REGIO AUTONOMA DA MADEIRA (RAM) - RON PORTUGAL

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Background
Lung cancer (LC) is the third tumour in RAM and the most common cause of death cancer in the world. The aim of this study is to characterize the LC patients and evaluate the factors that influence overall survival (OS).

Methods
A historical population-based cohort included the population residing in RAM with diagnosis of malignant LC between 2012 and 2014 registered in the database of the National Cancer Registry. Analysis of OS was performed by Kaplan-Meier estimates and log-rank test.

Results
A total of 251 patients were included, mostly men, with 65 to 74 years and tumour located in the upper lobe. 62% of the diagnoses were non-smokers, 10% were small cells and 25% were non-specific. 96% of the cases were unilateral. 40% of patients had performance status Kamotsky 0-100%. In relation to the TNM, 6% stage I, 10% stage II, 17% stage III, 64% stage IV and 3% unknown. Mutations were assessed in a few patients. 75% of stage I patients underwent surgery alone, 37% of stage IV patients only underwent chemotherapy and 21% of patients underwent radiotherapy alone or concomitantly with another treatment. 33% of patients did not have any treatment. Among these 76% had stage IV and 98% died (most two months after diagnosis). The OS at one year is 50%, at three years are 15.4% and at five years are 9.3%.

Discussion
Factors such as stage (stage II), morphology (non-small cells) and treatment (surgery) have been found to influence OS. Evaluate in LC cases the EGFR and ALK mutations for their predictive and prognostic value.

Our retrospective study demonstrates poor survivals rates

We currently find many patients in late stages that make curative treatments impossible. Early diagnosis and screening programs in high-risk individuals is necessary to detect cancer in more favourable stages.

SOCIAL INEQUALITIES IN CANCER SURVIVAL IN A LOW AND MIDDLE INCOME COLOMBIAN POPULATION

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Background
Although survival is the main indicator of the effectiveness of health system for tackling cancer and for identifying social inequalities in access to early diagnosis and timely treatment, in Colombia there is a lack of knowledge about it. This study analyses population-based survival for persons with cancer living in Pasto-Columbia.

Methods
Five cohorts of all persons with stomach (N=1046), lung (N=222), prostate (N=563), cervical (N=677) or breast cancer (Women N=765) diagnosed during 1998-2012 and characterized by Cancer Registry of Pasto-Columbia were followed up to 5 years to estimate net survival rates and to explore in each cohort relationships with demographic (sex and age), clinical (tumor site), health insurance (type of affiliation, access to early diagnosis and timely treatment) and socioeconomic conditions (residence area, socioeconomic stratum).

Results
Overall 5-year net survival was 16%, 8%, 56%, 54% and 67% in persons diagnosed with stomach, lung, prostate, cervical and breast cancer, respectively. The adjusted hazard ratio of death increases almost two times for elderly persons (in all cohorts), with subsidized health insurance (in stomach, prostate, cervical and breast cohorts), living in low socioeconomic stratum (in lung, cervical and breast cohorts), without education (in cervical and breast cohorts), with late diagnosis (in cervical and breast cohorts) and a delay of 3 months in treatment (in cervical cohort).

Discussion and Conclusion
Public health policies should be focused in vulnerable groups with social deprivation and increased barriers in access early diagnosis and timely treatment.

LIVER CANCER SURVIVAL IN METROPOLITAN LIMA CANCER REGISTRY (MLCR) IN PERU 2010-2012

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Background
More than 700 000 people are diagnosed with Liver cancer every year in the world. This is a leading cause of cancer deaths worldwide, representing more than 600 000 deaths every year. Epidemiological studies have shown that liver cirrhosis, hepatitis B virus infections, hepatitis C, exposure to aflatoxin B1 and alcohol are the main etiological factors involving the development of this type of cancer. It is very difficult to calculate the life span of a patient with liver cancer, for which we seek to estimate the global survival of this cancer according to sex and age group.

Methods
Using the Kaplan Meier method, a global survival analysis was performed for a period of 5 years and, using the Log-rank test, an analysis comparing survival by sex and by age group.

Results
In the analysis, 726 patients were included diagnosed with liver cancer from 2010 to 2012 period. After excluding those registered by death certificates (577) and patients who were not located in the data base from Civilian Registers (12). The global survival observed for the 5-year period is 10.9%, there is no statistically significant difference between survival by sex (Log-Rank 1.064, p-value = 0.30), there is a statistically significant difference between the age groups: 9 to 29 years and 30 to more years (Log-Rank 8.668, p-value = 0.003), with higher survival for the first age group: 21.3% (second age group: 9.6%).

Conclusions
According to data from the MLCR, liver cancer is very aggressive and this is reflected in global survival. According to the authors, the percentage difference in overall survival by age groups would show that the Cancer Population Registries should propose more ambitious research plans regarding cancer survival, concerning treatment and clinical stage.

CANCER INCIDENCE AND MORTALITY IN MEDELLIN-COLOMBIA, 2010-2014

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Background
This study provides information on cancer incidence and mortality in a Colombian population during 2010-2014, based on the data and methodology of the Population-based Cancer Registry of Antioquia to facilitate the implementation of cancer control strategies.

Methods
This is a descriptive study of cancer incidence and mortality in a population, residing in the urban area of the municipality of Medellin. The cancers included in the study are those prioritized in the cancer control plan for Colombia (PDCC-cancers). The collection, processing and systematization of the data were performed in accordance with internationally standardized parameters for population cancer registries. Incidence and mortality rates were calculated by gender, age and tumor location.

Results
During 2010-2014 there were 22,379 new cancer cases recorded in the urban area of the municipality of Medellin, of which 43.5% corresponded to the PDCC-cancers. During the same period, 14,922 cancer deaths were reported, 23.5% related to the PDCC-cancers. During 2010-2014 there were 22,379 new cancer cases recorded in the urban area of the municipality of Medellin, of which 43.5% corresponded to the PDCC-cancers. During the same period, 14,922 cancer deaths were reported, 23.5% related to the PDCC-cancers. During the same period, 14,922 cancer deaths were reported, 23.5% related to the PDCC-cancers. During the same period, 14,922 cancer deaths were reported, 23.5% related to the PDCC-cancers.

Discussion and Conclusion
Cancer is a health problem for the population of Medellin. It is necessary to emphasize research and monitor risk factors, the health response and the capacity of the health provider network when facing the growing demand caused by this epidemic.
INCIDENCES AND TRENDS OF LUNG CANCER IN WESTERN KENYA FOR THE PERIOD 2012-2016  
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Background  
Lung cancer diagnosis has been a challenge in western Kenya due to the technicalities related to screening and diagnostic procedures. The burden in the adult population is largely unknown, as most patients are managed for Pulmonary Tuberculosis, since both have similar clinical manifestations. The Eldoret Cancer Registry (ECR) provides statistics and epidemiological profile across western region of Kenya. The aim of this study is to establish lung cancer incidences in relation to year of diagnosis, age, gender and stage at diagnosis across western Kenya region.

Methods  
Retrospective reviews of all cases of lung cancer diagnosed at the Teaching and Referral Hospital from 2012 to 2016 were identified from the ECR. Data on year of incidence, age, gender, stage at diagnosis and county of origin was analyzed.

Results  
Out of the 60 patients diagnosed with Lung cancer, the findings were as follows: In 2012 there were 11 cases representing 18.3%, 2013 10 cases (16.7%), 2014, 12 cases (20%), 2015, 13 cases (21.7%) and 2016, 13 cases (20%). Incidences by age were in the following cohorts: D-79 years 25% 30-39 years (4) 9%, 40-49 years (1) 3%, 50-59 years (7) 28%, 60-69 years (12)(20%), 70-79years (15)(25%), above 80 years (4) 5%. Incidences by gender: Male had 38cases at 70-79years (15) 25%, above 80years (3) 5%, 50-59years (17) 28.3%, 60-69years (12) 20%, 30-39years (4) 6.7%, 40-49years (8) 13.3%, 11 cases representing 18.3%.

Conclusion  
2016 had the highest incidence and may be associated with the increased awareness on screening services at MTRH. Most cases were between 50-79 years and could be attributed to the slow disease progression and delay in early diagnosis. Higher incidences were in males and may be related to susceptibilities to risks factors such as smoking and industrial fumes respectively. There’s need for early diagnosis and disease staging as most cases were at stage iv and unknown.

INCIDENCE AND MORTALITY THYROID CANCER IN QUITO, TIME TRENDS ANALYSIS, 1985 - 2013  
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Background  
There has been a marked increase in the incidence of thyroid cancer worldwide, especially in women. While mortality has remained low and stable in both sexes, this article seeks to describe, in depth, the time trend of incidence and mortality of thyroid cancer in the city of Quito, from 1985 to 2013.

Methods  
Using data from the population-based Quito Cancer Registry, standardized incidence and mortality rates were calculated by age, biological sex and year. Joinpoint regression analysis was performed to estimate the annual percent-age change (EAPC). To evaluate cohort and period effects, Age-Period-Cohort modelling was performed.

Results  
Mortality rates show a stable behavior in both men [EAPC = 0.1%, 95% Confidence Interval (CI): -2.3, 2.8] and women [EAPC: 1.8%, 95% CI: -1.1, 4.8] throughout the period of analysis. The incidence trend is composed of a first period (1986 - 1998) of decrease in men (EAPC = -4.5, 95% CI: -10.9, 2.4), followed by a significant increase (EAPC = 3.5, 95% CI: 1.7, 5.3), followed by a significant increase of around 10% per year of observation from 2000 to 2003. In women, the first period (1986 - 2001) shows a significant increase [EAPC = 3.5, 95% CI: 1.7, 5.3], followed by a significant increase of around 12.9%, 95% CI: 10.0, 15.9]. The APC modelling showed that there was a period effect for both sexes.

Conclusions  
The increase in the last 10 years is striking. This situation places incidence rates in Quito among the highest in the world. Over diagnosis may be a possible explanation for the observed increasing pattern of thyroid cancer incidence. However, some environmental exposures and may also have contributed to the observed increase.

TRENDS IN BREAST CANCER MORTALITY IN COLOMBIA: 1985-2014  
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Background  
Breast cancer is one of the highest incidence in women in Colombia and one of the leading causes of death from cancer worldwide. Analyze trends in the behavior of the mortality rate, one of the most used and valuable indicators, which allows estimating the magnitude of the event in terms of the population at risk, is important for decision makers and public health in general.

Methods  
Descriptive population based study. Mortality databases of the National Administrative Department of Statistics (DANE) were taken from 1985 to 2014, which are disaggregated per year, so it was necessary to consolidate them through a single format in a .sav file, using SPSS V24, and select the homologated cause of death “024”, corresponding to breast cancer. Subsequently, five-year rates were calculated based on the number of cancer deaths and total populations obtained by census data and census projections, standardized by direct method, through Epidat 3.1, considering the world standard population.

Results  
In the five-year period from 1985 to 1989, the adjusted rate of mortality from breast cancer was 45.94 per 100,000, from 1990 to 1994: 51.04, from 1995 to 1999: 53.64, from 2000 to 2004: 60.64, from 2005 to 2009: 61.58, and from 2010 to 2014: 63.76, and the average age at death rose from 57.72 in 1985 to 1989 to 63.66 in 2010 to 2014.

Discussion and Conclusion  
There has been a significant increase in mortality from breast cancer in Colombia, along with an increase in the average age at death, which is probably related to increased life expectancy at birth, and better medical care. Mortality risk in the diagnosis and treatment; however, regional differences must be studied; since Colombia is a multicultural country, with differences beyond the Andean/ Caribbean idiosyncrasies.

CANCER INCIDENCE IN POPULATION AFFILIATED TO ONCOSALUD-AUNA: A DYNAMIC COHORT STUDY  
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Background  
Cancer is one of the leading causes of non-violent death in the world. About 11 million new cases have been estimated worldwide every year. An important proportion occurs in developing countries where cancer registries are still getting reliability. We determined the cancer incidence in a population affiliated to a prepaid insurance system (Oncosalud-Auna) in Peru.

Methods  
We evaluated the cancer incidence in a dynamic cohort from Peruvian population affiliated to Oncosalud – AUNA in 2008 - 2013. Most affiliates were from middle to high socioeconomic status. Information about affiliates was obtained from the institutional registry. The death certificates were calculated based on new cases per person-years of observation. Age standardized incidence rate (ASR) was calculated based on 2011 World Standard Population.

Results  
During the study period 1179,518 affiliates were registered and 1396, 140 had evaluable data. We considered a total amount of 2,611,438 persons-years of observation. Median age of affiliates was 33 years, and 55.7% were women, 8813 new cancer cases were diagnosed (invasive: 8486 and in situ: 327), median age of patients at diagnosis was 65 years. The five most frequent pathologies were breast (28.6%), prostate (30%), colorectal (7.3%), lung (6.6%) and thyroid cancer. The ASR was 189 per 100,000 persons-year (184 and 197 in women and men per 100,000 persons-year, respectively). ASR of breast was 52.7, prostate 56.1, colorectal 13.7, lung 7.9 and cervical cancer 5.8 per 100,000 person-year, respectively.

Discussion and Conclusion  
We observed that the incidence of the most frequent malignancies are similar than reported for the Peruvian population except for cervical cancer, which represents the 15th most frequent neoplasm in our population. This difference is probably related to the socioeconomic status of our affiliates.
**POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA**

## EARLY STAGE CANCER IN PATIENTS AFFILIATED TO ONCOSALUD - AUNA FOR THE PERIOD 2000-2005

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**Background**

Cancer is one of the most important public health issues worldwide. Mortality is still higher among developing and undeveloped countries where most patients are diagnosed as advance stage disease. Prevention and other strategies have been oriented to early detection. In this study, we report the distribution according to clinical stage and site of tumor.

**Methods**

A retrospective study, we reviewed medical records to obtain diagnosis (CIE-10) and clinical stage (TNM) of patients diagnosed at Oncosalud-AUNA in the period 2000-2005.

**Results**

During the study period, 3523 new cases were diagnosed. Median age was 64 years (range 1-94), 18.8% were more than 74 years and 35% were women. The most common neoplasms were: breast (19.6%), prostate (13.7%), colorectal (7.8%), lung (6.8%) and cervix (2.2%), which represents 10th most frequent neoplasm). At diagnosis, 15.6% were diagnosed as advanced stage disease. Prevention and other strategies have been oriented to early detection. In this study, we report the distribution according to clinical stage and site of tumor.

**Discussion and Conclusion**

In our population, most frequent neoplasms were: breast (19.6%), prostate (13.7%), colorectal (7.8%), lung (6.8%) and cervix (2.2%), which represents 10th most frequent neoplasm). At diagnosis, 15.6% were diagnosed as advance stage disease. Prevention and other strategies have been oriented to early detection. In this study, we report the distribution according to clinical stage and site of tumor.

## EVOLUTION AND DIFFERENCES IN CODING BASIS OF DIAGNOSIS IN EUROPEAN CANCER REGISTRIES

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**Background**

Basis of Diagnosis (BD) is important for data quality evaluation. Objective of the study is to highlight BD coding variations between different periods and European areas.

**Methods**

8,812,387 cases from 34 registries (CR) from the European Cancer Information System (ECIS) were analysed - 4 from Northern Europe (NE), 15 from Western Europe (WE), 3 from Eastern Europe (EE), 12 from Southern Europe (SE). Proportions by category of BD were calculated by period for liver, pancreas, lung, colorectal cancer. Proportions were age standardized following the International Cancer Survival Standard.

**Results**

Histology of primary tumour (HPT) was BD in 34% of liver in EE in 1994-2003, and 55% and 48% respectively in 2004-2013. HPT decreased from 44% to 38% in SE and from 60% to 52% in WE. Clinical investigation (CI) increased from 37% to 44% in SE and from 21% to 29% in WE. HTP was stable for pancreas in NE (47% and 51% in the two periods), WE (42% and 38%), and increased in EE (34% and 52%). For lung, HPT or histology on metastasis (HMT) was higher in NE (73% in 1994-2003, 85% in 2004-2013) than in SE (62% and 68%) while it was 78% and 94% in WE. Cytopathology (CP) was BD in SE (20% and 17%) and WE (15% and 18%) than in NE (2% and 1%) (1994-2003, 3% in 2004-2013). HPT was more than 90% everywhere for colon-rectum in 2004-2013.

**Discussion and Conclusions**

BD distribution differences were observed, except for colon-rectum. Observed CI increase in liver could be due to improvements in imaging, lowering the proportion of HPT cases. Low HPT in pancreas could be due to the difficulty to perform biopsies. Different HPT and CI proportions for sites like lung could derive from distinct diagnostic approaches.

## COMPREHENSIVE ANALYSIS OF CANCER URINARY ORGANS PROFILE IN MALE FROM PBCR-MERIDA MEXICO

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**Background**

In males, prostate, bladder and kidney cancer are the most incident cancers for urinary organs. Particularly, kidney cancer has been associated with urolithiasis and obesity, Tu nalan state is characterized for its high prevalence for both diseases. The aim was to analyze the cancer urinary organs profile in male from preliminary results of PBCR-Merida Mexico.

**Methods**

This is a descriptive study from preliminary results, collected during the three years of PBCR-Merida implementation. We analyzed the profile of cancer urinary organs (C61.9, 64.6-68.9) in males coded by ICD-0-3, captured and validated on CanReg 5 software. ASR/100,000hab was estimated by direct method with world standard population.

**Results**

During January 2015 to Dec 2017 we collected 3322 incidence cancer cases, 1,254(3.6%) of them were males and 3039 (9.4%) belong to urinary organs. Basis of diagnosis were 7.6% clinical, 73.6% morphologic verification and 18.8% BD. Prostate cancer was the main tumor affecting males (mean age 70,5±17,9y) with 2416.0/100,000hab and a leading morphology of acinar cell carcinoma (8530/3) with 131 (44.2%) cases. Kidney cancer is ranking in second place of urinary organs, and it is 8th male most common cancer with 581,4/100,000hab and a leading morphology of well adenocarcinoma (8370/3). Finally, bladder cancer is shown 41 (3.0±10,0hab) with the mean age of 66.0±11.9yr and 41.5% transitional cell carcinoma (8120/3).

**Discussion and Conclusion**

Our preliminary results suggest that prostate and bladder have a similar behavior as the regional and worldwide results. However, kidney cancer in males of PBCR-Merida is higher than the worldwide results probably because of the high incidence of risk factors such as urolithiasis and obesity in our community, thus necessary to develop specific studies.

## SURVIVAL BY RISK OF CERVICAL CANCER AND FACTORS ASSOCIATED TO SURVIVAL IN MALLORCA 2006-2012

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**Background**

Cervical cancer is the seventh most frequent cancer in women in Mallorca. Incidence is decreasing from the last twenty years. Objectives: to ascertain the survival by stage of cervical cancer in Mallorca, to explore factors associated to survival and, secondly, to know the distribution of cervical cases by stage.

**Methods**

Retrospective follow-up study of cases diagnosed with cervical cancer between 2006 and 2012 trough Mallorca Cancer Registry. Cases identified only by death certificate were excluded. Age; date and method of diagnosis; histology (ICD-O-3rd edition), T, N, M stage (UICC 7th edition), date of follow-up or death and cause of death were collected. Follow-up started with date of diagnosis and ended 31 of December 2015. Multiple imputations were used for missing stage cases. Actuarial and Kaplan-Meier methods were used for survival analysis. Cox regression models were built to identify factors that explain and predict survival.

**Results**

322 cases were identified, 80.4% were squamous carcinomas, 15.6% adenocarcinomas and the rest other histology. Stage was missing in 8.4% of cases. After multiple imputations, 42.6% were in stage I, 24.0% in stage II, 19.9% in stage III and 13.4% in stage IV. Survival was 63% at 5 years. 92% for women diagnosed in stage I, 59% in stage II, 37% in stage III and 18% in stage IV. Age and stage were the only factors associated to survival.

**Conclusions**

Cervical survival depends on age and stage. Two of three women diagnosed with cervical cancer in Mallorca are in stages I or II at the diagnosis.
Background
Colorectal cancer is a hallmark of the epidemiologic transition and stands for the replacement of infection-related cancers in countries with growing economic status. We aim to calculate colorectal cancer incidence and mortality age-standardized rates and age-specific rates to further assess trends in a mid-sized Brazilian city, to verify whether the patterns of change are consistent with the epidemiologic transition.

Methods
The databases from the Aracaju Cancer Registry (the Brazilian Mortality Information System [SIM]) from 1996 - 2013 were used to calculate incidence and mortality rates, considering all invasive tumors, ICD-10: C18-C21. Aracaju HDI is 0.770. Trends were assessed by calculating the annual percent change (APC) using the Joinpoint Regression Program.

Results
For the period of study, 1,194 (male: 460, female: 734) incident cases, and 423 deaths (male: 173, female: 248) were assessed. Distribution by topography were as following: male: colon 63%, rectum 25%, recto-sigmoid junction 8.3% and anus 3.7%; female: colon 50%, rectum 25.7%, recto-sigmoid junction 8.3% and anus 25.7%. For the period of study, 1,194 (male: 460, female: 734) incident cases, and 423 deaths (male: 173, female: 248) were assessed. Distribution by topography were as following: male: colon 63%, rectum 25%, recto-sigmoid junction 8.3% and anus 3.7%; female: colon 50%, rectum 25.7%, recto-sigmoid junction 8.3% and anus 25.7%.

Discussion and Conclusion
The population of study showed rising incidence rates for colorectal cancer, characteristic of the epidemiologic transition. Mortality trends showed stabilization. Health policy makers should be aware and discuss control strategies.
POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA

EPIDEMIOLOGIC FEATURES OF CANCER CASES DIAGNOSED AND/OR TREATED IN NATIONALLY DESIGNATED CANCER CARE HOSPITALS

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Background
As of 2018, there are 401 nationally designated cancer care hospitals in Japan. These hospitals were chosen by the Ministry of Health, Labour and Welfare to provide cancer care throughout Japan. Therefore, their standard of care is equivalent regardless of location. The aim of this study was to clarify the epidemiologic features of cancer cases diagnosed and/or treated in nationally designated cancer care hospitals using eight population-based cancer registries.

Methods
We used incidence data of the year 2012 from eight population-based cancer registries. Cases were grouped into four categories: 1. diagnosed in a nationally designated cancer care hospital, 2. diagnosed and treated in a nationally designated cancer care hospital, 3. treated in a nationally designated cancer care hospital, and 4. neither diagnosed nor treated in nationally designated cancer care hospital. The epidemiologic features of the cases between the different categories were compared.

Results
A total of 188,084 cases were collected from population-based cancer registries in each of the following eight prefectures: Aomori, Yamagata, Tochigi, Ishikawa, Aichi, Osaka, Wakayama and Hiroshima. Of them, 53% of the cases were diagnosed and/or treated at the nationally designated cancer care hospital, 55.6% at Aomori, 67.5% at Yamagata, 67.4% at Tochigi, 51.8% at Ishikawa, 53.9% at Aichi, 44.6% at Oska, 67.7% at Wakayama, and 59.9% at Hiroshima. Younger patients tended to be diagnosed and/or treated in nationally designated cancer care hospital. This trend appeared across all eight prefectures.

Discussion and Conclusion
We clarified the coverage rate of nationally designated cancer care hospitals over all areas. Age is an obvious factor related to visiting a nationally designated cancer care hospital. When considering a patient’s age, we also need to observe in visiting a nationally designated cancer care hospital. Age is an obvious factor related to

FIRST-LINE SYSTEMIC THERAPY FOR ADVANCED NSCLC IN SOUTHERN PORTUGAL – PATTERNS AND SURVIVAL OUTCOMES

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Background
In Portugal, the current landscape in treatment and outcomes is covered in small cell lung cancer (NSCLC) are not fully known. In this study we present outcomes in systemic treatment-naive patients with advanced NSCLC who received first-line systemic therapy (1L) in a real-world context using a population-based cancer registry.

Methods
A historical population-based cohort study was designed considering all systemic treatment-naive patients aged ≥18 years diagnosed with stage IIB/IV NSCLC during 2013-2014, resident in Southern Portugal. Cancer Registry Influence area at diagnosis and that initiated 1L during 2014 or the first half of 2015. Patients were excluded if they were previously treated with surgery or curative radiotherapy. The primary outcome considered was overall survival (OS) and secondary outcomes were progression-free survival (PFS). Patients were followed until death or last known contact. Database closure was set on 31/12/2017. Survival outcomes were assessed using Kaplan-Meier analysis.

Results
A total of 578 patients were enrolled. Most patients were male (71.43%), median age (range) was 65 years (34-88) and the majority of patients had a performance status of 0 (64.44%). The most prevalent histology was adenocarcinoma (71.97%) and most patients presented stage IV (96.10%). Median age at diagnosis was 68.3 months, with 98.79% of the patients presented stage IV (86.16%). Median OS and PFS were 8.59 and 4.46 months, respectively. Median OS and PFS were 8.53 months (IQR 3.77-18.03) with 98.79% presented stage IV (86.16%). Median follow-up (range) was 65 years (34-88) and the majority was diagnosed between January 2010 and December 2010, from the RCLM. The variables studied were: age, sex, diagnostic completeness, histological variety, treatment, vital status at 5 years after diagnosis. We used the Kaplan-Meier analysis for global survival at five years and the Log-rank test for the comparison of survival curves according to

LEUKAEMIA IN OLDER ADULTS – ANALYSIS OF OVERALL SURVIVAL IN METROPOLITAN LIMA, LIMA, PERU

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Background
Leukaemia in older adults is a haematological neoplasm, usually severe due to several factors, where the age of the adult is a factor for a poor prognosis. We propose an analysis of five-year survival, in this age group, with information from the RCLM.

Methods
We used information from patients older than 60 years diagnosed between January 2010 and December 2012, from the RCLM. The variables studied were: age, sex, diagnostic completeness, histological variety, treatment, vital status at 5 years after diagnosis. We used the Kaplan-Meier analysis for global survival at five years and the Log-rank test for the comparison of survival curves according to sex.

Results
374 patients over 60 years old, were diagnosed with Leukaemia in Metropolitan Lima for the period 2010 to 2012, representing 49.4% male and 50.6% female. The average age was 74 years, with a histological verification of the 88.2% of the total cases, the most frequent histological variety was Myeloid Leukaemia, with 50.8% of the cases, followed by Lymphoid Leukaemia’s with 25.4% and Non-Specified Leukaemia’s with 23.8%. 53% of the patients received some type of treatment such as Chemotherapy, Radiotherapy, Surgery and others not specified. Five years after the diagnosis, survival of 12.3% was observed in both sexes, the analysis using the Log-rank test showed that the differences between the survival curves according to sex are not statistically significant.

Conclusion
Leukaemia in elderly patients of both sexes, from Metropolitan Lima and Callao, denotes a low survival rate, even though more than 50% of the patients diagnosed received some type of treatment, which reinforces the lethality of the disease in this age group.

ENDOCRINE DISRUPTING CHEMICALS AND CANCER: A SYSTEMATIC REVIEW OF BISPHENOL-A EFFECTS ON BREAST CANCER

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Background
Bisphenol-A is an endocrine disrupting chemical found in many products of daily use with widespread population exposure since the 1990s. Breast cancer has shown an increasing incidence in recent decades. Aim: to review the literature analyzing the effects of Bisphenol-A on breast cancer risk, according to its concentrations of sources exposure in the population.

Methods
A comprehensive systematic review of Bisphenol-A and its effects on breast cancer was performed. Articles published from 2000 and 2017 have been reviewed. The databases used were PubMed, EMBASE, Science Direct, LILACS, and Embase. The boolean operators ‘AND, ‘OR’ and ‘NOT’ were used and the keywords for the search were: Bisphenol-A, ‘breast cancer’, ‘exposure levels’, ‘exposure sources’, ‘epidemiology’, ‘humans’, ‘animals’ and ‘health’.

Results
11 articles were selected. The main sources of exposure were: plastic bottles, canned foods and drinks, recycled thermal paper, and dust. The highest concentrations of Bisphenol-A were found in packages of foods, canned foods and beverages. Bisphenol-A has been detected in blood samples in >90% of the US population, although with levels not exceeding the tolerable daily intake. The highest concentrations of Bisphenol-A were found in packages of foods, canned foods and beverages. Bisphenol-A has been detected in blood samples of pregnant women and children.

Discussion and Conclusion
Bisphenol-A is an endocrine disrupting chemical found in many products of daily use with widespread population exposure since the 1990s. Breast cancer risk, according to its concentrations of sources exposure in the population.
POSTER - THEME 2: DESCRIPTIVE EPIDEMIOLOGIC STUDIES USING REGISTRY DATA

CANCER EPIDEMIOLOGY IN ADULTS CARE IN A CANCER CARE REFERENCE CENTER IN COLOMBIA

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Fundación Valle del Lili, Cali, Colombia

Background

Fundacion Valle del Lili (FVL) is a high complexity hospital that serves as a reference center for the comprehensive management of cancer patients in southwestern Colombia. Despite this, there are no hospital-based cancer registries in the region. The main aim is to describe the cancer epidemiology of patients cared at FVL.

Methods

A descriptive cross-sectional study was carried out using data from an institutional database. Patients diagnosed with cancer older than 18 years old were included. Basal-cell and squamous-cell carcinomas of the skin, in situ carcinomas of the uterine cervix, neoplasm of uncertain behavior, benign lesions, and precancerous conditions were excluded. Informed consent wasn’t request because the data was collected from a pre-existing database. Clinical and socio-demographic data were collected and the data obtained were stored in a database. All calculations were conducted using STATA software.

Results

A total of 9579 cases of cancer were registered and included in the analysis with median age was 61 IQR (46-76). 63.98% were women (n=6514) and 36.92% were men (n=3057). Breast (n=2052, 21.42%), prostate (n=1112, 11.61%), hematolymphatic (n=964, 10.06%), breast (n=2052, 21.42%), prostate (n=1112, 11.61%), hematolymphatic (n=964, 10.06%), followed by the esophagus, anus and small intestine. Esophagus, anus and small intestine. Esophagus, anus and small intestine. Esophagus, anus and small intestine.

Discussion and Conclusion

Colombia as a middle-income country presents, for both sexes, prostate cancer as the most frequent type of cancer followed by breast cancer. The most frequent cancer for both sexes in developed countries is breast cancer, similar to the data presented by FVL; respect to low-income countries, the highest number of cancer cases corresponds to lung cancer, which differs from FLV statistics. The creation of a hospital-based cancer registry in FVL is a priority for understanding the cancer situation in Colombia.

DIGESTIVE TRACT RARE TUMORS IN MENDOZA, ARGENTINA. INCIDENCE 2009-2013 AND MORTALITY 2007-2015

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Background

Rare cancers (RC) are informed as low incidence in the general population compared to other types. There is little knowledge about their natural history and therapeutic response. The objective of this work was to describe digestive tract rare cancers incidence and mortality in Mendoza.

Methods

A descriptive study of 9 digestive tract sites with incidence less than 6 per 100,000 inhabitants. We calculated incidence age-standardized rates calculated by direct (ASR 2007-2016) and indirect methods (standardized mortality ratio – SMR 2007-2016). We defined as RC those with an incidence of less than 6 per 100,000 people per year. The aim of this study is to compare patterns of RC incidence in Argentina and to explore their impact on the population.

Results

Incidence was obtained from the population-based cancer registries “Provincial Registry of Tumors of Mendoza” (PTRM) and mortality from the National Ministry of Health. Crude incidence rates were analyzed for women by sex, age, and morphology. Age-standardized rates calculated by direct (ASR 2007-2016) and indirect methods (standardized mortality ratio – SMR 2011-2015) by sex for esophagus and gallbladder cancer using world standard population and projections and world standard population. Mortality trends were analyzed by Joinpoint regression.

Rare cancers (RC) affect a very small number of people. A cancer might also be considered rare if the topography is unusual or if the cancer is an unusual type and needs special treatment. We defined as RC those with an incidence of less than 6 per 100,000 people per year. The aim of this study is to compare patterns of RC incidence in Argentina and to explore their impact on the population.

Methods

A descriptive study of 9 digestive tract sites with incidence less than 6 per 100,000 inhabitants. We calculated incidence age-standardized rates calculated by direct (ASR 2007-2016) and indirect methods (standardized mortality ratio – SMR 2011-2015) by sex for esophagus and gallbladder cancer using world standard population and projections and world standard population. Mortality trends were analyzed by Joinpoint regression.

Discussion and Conclusion

A study of cancer survival rates in Busan, Korea region according to SEER stages

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Background

The number of cancer incidence showed annual average of 3.6% for a period from 1999 to 2011. When people survive up to an average life expectancy, two out of five people for men and one out of three people for women will have a risk of cancer.

Methods

2012 from both the National Statistical Office’s mortality data and the resident registration computer network of the Ministry of Security and Public Administration, among those cancer patients registered in Busan Regional Cancer Registry from 2007 to 2011.

Results

The number of cancer incidence in the Busan region has been on the increase every year, for example, in 2008 from 12,032 people in 2007. The number of people with cancer increased by 35.2% in 2011, compared to 2007. Examining the number of people with cancer according to SEER stage of each cancer, in the case of stomach cancer, Localize has the highest percentage of 56.8% with 6,534 people, in the case of thyroid cancer, Localize has the highest and Distant 1.5%, the lowest, in the case of lung cancer and pancreatic cancer. Distant has 44.7% and 41.8% each, the highest. It can be seen that lung and pancreatic cancer are not detected early, but detected after they have developed to some extent.

Conclusion

Comparing the survival rate of each region in Busan according to_1359drinking rate and smoking rate, the lower the smoking rate and smoking rate, the higher the survival rate are shown at both Localize and Regional, but show no significant relationship at Distant. As a result, a smoking rate not only affects the development of cancer, but it can also be seen that there is no statistical relationship between the survival rate and smoking rate.
THE TREND OF LEUKAEMIA MORTALITY OF THE RESIDENTS IN TIANJIN, CHINA, 1999 TO 2015

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Background
To explore the trends and distribution of leukaemia between sexes, ages and urban-rural areas from 1999 to 2015 in Tianjin, China.

Methods
Leukaemia mortality data in 1999-2015 were from Tianjin population based mortality surveillance system. Standardized leukaemia mortality rates were calculated, adjusted for age using the year Segi’s world standard population. Joinpoint regression and Cochran-Armitage test were used to determine the statistical significance of differences in mortality trends.

Results
Leukaemia mortality in Tianjin increased from 1999 to 2015 with the crude mortality rate of 3.47/100 000 to 4.28/100 000 (P<0.001, annual percent change (APC)=1.30%) and decreased with the standardized mortality rate from 3.15/100 000 to 3.01/100 000 (P=0.025, APC=0.65%). The standardized leukaemia mortality rate flatted from 3.79/100 000 to 3.13/100 000 (P=0.079, APC=0.68%) in male and from 2.50/100 000 to 2.89/100 000 (P=0.173, APC=0.66%) in females. Mortality rate of male was higher than that of female. The standardized leukaemia mortality decreased from 3.47/100 000 to 3.23/100 000 (P=0.006, APC=1.12%) in urban and flatted from 3.02/100 000 to 2.95/100 000 (P=0.667, APC=0.17) in rural. There was no statistical difference between mortality in urban and in rural areas. The mortality of leukaemia was higher in infants, and increased gradually with the increase of age. The median age of leukaemia death in Tianjin increased from 47 year-old in 1999 to 61 year-old in 2015 (P<0.05). There was no statistical difference between the median ages of men and women, and it was higher in urban area than that in rural area (P<0.05).

Discussion and Conclusion
Leukaemia crude mortality increased and standardized mortality decreased and the median age of leukaemia death in Tianjin increased from 1999 to 2015 in Tianjin. Further efforts to reduce leukaemia mortality in Tianjin are needed; special attention should be focused on the children, aged and male.
POSTER - THEME 3: CHILDHOOD CANCER

AN ESTIMATE OF THE NUMBER OF PEOPLE IN ITALY LIVING AFTER A CHILDHOOD CANCER
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Background
Childhood cancer survival grew during the last decades. Consequently there are an increasing number of adults requiring appropriate follow-up care due to possible late effects of treatments many years after cancer cure. This study contributes to the ongoing discussion about the design and delivery of care to long-term childhood survivors, by evaluating their number, features and age distribution in Italian areas covered by cancer registration.

Methods
We computed 15-year prevalence using data from 15 Italian population-based cancer registries (covering 19% of population) and estimated the completeness of prevalence of people living after surviving childhood cancer (age 0-14), by using the CHILDREPREV method, implemented in the COMPREV software.

Results
Over 44,000 persons in Italy were estimated alive at January 1st, 2010 after a cancer diagnosis during childhood. This number corresponds to 73 per 100,000 and to 2% of all prevalent cases. Males were 54% and 64% survived after being diagnosed before 1995, the start of the observation period. A quarter of all cases were diagnosed with brain and CNS tumors, a quarter with acute lymphoid leukemia, one fifth with solid tumors of all cases were diagnosed with brain and CNS tumors, a quarter with acute lymphoid leukemia, one fifth with solid tumors and 5% with retinoblastoma.

Discussion and Conclusion
This study was to describe the epidemiology of Retinoblastoma in Childhood Cancer. The quality data of Retinoblastoma was critical to the verification of these cases. The most common cancers were Leukemia (28.9%) of brain and CNS (16.9%) lymphoma [11.3%] renal (5.8%) and bone cancers (5.0%). Amman gov showed highest occurrences (55.3%) of the cases followed by Zarqa [11.5%] Irbid [11.4] and Lowest in Tafile (0.9%) Male to Female ratio was 1.23.:1 and the crude incidence rate were 98/100000 (male 104, female 90).

PEdiATRIC CANCERs BURDend IN jORDan, 2011-2015, THE CHANCE FOR A CURE
Dr Omar Nimri
Jordan Cancer Registry, Amman, Jordan

Background
The incidence and the burden of cancer are increasing worldwide, however, the burden of childhood cancer is especially high in developing countries. Although most children with cancer live in low-and-middle-income countries, measurements of childhood cancer burden in such countries have been delimited and the crude incidence rates segregated by age and sex.

Method
We used the PBCR of Jordan exploring the burden of childhood cancers among the age group 0-15 years in the Jordanian population.

Results
There were 21 male cases of RB between the ages 0-14 years with a crude incidence of 10.1/100000 (male 12, female 9). The overall crude incidence of RB was 2.4/100000 and in Jordan was 2.2/100000.

Conclusion
The burden of childhood cancer and the pattern of childhood cancer in Jordan seems to be like other countries in our region, this information will aid advocacy for national strategies aimed at improving outcomes for Jordanian children with cancer for a better chance: the chance for a cure, the chance to live.

THE BURDEN OF RETINOBlastOMA IN CHILDREN AGE 0-14 YEARS IN WESTERN KENYA
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Background
Retinoblastoma (RB) is among the least discussed cancers in Kenya. However, its morbidity and mortality burden is ever increasing in developing countries. Here we describe the incidence burden of retinoblastoma among children aged 0-14 years in western Kenya.

Methods
Data from Eldoret cancer Registry for the period 2011 to 2016 was analysed. We report total number of cases and crude incidence rates segregated by age and sex.

Results
A total of 50 cases were recorded across all age groups for the period 2010-2014. 29 of these were male while 21 were female. The overall crude incidence of RB was 5.4/100000 and the crude incidence rate was 5.5/100000 (0-4yrs) and 0 for age groups 5-9 and 10-14 years. There were 21 male cases of RB between ages 0-14 years with a crude incidence of 2.9/100000 (0-4yrs), 0.4/100000 (5-9 years) and 0 (10-14 years).

Conclusion
More females than males bore the burden of retinoblastoma between the ages 0-4 years and the trend generally points towards more females than males affected in the age group 0-14 years.
CHILDHOOD CANCER 18 YEARS OF EXPERIENCE IN SOLCA GUAYAQUIL. 2000 TO 2017

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Introduction
Childhood cancer is rare but remains an important cause of death and chronic morbidities in infants. SOLCA and all its hospitals nationwide are designated oncology hospitals for cancer treatment in children and adults. Guayaquil is the most populated city in the country, and SOLCA Guayaquil hospital treats almost 75% of all the cases of childhood cancer in the city, the rest remain in public hospitals. The goal was to determine paediatric cancer frequency within children ages 0 to 14 years old.

Methods
This was an observational descriptive study, using Hospital-Based Population Registry data of children aged 15 under and diagnosed with any neoplasm between years 2000 to 2017, and classified according to gender, age group, and to the International Classification of Childhood Cancer (ICCC). With this information a database was constructed with the variables gender, age group and neoplasm.

Results
2611 cancer cases were recorded during this period, with an average of 145 cases per year, 56% in males and 44% females. According to age, 37% of cases were in ages 10 to 14, 33% in 5-9 and last 30% under 4 years old. Leukaemia was the most frequent neoplasm during the first 10 years, in both genders with 50%, followed by Central Nervous System neoplasms with 13%, and Lymphomas 10%. There was an average increase of 6% until 2015.

Discussion and Conclusions
Since the year 2000 up to 2017 there has been a 2% fold increase in case numbers, mainly in the 5 to 9 years old group although the majority of cases were registered in the 10 to 14 group, probably due to late diagnoses in some cases. Years 2016 and 2017 were notably affected by 2016s earthquake, after which the paediatric wards capacity was downsized 40%, mainly affecting hospitalization.

THE TORONTO GUIDELINES FOR STAGING CHILDHOOD CANCERS: THE EUROPEAN PILOT STUDY ON NEUROBLASTOMA AND NEPHROBLASTOMA

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Background
The Toronto consensus principles and guidelines (Lancet Oncol, 2014) provides recommendations on which staging system should be adopted by population-based cancer registries for each of the major childhood malignancies. Within the European Joint Action on Rare Cancers (JARC), a pilot study is now testing how the Toronto recommendations can be applied by population-based cancer registries in order to perform survival analysis by tumour stage.

Method
Along with the cancer registries a protocol has been agreed to collect and stage information for the definition of stage for consecutive years of survival data. Wilms tumours and other nephroblastomas were included in the pilot study (2010-2015) for more small populations). Age, sex, and neoplasm registry region from European countries contributed to the study.

Results
From the preliminary analyses, about 94% of both tumours were staged, according to the more detailed staging criteria (Tier 2). Clinical and pathological criteria were used for about 90% of cases. Eleven percent of Wilms tumours and 56% of nephroblastomas were diagnosed with stage IV or distant metastases at diagnosis. Actually, localized disease for Wilms tumours and metastatic disease for nephroblastoma were the most prevalent stages, in particular for nephroblastoma, differences in the distribution of stage by country were notified.

Conclusions
The interest of the international community of paediatric oncologists in increasing awareness towards population based studies. Since there are now specific recommendations (Toronto guidelines), the inclusion of stage in routine data collection will facilitate research between epidemiologists and clinicians. We suggest to: 1) collect stage at diagnosis, in a prospective way for childhood cancers, which are rare tumours, according to the Toronto guidelines and 2) promote, within the International Cancer Registries Associations, initiatives that facilitate the collection of and quality of staging information.

CHILDHOOD CANCER IN THE EUROPEAN UNION: CANCER REGISTRY DATA IN THE EUROPEAN CANCER INFORMATION SYSTEM

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Background
Cancer in children is rare, but it contributes considerably to childhood mortality and late effects. Computation and dissemination of reliable indicators to monitor cancer burden in the overall population as well as in children is the goal of the European Cancer Information System (ECIS), developed by the European Commission’s Joint Research Centre (JRC) together with the Euro Network of Cancer Registries (ENCIR). In this exploratory study, coverage of childhood cancer registration and incidence in the European Union (EU-28) were analysed.

Methods
Childhood cancer (age 0-14 years) data were obtained from 107 general cancer registries [CRs] and 3 childhood CRs in EU-28. The 3rd edition of the International Classification of Childhood Cancer (ICCC-3) was used for grouping childhood cancers, which are rare tumours, according to the Toronto guidelines and 2) classification (Lancet Oncology, 2016) for Wilms tumours and metastatic disease for Wilms tumours and metastatic disease for nephroblastoma. The cells were staged, according to the European Commission’s Joint Research Centre (JRC) guidelines for staging childhood cancers. The extent of the cancer burden creates a gap in the availability of comparable data on the international patterns of childhood cancer.

Results
Data from 19 cancer registries in 11 countries in LA were included in the analyses for the age group 0-14 years. The populations covered by the contributing registries represented 11.3% of total LA childhood population. The overall WSR was 132.7 per million, based on 24,476 cases. There were variations between the contributing registries, but leukaemia (WSR 49.7), CNS tumour (WSR 23.0) and lymphomas (WSR 16.6) were the most frequent tumour types on average.

Discussion and Conclusion
As a result of the advances in the control of communicable diseases, paediatric cancer is gaining importance despite its relatively low incidence. The extent of the cancer burden before the age of 15 years is unknown in many low and medium income countries, which creates a gap in the availability of comparable data on the international patterns of childhood cancer.

INCIDENCE OF CHILDHOOD CANCER IN LATIN AMERICA 2001-2010

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Background
As a result of the advances in the control of communicable diseases, paediatric cancer is gaining importance despite its relatively low incidence. The extent of the cancer burden before the age of 15 years is unknown in many low and medium income countries, which creates a gap in the availability of comparable data on the international patterns of childhood cancer.

Methods
Population-based cancer registries were identified through the IACR and other links. Selected registries and data from the London Great Ormond Street Institute of Child Health (LONDON) and the World Health Organization (WHO) databases were included in the present analyses. Neoplasms were classified according to the third edition of the International Classification of Childhood Cancer (ICCC-3). Incidence rates were age-adjusted to the world standard population (WSP).

Results
Data from 19 cancer registries in 11 countries in LA were included in the analyses for the age group 0-14 years. The populations covered by the contributing registries represented 11.3% of total LA childhood population. The overall WSR was 132.7 per million, based on 24,476 cases. There were variations between the contributing registries, but leukaemia (WSR 49.7), CNS tumour (WSR 23.0) and lymphomas (WSR 16.6) were the most frequent tumour types on average.

Discussion and Conclusion
As a result of the advances in the control of communicable diseases, paediatric cancer is gaining importance despite its relatively low incidence. The extent of the cancer burden before the age of 15 years is unknown in many low and medium income countries, which creates a gap in the availability of comparable data on the international patterns of childhood cancer.

The observed incidence rates are lower compared with the combined data across all IARC-3 registries (WSR 146.6 per million, based on 288,649 cases), the USA White Hispanic (WSR 170.5) or USA Hispanic White (WSR 163.6) populations. The differences in rates may be attributed primarily to the lower rate of diagnosis, although cancer registration completeness or risk factors should also be considered. Availability of high-quality data is important to develop, implement, and assess paediatric cancer control strategies.
THERAPEUTIC ITINERARY AND REGISTRATION OF CHILDHOOD CANCER IN RECIFE, PERNAMBUCO, BRAZIL

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Background
Cancer is the first cause of death due to illness in Brazil in the population between 5 and 19 years old. For the year 2016 were estimated about 12,600 new cases among childhood cancer in Brazil, being more than 50% corresponding to solid tumors. Objective: To identify the sociodemographic profile along the clinical itinerary of children and adolescents (0-19 years old), diagnosed with tumors accompanied and / or in treatment in two reference units of the State of Pernambuco - Brazil, by the Hospital-based registries.

Methods
This is a qualitative exploratory study with children and adolescents diagnosed with solid tumors, enrolled in Hospital-based registries for Hospital do Instituto de Medicina Integral Professor Fernando Figueira and the Hospital Universitário Oswaldo Cruz in Recife, between the years of 2013 and 2014. We used the descriptive statistic for sociodemographic variables and for the interviews were analysed based on the Bardin Thematic Content Analysis.

Results
In the study 33 patients were followed. The interview showed a predominance of males 60.6% [20], in the preschool age group 30.3% [10], that is, in the state of Pernambuco, 87.9% [29], and 36.4% [12] had the Primary Health Care with their first therapeutic choice. Among the five Thematic Groups considered, we have noticed a gap between public health services and an early cancer diagnosis in children and adolescents, either due to a lack of sensibility by professionals towards this hypothesis or to the fragile support to diagnostic and logistical network.

Discussion and Conclusion
It is important to emphasize the strengthening of Primary Health Care, not only with programs that increase access to health services, but also in investments in the quality of service and in the referral of users with warning signs for this neoplasm between the different levels of attention.

POSTER - THEME 3: CHILDHOOD CANCER

ASSESSMENT OF CANCER REGISTRY QUALITY IN BRAZIL: THE COST nanoparticles

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Background
Between the different levels of attention.

Methods
The cost nanoparticles were calculated for the implementation and maintenance of the registry in Brazil. The costs were related to the expenses for the implementation of the registry, including the data collection, data management, training, and the operational costs of the registry.

Results
The cost nanoparticles were calculated as follows: 65,789 to 91,577 which accounted for about 40% increased with the same number of years. Over 15 months the registry managed to use.

Conclusion
The data quality control in a comprehensive way would contribute to a good data surveillance. The National Cancer Registry is crucial and important to streamline the modes operandi of handling the registry effectively.
A STUDY ON FACTORS AFFECTING VALIDITY OF NATIONAL CANCER REGISTRY IN TAIWAN

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Background
Although staging and treatment information has been used through the cancer registry system for more than 10 years, but its quality of coding in cancer staging and treatment data has not been discussed. This study assessed the accuracy rate for staging and treatment by site visit and the influence of hospital and the experience of cancer registrars on staging and treatment data accuracy.

Method
In this retrospective chart review study, 392 randomly selected medical records from 14 hospitals were re-abstracted by experienced abstractors; the senior cancer registrar reviewers had compared each chart with data from the TCR to assess accuracy rate for staging and treatment. The accuracy rate and multiple regression analysis were used to compare among hospitals and qualified cancer registrars.

Results
The accuracy rate was high in pharynx, esophageal, rectal, breast, and prostate cancers, and low in ovarian cancer for clinical and pathological staging. For treatment, the accuracy rate was high for colorectal, lung, and ovarian cancer but low for any type of lymphoma. After adjustment for the experience of the qualified cancer registrar, low-caseload hospitals had a significantly lower clinical staging accuracy rate than that of high-caseload hospitals. When stratifying by staging and surgery type after adjustment for caseload, the accuracy rate was found for cancer registrars who had progressed from basic to advanced licenses within 5 years of graduating.

Conclusions
The reliability of staging data in the TCR is affected not only by the cancer type but also by the number of patients treated in hospital. Moreover, the experience of cancer registrar strongly influences accuracy rate, especially in clinical staging and surgery type. We recommend that cancer registrars with basic licenses upgrade to advanced licenses as soon as possible. Furthermore, continuous education regarding cancer site specific coding skills and rules should be emphasized.

HOSPITAL CANCER REGISTRY AS DATA SOURCE OF THE NATIONAL CANCER REGISTRY

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Background
Hospital based cancer registries (HBCR) collect and maintain data of patients diagnosed and/or treated for cancer at hospitals to improve clinical care and bring information for administration purposes. The HBCR of the National Oncology Institute (RHIC-ION) of Panama was designed to obtain clinical description of the disease, characteristic of tumors, treatments, follow-up and death offering data to develop clinical research and bring data of approximately 3500 cancer cases by year to the National Cancer Registry that represent around 50% of the total cancer cases of the country.

Methods
A system methodology supports the design of RHIC-ION. Data is obtained from medical records, pathology, chemotherapy, radiotherapy, surgical and other departments. Patients are identified by data of last contact and vital status. Mortality system of the country was analyzed to have quality indicators. Date of death is obtained from national mortality system and population data base (TE) and cancer data base (PWM). The mortality and cancer data are identified and a quality control process is in practice before transmitting data to the PBCR.

Results
RHIC-ION is supported by NAEL system developed by phases and in practice since January 2012. Topography and morphology codification of tumors is done at the RHIC-ION. NAEL have five modules: registration, treatment, diagnosis, administrative/coding, mortality and follow-up. Record linkage of mortality data base (2012 to 2016) with cancer registry data base (2012-2013) allows obtaining date of death. Population data base (TE) was used to verify deaths to make cases precision. It is under process to provide the best data for NCR and low rates of ‘loss of follow-up’ for survival studies.

Conclusion
RHIC-ION of the National Oncology Institute in Panama bring better data to enhance exhaustivity of the National Cancer Registry. The use of mortality and population data bases since a hospital registry could be an example for other countries and is a solution to ameliorate data analysis.
POSTER - THEME 4: CHALLENGES (AND SOLUTIONS) TO CANCER REGISTRATION

MANUALS, PROCEDURES AND GOOD PRACTICES IN THE DEVELOPMENT OF POPULATION-BASED CANCER REGISTRY MERIDA-MEXICO

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Background

Since 1940, Mexico began an effort against cancer. In 1982, the Government authorized the creation of National Cancer Registry without success. It was until 2016 when Merida city started with the implementation of the first Population-based Cancer Registry (PBCR-Merida) in collaboration with IARC-WHO following their guidelines. We hereby described procedures and good practices in the development of the first cancer PBCR in Mexico.

Methods

PBCR-Merida was developed as a research project in three phases. The first one begun in 2014 with collection of cancer cases at UMAE-Merida, the most important oncolgical center in the southeast of Mexico. It provides healthcare to more than 50% of cancer cases living in this city. By 2015, collection was in 20 public sources. Second phase took place between 2016 and 2017 with the inclusion of 16 public and private sources and a procedures manual with a mentorship program. Finally, the first phase started in 2018, when we consolidated and increased to all sources with support on the Ministry of Health authorities.

Results

The implementation of PBCR-Merida motivated the modification of the General Health Law (Chapter III Bis, Title VIII) for the creation of National Cancer Registry with Population-based. In addition, as a part of the implementation of PBCR-Merida developed the manuals of procedures for the opening of sources, collection, coding, capture, CanReg5 customized, confidentiality and data analysis. PBCR-Merida became a national model training and implementation of PBCR in six more cities around country.

Discussion and Conclusions

Implementation of PBCR-Merida is an important public health effort that will contribute to a better cancer control. By the end of 2018 it is planned to complete the exhaustivity for Merida city, and increase the implementation of registries in Mexico. It is necessary to raise awareness among the authorities of the strategic importance of cancer registration in Mexico.
RELIABILITY IN CAUSE OF DEATH BETWEEN HOSPITAL CANCER REGISTRY AND MORTALITY DATABASE, SAO PAULO, BRAZIL

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Background
In order to enable cancer registry database linkage with mortality system to verify the accuracy of the information registered for mortality and cancer cases.

Aim
To investigate the reliability between diagnosis and cause of death from the Hospital-based Cancer Registry AC Camargo Cancer Center (HBCR-ACCamargo) comparing cause of death from Foundation State System of Data Analysis (FSEADE) of Sao Paulo.

Methods
Twelve cancer sites divided by high lethality (stomach, liver, biliary tract gallbladder, pancreas and lung) and low lethality (colon, recto sigmoid-junction, rectum, larynx, breast, and prostate cancer) were analysed. Deterministic linkage was applied between HBCR-ACCamargo cases (2000-2012) versus mortality data from FSEADE, [2000-2015]. We match the underlying cause of death of SEADE with mortality cause and diagnosis at the cancer registry. The reliability was calculated by Kappa and PABAK index.

Results
We identified 2376 patients from HCR for cancer cases.

Conclusion
Our results demonstrated high reliability between databases of the hospital cancer registry and mortality system. The values with low accuracy can be related cancer prevalence. However, there is an increase in the agreement expressed by PABAK when adjusted for the prevalence and bias of marginal discord.

IS CHILDHOOD CANCER REGISTRATION IMPROVING IN THE IARC REGIONAL HUB FOR LATIN AMERICA?

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Background
Childhood cancer represents an important aspect of burden cancer, considering its specificity and social impact. In Latin America (LA) strong initiatives for childhood cancer registration (CCR) are being developed in partnership with oncology programs and international institutions. The aim of the IARC Regional Hub was to benchmark the CCR practices in LA in the existing childhood population-based cancer registries (CPBCCR) and general population-based registries (GPBCCR).

Methods
Eighty-one registries (72 CPBCCR, 9 CPBCCR) were invited to participate in a web-based survey focused on CCR. The addressed issues included statutory agreements, data sources, registration practices, registry output and priorities for further development. The Hub Coordinating Center was responsible for the development and administration of the survey, and for storage, cleaning, reduction, coding, processing and analysis of the data.

Results
Response rate was 86.4% (70/81). All CPBCCR (8) have national coverage, sent data to the third edition of International Incidence of Childhood Cancer (IICC-3) and participate in childhood cancer control plans. In a countries without national CCR, hospital-based cancer registries are developed in large referral hospitals. Among the 62 responding CPBCCR, 41 are among hospital-based members, only one among the CPBCCR. 50/62 GPBCCR in 12 countries produce incidence reports, 24/62 include childhood cancer incidence and 6/62 childhood cancer survival. Funding is mainly from the government in 44/62 GPBCCR and 5/8 CPBCCR. Most registries code tumours by site, but 24/62 report incidence and survival reports. 15/62 registries do not use ICD/WHO. To improve data quality, the registries would need more human resources, specialised training, better access to data sources, strengthened networking with the paediatric oncology practitioners and supportive laws.

Conclusion
There is a clear interest in CCR and advances are on the way. The survey identified a lack of attention to childhood cancers in (some) GPBCCR. The expressed needs will be addressed within the IARC LA-Hub.

THE CANCER TASK FORCE PROJECT FOR COOPERATION IN THE CARIBBEAN AND AGING RESEARCH

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Background
Population-based cancer registries, through their mission to perform public health surveillance and research in oncology, contribute to the development of global surveillance of cancer worldwide. We present The Cancer Task Force Project for cooperation in the Caribbean and Aging Research; this project underlies the importance of innovative and cooperative projects for countries of the Caribbean involved in sharing knowledge and new research approaches.

Methods
Two sustainable and impactful research programmes on cancer in this region, The Cancer task Force Project for Cooperation in the Caribbean and Aging Research started in 2017 with Martínique, Cuba and Puerto Rico population-based cancer registries. Cooperative approaches could help to bridge disciplines through and break down cancer management differences between Caribbean countries, by evaluating patterns of care of patients in research programs and observational studies.

Results
A cancer research strategy with a list of objectives was created. Priorities were established to focus on mechanisms for enhancing the cancer research environment. A cancer task force was created to develop scientific activities; a roadmap was planned to achieve an optimal cancer research system. Such initiative was promoted during scientific meetings and workshops to explain the role of a population-based cancer registries and what activities are going and could be shared with the Caribbean. A cancer surveillance platform is on creation to promote the improvement of knowledge and competence in public health and epidemiology, and their communication thanks to e-Health initiatives, in the framework of an inter-regional and pan-Caribbean strategy for research in public health and cooperation in cancer.

Discussion and Conclusion
There is a huge challenge in developing collaborative projects on specific cancer research projects to better know the burden of cancer in the Caribbean. Capacity building could be the best way to reinforce cancer research teams by using oncology departments and population-based cancer registries data.
CERVICAL CANCER INCIDENCE AND TRENDS IN UASIN GISU, KENYA (2010 TO 2014)

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Background
Globally, cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 526,000 new cases [Globocan 2012]. Cervical cancer is currently the most common cancer among women in Uasin Gishu County, Eldoret Cancer Registry (ECR) is a population based registry that collects cases diagnosed in Uasin Gishu County whose population is 894,179; 50% male and 50% female [2009 National census]. The aim of this study is to determine the incidence and trends of cervical cancer in Uasin Gishu for a 5 year period based on ECR data.

Method
Cancer registrars undertook case finding and abstraction in health facilities in Uasin Gishu County. Cancer cases that could be confirmed were abstracted on to the Case Registration Form. Coding was done using ICD-O-3. CarcReg was used for data entry, quality checks and data management. Data analysis was done for all women between the ages of 15-80 years.

Results
A total of 2539 cancer cases were registered for the period 2010-2014 comprising of 1144 male and 1395 female. Cancer of the cervix was the highest in female with 265 cases; 19.3% of all female cancers. ASR was 4.8 per 100,000. The most affected age group was 50-54 years. Stage I cases were 9%, stage II had 10%, stage III had 21%, stage IV 55% and unknown stage was 54%. There was high incidence observed in 2011 as compare to other years.

Conclusion
Cervical cancer incidence was very high among women of Uasin Gishu County. Notably, most of the cases have unknown stage which may be associated with the fact that most patients are diagnosed within the county and may go for treatment elsewhere, or some go for traditional treatment in the villages after diagnosis and others may not come back for treatment after diagnosis due to cultural beliefs.

HIGH RESOLUTION REGISTRY OF MELANOMA AND CARE PATHWAYS MONITORING IN THE VENETO REGION

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Background
In 2016 the Veneto Region issued the care pathways for patients with melanoma of the Veneto Tumour Registry, in collaboration with the Veneto Oncology Network, started the high-resolution recording of melanoma for the 2013 incident cases. This study evaluates the use of cancer registry data to calculate the care pathways indicators.

Methods
Information was collected on diagnostic procedures, tumour characteristics, surgery, medical therapy, and follow-up. The care pathways indicators that can be calculated with the regional administrative data compared to those calculated through the Registry data were distinguished.

Results
The high-resolution registry includes 403 melanomas diagnosed in 2013 in 3 provinces (28% of the Region). Of these, 59% were diagnosed in stage I, 11% in stage II, 8% in stage III and 2% in stage IV with a 5-year survival of 99.3%, 90.5%, 85.5% and 11.1%, respectively. Fifty-nine percent of cases showed vertical growth and 18% ulceration. A BRAF mutation was recorded in 21 out of 36 patients tested. Sentinel lymph-node biopsy (SLNB) was performed in 16% and lymphadenectomy in 8% of cases, with positive lymph-nodes in 10%. Nine percent of patients received medical treatment, of which 35% were immunotherapy, 23% systemic chemotherapy, 13% targeted therapy and 8% radiotherapy. The incidence data of melanoma was used for data entry, quality checks and data management.

Discussion
The quality of melanoma care before the introduction of care pathways was medium-high. The Cancer Registry was essential for calculating almost all the process indicators and made it possible to define the information sources necessary for monitoring also the other care pathways of the Veneto Oncology Network.

COUNTRIES WITH PARTIAL CANCER REGISTRATION COVERAGE: HOW TO ESTIMATE THE NATIONALLY-INCIDENCE?

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Background
In 2016 the Veneto Region issued the care paths for patients with melanoma. The “I:M method” assumes that national age-specific incidence crude rates are the same of the covered region and computes the national incidence from the population mortality. The incidence data of melanoma was included in the registry. The study evaluates the use of cancer registry data to calculate the care pathways indicators.

Methods
Information was collected on diagnostic procedures, tumour characteristics, surgery, medical therapy, and follow-up. The care pathways indicators that can be calculated with the regional administrative data compared to those calculated through the Registry data were distinguished.

Results
The high-resolution registry includes 403 melanomas diagnosed in 2013 in 3 provinces (28% of the Region). Of these, 59% were diagnosed in stage I, 11% in stage II, 8% in stage III and 2% in stage IV with a 5-year survival of 99.3%, 90.5%, 85.5% and 11.1%, respectively. Fifty-nine percent of cases showed vertical growth and 18% ulceration. A BRAF mutation was recorded in 21 out of 36 patients tested. Sentinel lymph-node biopsy (SLNB) was performed in 16% and lymphadenectomy in 8% of cases, with positive lymph-nodes in 10%. Nine percent of patients received medical treatment, of which 35% were immunotherapy, 23% systemic chemotherapy, 13% targeted therapy and 8% radiotherapy. The incidence data of melanoma was used for data entry, quality checks and data management.

Discussion
The quality of melanoma care before the introduction of care pathways was medium-high. The Cancer Registry was essential for calculating almost all the process indicators and made it possible to define the information sources necessary for monitoring also the other care pathways of the Veneto Oncology Network.

RELIABLE COMPARISONS OF BASIS OF DIAGNOSIS AMONG REGISTRIES NEED AGE-STANDARDISATION: HARMONISING ACTIONS NECESSARY

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Background
The level of diagnostic aggressiveness varies according to the age of patients. Therefore, age may be a possible confounder when Basis of Diagnosis (BD) is compared across different cancer registries (CR).

Methods
16,803,336 cases incident in 2004-2013 from 59 CRs included into the European Cancer Information System (ECIS) – 6 operating in Northern Europe (NE), 26 in Western Europe (WE), 4 in Eastern Europe (EE) and 23 in Southern Europe (SE) – were analysed. crude proportion (CP) and standardised proportion (SP) of primary tumour (HPT) for 33% of cases in NE, 42% in EE, 57% in WE as CP and 39%, 42%, 62% respectively as SP. For lung CP of DD was close to SE. Cancer registries (CR) were used for data entry, quality checks and data management. Data analysis was done for all women between the ages of 15-80 years.

Results
BD distributions across areas for pancreas were different using CPs or SpAs. Clinical investigation (CI) was the BD for 34% of cases in NE and 39% in EE as CP; it was 29% and 39% respectively as SP. BD was histology of primary tumour (HPT) for 33% of cases in NE, 42% in EE, 57% in WE as CP and 39%, 42%, 62% respectively as SP. For lung CP of DD was close to SE. Cancer registries (CR) were used for data entry, quality checks and data management. Data analysis was done for all women between the ages of 15-80 years.

Discussion and Conclusion
Besides the different methods, the discrepancies observed between the two sets of estimates can be attributed to several factors, including the representativeness of the available CRs compared to the national territory, the selection of the CRs among those available and the definition of the cancer sites in the analysed period. The results of this comparison are expected to improve the estimation of national incidence in those countries with partial cancer registration coverage.

120
121
CANCER INCIDENCE ESTIMATES AND MORTALITY FOR THE TOP FIVE CANCER IN COLOMBIA, 2007-2011

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Background
To estimate incidence and mortality for five cancer sites in Colombia, for the period 2007-2011.

Methods
Cases and age-standardized cancer incidence rates per 100,000 person-years were estimated based on incidence/mortality ratios in areas with a population-based cancer registry with published data in Cancer Incidence in Five Continents, volume X (Cali, Pasto, Bucaramanga and Manizales). Mortality age-standardized rates per 100,000 were based on official cause of death statistics. Cause of death statistics and population projections were provided by the National Administrative Department of Statistics (DANE). Incidence and mortality rates were calculated by department, cancer type and sex.

Results
The annual number of expected cancer cases (all cancers combined) for the period 2007-2011 was 62,918 with a total of 32,653 deaths. The most frequently diagnosed incident cancers were prostate (44.5 per 100,000 person-years) and breast (33.8 per 100,000 person-years). The highest cancer mortality rates were observed for males in stomach cancer (14.2) and for females for breast cancer (9.9).

Discussion and Conclusions
Colombia presented higher estimates of incidence and mortality for breast and prostate cancer, as well as a proportion of cancers related to infection such as stomach and cervical cancer. More than 50% of the cancer burdens were attributed to these neoplasms. Time trends in cancer incidence can only be reliably evaluated based on long-term information from high-quality population-based cancer registries.

POSTER - THEME 5: USING STATISTICAL MODELS TO ESTIMATE THE CANCER BURDEN

BLADDER AND URINARY TRACT CANCER SURVIVAL IN MALLORCA, SPAIN, AND FACTORS ASSOCIATED WITH SURVIVAL (2006-2012)

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Background
Bladder cancer and urinary tract are the fourth most frequent in men in Mallorca, while women are not among the ten most frequent. Objectives: 1) To establish bladder and urinary tract cancer survival by stage and the survival associated factors. 2) To estimate the frequency of cases by stage.

Methods
Incident bladder and urinary tract cancer cases diagnosed between 2006 and 2012 have been identified through the Mallorca Cancer Registry. Inclusion: cases with codes C65-C68 according to ICD-O 3rd edition with any behavior. Cases identified exclusively through the death certificate were excluded. Age, date, diagnostic method, Histology, T, N, M and stage at the diagnostic time and follow-up date or death were collected. End point 31st December 2015. Multiple imputation (MI) was performed to estimate cases with unknown stage. Cases with benign or indeterminate behavior were excluded for the survival analysis. Actuarial and Kaplan-Meier methods were used for survival analysis. Extended Cox regression models were built to identify factors that explain and predict survival.

Results
2,060 cases identified, 15%women, 65.2% were 65-93 years, 93.6%bladder and other urinary tracts, 55%transient papillary carcinomas, 37%transitional solid, 0.6%micropapillae and the rest of other histologies. 3.7%had no stage (benign or undetermined behavior) and 12.5%unknown stage. After MI, 35.7% in stage 0 (non-invasive papillary cancer), 3.1% in stage I (cancer in situ), 33.3% stage I, 11.9% stage II, 4.7% Stage III and 11.1% Stage IV. Survival was 75% at 3 years. Survival by stage: 98% at stage 0, 89% stage I, 84% stage I, 44% stage II, 33% stage III and 7% stage IV. Extended Cox model showed that age, histology and stage were associated with survival.

Conclusions
Survival bladder and urinary tract cancers worsens greatly from stage I, although only one in four cases are in stages II, III or IV.

IMPROVING BRAZILIAN CANCER ESTIMATES – A PILOT STUDY

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Background
Since 1995, the Brazilian National Cancer Institute – INCA, estimates and disseminate information on cancer incidence by geographical regions, states and capital cities. It is essential to assist managers and planners to guide strategies and policies to prevent and control cancer. From 2000, cancer estimates were based on method proposed BLACK et al. Brazilian PBCR are improving their databases and enlarging their series – of the 32, 27 registries have at least 8 years of consolidated information. This scenario is favorable to evaluate the possibility of implement the same procedures used to build global estimates (Globocan).

Methods
Belo Horizonte’s PBCR (2000-2012) was chosen to test the estimates performance and the estimate incidence rates was based on DEPRED – program developed by IARC/ IACR, which uses simple time-linear prediction models with short prediction calculation incidence of cancer. It was projected cancer incidence to 2012 (observed data) and 2016 (INCA estimates) by sex and 17 age groups (0-4, 5-9...) for colorectal (C18-21), prostate (C61), lung (C33-34), female breast (C50) and cervix uteri (C53) cancer.

Results
The prediction for colorectal cancer was similar to observed (2012) and estimated (2016) cancer cases. Females had a better fit. Cervix uteri had the better performance. Female breast cancer and prostate were similar to observed incidence but when compared to 2016 estimates, it exceeds the cancer cases by 30 to 50%.

Discussion and Conclusion
The prediction performance shows a great coherence to real data. Compared with 2016 INCA estimates, there were a distortion related to female breast cancer and prostate, already expected due to the overdiagnoses of screening procedures. The prediction model is feasible and should be implemented to predict Brazilian cancer estimates. The challenge is to deal with cancer screening-related and heterogeneous databases available.
OUTCOMES OF PATIENTS DEVELOPED SECONDARY SOLID CANCER AFTER HEMATOPOIETIC CELL TRANSPLANTATION BY USING PBCR DATA

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Background

Development of secondary solid cancer is one of the debilitating late effects after hematopoietic cell transplantation (HCT). We aimed to elucidate overall survival and causes of death after diagnosis of individual solid cancers, and to compare their survival with de novo cancer in the general population.

Methods

We analyzed data from the national HCT registry and population-based cancer registries (PBCR) in Japan. The study included 40,126 patients who underwent a first autologous or allogeneic HCT between 1974 and 2013 and survived beyond one year after HCT. Cox models were used to adjust factors associated with overall mortality.

Results

Among the 40,126 patients, 815 (male: 497 and female: 318) developed a secondary solid cancer. The median age at solid cancer was 56 years, and was younger than the general population (67 years). The median duration from HCT to diagnosis was 6 years. The most frequent cancer was colorectal cancer (n=125), followed by esophageal cancer (n=93), lung cancer (n=91), colon cancer (n=90), and gastric cancer (n=54). 277 patients developed solid cancer after autologous HCT, and 538 after allo-HCT. The overall survival probabilities at 5 and 10 years after diagnosis of solid cancer were 49% and 40%, respectively. Solid cancer was the most common cause of death except for breast and bladder cancers. The age-adjusted overall survival probabilities were lower in the HCT population than in the general population for colon, bone/soft tissue, and uterine, and did not differ statistically for other sites.

Discussion and Conclusion

Despite the high-income country, TAG is not universally followed. Cancer outcomes in the US are dependent on a complex interplay between insurance types, accessibility to care, and other state-specific differences. Further attention is required to observed significant disparities between two urban areas even in a small state of 3 million people. Improved outcomes requires more resources.
POSTER - THEME 6: USING REGISTRY DATA FOR CLINICAL DECISION MAKING

PRIMARY AND SECONDARY CANCER CARE REGISTRY: LONG TERM EFFECTS

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Background
Understanding treatment related long-term health effects is essential to assist breast cancer patients in making informed choices about treatment. Knowledge about late side effects supports prevention strategies, monitoring and early detection. We therefore studied health problems presented to general practitioners after breast cancer treatment and relate the late side effects according to the different treatment regimes.

Methods
The Primary Secondary Cancer Care Registry (PSCCR) is a database in which data on hospital care (patient, tumour and treatment characteristics) from the Netherlands Cancer Registry (NCR) are combined with general practitioner-reported health problems in primary care (NIVEL primary care database).

The first step was to create at dataset for breast cancer patients. Linkage for other tumour types is underway. The health problems in the PSCCR obtained through linkage will be validated by comparison to patient-reported problems assessed with a survey. In this analyses we categorized the complaints reported by the general practitioners after breast cancer treatments in the PSCCR obtained through linkage according to different time intervals after cancer diagnoses (0-1, 1-5, 5-10 and 10-15 years after diagnosis) and compared these complaints to those in control women of the same age and GP practice.

Results
Linkage between the two registries demanded a good governance and agreements of privacy boards. The first tentative results are based on data from 15.618 patients. Compared to controls, breast cancer patients more often were seen with chronic diseases, like heart failure and osteoporosis, but also often were seen with chronic diseases, like heart failure and osteoporosis, but also most were male patients.

Conclusions
The PSCCR containing primary care data on a large, well defined group of women with breast cancer up to 15 years after diagnosis, allowed us to study symptoms that are more often presented to the general practitioner after specific treatments.

EFFECTIVENESS OF TREATMENT FOR BREAST CANCER DIAGNOSED AND TREATED IN A LOW-MISED OCME COLOMBIAN POPULATION

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Background
Cancer survival is determined by demographic, clinical, socioeconomic and health system conditions, especially treatments scheme which are based in efficacy studies. However there is a lack of knowledge about effectiveness of treatments in real conditions. This evaluates the effectiveness of treatments in survival rates of women with breast cancer in Pasto-Colombia.

Methods
An observational cohort study with 5-year follow-up was conducted with all women (N=102) diagnosed and treated for breast cancer during 2008-2012 in the mainly Oncologic Hospital in Pasto. Information was obtained from the Cancer Registry of Pasto and was complemented by review of medical records. Evaluation of the treatment scheme was done by gathering, measuring intensity and duration) and was performed using Cox multivariate models adjusting by clinical (comorbidities, stage TNM), demographic (age) and SE conditions (stratum, health insurance, zone of residence).

Results
Overall 5-year observed survival was 59%; this survival rate was modified by treatment schemes. Receiving any treatment decreased the risk of death by 0.3 times. Treatments scheme that not include any kind surgery are less effective for decreasing the risk of death. Treatment with scheme including mastectomy, more than 4 chemotheraphy cycles and other drugs different to FAC are less effective for a better survival prognosis.

Conclusion and Discussion
This study provides real evidence of useful of treatments, however protocols and clinical guidelines should be evaluated to effective treatments in reducing risk of death due breast cancer.

IN Volvement of cancer registries in measuring patient reported outcome measures in colorectal cancer

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Background
The burden of colorectal cancer in Europe still increasing. The disease and treatment can have profound impacts on the patients’ quality of life (QoL), emphasizing the importance of measuring QoL. An important tool in this process is Patient Reported Outcome Measures (PROMs).

The goal of this study is to give an overview on the use of PROMs throughout the colorectal cancer care pathway, and to describe the role of the cancer registries (CR) in this process.

Methods
Studies were searched via PubMed until end of April 2018 regarding the involvement of CRs in measuring PROMs in colorectal cancer, focusing on the whole care pathway, i.e., screening, diagnosis, treatment, follow-up, and palliative care. Only studies with at least an abstract in English were included.

Results
Our search retrieved 78 studies and 46 studies (39%) involved CRs. Most of the studies were conducted in the United States (n=16). Cancer care processes, most studies focused on treatment (e.g. surgery, systemic therapy). Only four studies assessed PROMs in the screening setting.

There is a great variation in the PROMs instruments used, as well as in the domains included in them (physical function, symptoms, psychological distress, general QoL, financial aspects, patient satisfaction). The most used standardised instrument was EORTC QoL C30, sometimes in combination with other colorectal cancer specific questionnaires. CR were used to identify the cancer cases in 33 studies, to link clinical data or other information with PROMs in 9 studies and to audit screening in 4.

Conclusion
The use and content of PROMs in colorectal cancer varies but is still limited. Cancer registries are mostly used to identify patients. In future CRs could play a fundamental role in routine collection of PROMs and linking with clinical data to provide unbiased and comprehensive results.

PROGNOSTIC FACTORS FOR PATIENTS WITH MULTIPLE MYELOMA FROM HOSPITAL BASED CANCER REGISTRY, SAO PAULO, BRAZIL

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Background
Multiple myeloma (MM) is considered a rare tumor with low incidence in the world. For 2012, in South America were 1.7 new cases, for 100,000 people. However, it is the second malignant tumor types of the haematological neoplasms.

Methods
Between 2000 and 2012, 165 patients were diagnosed with MM at AC Camargo Cancer Center. Socio-demographic, clinical and treatment information were obtained by the Hospital Based Cancer Registry (HCR). Overall survival (OS) was calculated by the Kaplan-Meier method. The Cox regression model was used, and hazard ratio [HR] with 95% confidence interval (95%CI) was calculated. The significance level was 5%. Analyses were performed in SPSS v.25.

Results
Most of the patients were male (54%), mean of age was 61 years old, with superior education levels (37 cases, 22%), and from the SouthEast region (101 cases, 61%). Median OS was 43 months, in general, 3 and 5 years survival ratios were 55.2% and 43.9%, respectively. In the multiple Cox regression model, factors associated with worst prognostic were: patients with MM stage IV (HR 1.7; 95%CI 1.1-2.7), and patients with poor performance status (HR 2.2; 95%CI 1.3-3.6). Patients diagnosed after 2009 reduced the risk of death to almost 44% [HR 0.56; 95%CI 0.36-0.87] adjusted by gender accordingly.

Discussion and Conclusion
Data from Hospital Cancer Registry is able to give more accurate information on treatment. Since 2010 a new era of treatment of multiple myeloma with target therapy and bone marrow transplantation result in improvement of survival rates in patients diagnosed after this period. More, patients with BMT had a reduced risk of death by almost 50% compared with patients without BMT. Population based cancer registry may include in the database treatment information about chemotherapy, radiotherapy and chemotherapy bone marrow transplantation is a now a regular treatment for this malignancy.
Background
Recording cancer data in cancer registries is essential for producing reliable population-based data for service planning, monitoring and evaluation. Prostate cancer (PCA) remains the most frequent type of cancer in terms of incidence and mortality in men in the Caribbean. The quality of life Prostate cancer Cohort will assess quality of life and patient outcomes in Martinique using a digital platform for patient-reported outcome measurement. The registry includes data on circumstances of diagnosis; clinical stage at diagnosis, for patients older than 60-y-o, GO was also used in patients with intermediate and poor prognostic score. In treated patients, we found a 9% increased 1-y NS between patients treated or not by GO. GO effect was mainly effective in patients under 60-y-o with a 1-y NS 60% compared to 38% in patients up to 60 y-o. Any effect was found on 3-year NS.

Results
We included 615 cases (median age: 73 y-old). As a whole 431 cases were treated by chemotherapy +/- stem cells graft, 41 of them received GO. GO was used in patients with intermediate and poor prognostic score. In treated patients, we found a 9% increased 1-y NS between patients treated or not by GO. GO effect was mainly effective in patients under 60-y-o with a 1-y NS 60% compared to 38% in patients up to 60 y-o. Any effect was found on 3-year NS.

Conclusions
Our results demonstrate that GO was useful at the population level, even if our data did not reach statistical significance. Despite marketing authorization granted in Europe for patients older than 60-y-o, GO was also used in younger cases with a 10% gain of NS at 1-y. These data emphasize the usefulness of a collaborative partnership between epidemiologist, clinical trial and industry for patient’s benefit.
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