

Spain, Italy and the United Kingdom were recruited. The IG had access to the apps and game for six months, and to smart sensors for the last two months. Schools were recruited by convenience sampling. Participants in both groups undertook (i) anthropometric measurements, (ii) diet (KIDMED), physical activity (PAQ-A) and sleep (HELENA study) validated questionnaires, and (iii) ad-hoc lifestyles knowledge questionnaire. PEGASO, if used, continuously recorded diet and physical activity. User experience was assessed through focus groups.

### RESULTS:

Five hundred and fifty-eight participants were included (IG:365 / CG:193). The mean (standard deviation; SD) age was 14.8 (0.8), and 52.3 percent were girls. At baseline, mean scores (SD) of KIDMED, PAQ-A and weekday and weekend sleep hours were 5.60 (2.41), 2.48 (0.66), 8.34 (1.07) and 9.99 (1.66), respectively. The percentage of correct answers of lifestyle's knowledge was 65.2 percent (range 13–100 percent). The IG and CG did not show differences for main outcome variables. At six months, a higher percentage of participants in the IG reported an increase of at least one point in the adherence to Mediterranean Diet (43.8 percent vs. 35.4). No differences were observed for other lifestyles. Focus group results showed a predisposition of adolescents to use mHealth for health promotion; the platform was considered to be useful and complete and personalized suggestions were positively valued. Participants reported few limited interest on the game and several technical issues.

### CONCLUSIONS:

Although participants were motivated and excited about their involvement in the study, and that PEGASO was something desirable for them, the system only showed some impact in specific areas – namely, diet – and could improve some its technological features. Several challenges and opportunities are associated with the implementation of mHealth.

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## PP137 Colorectal Cancer Screening In The Philippines: Cost-Utility Analysis

### AUTHORS:

John Wong, Stephanie Anne Co ([stephanie.a.co@gmail.com](mailto:stephanie.a.co@gmail.com)), Joy Bagas, Ma. Sophia Graciela Reyes, Hadrian Lim, Nel Jason Haw

### INTRODUCTION:

Colorectal cancer (CRC) is the fourth leading cause of cancer deaths in the Philippines. In 2014, the Philippine Health Insurance Corporation (PhilHealth) created a CRC treatment package. The study aimed to determine the cost-utility and budget impact of CRC screening strategies.

### METHODS:

A discrete-event microsimulation model was used to simulate four screening modalities: (i) guaiac-fecal occult blood test (gFOBT) followed by colonoscopy every 10 years; (ii) fecal immunochemical test (FIT) followed by colonoscopy every 10 years; (iii) FIT followed by flexible sigmoidoscopy; and (iv) colonoscopy screening every 10 years. These interventions were all compared to no screening. Parameter values were taken from a rapid review of the medical literature and primary data collection from a nationally representative sample of tertiary hospitals.

### RESULTS:

All screening modalities were very cost effective considering that the incremental cost-effective ratios (ICERs) were lower than the gross domestic product per capita threshold suggested by the World Health Organization. Sensitivity analysis showed that the ICERs of all screening modalities evaluated remained below this threshold. The strategy of using FIT followed by colonoscopy every 10 years had an ICER of USD 6,025, with an annual budget impact of USD 6.5 million, assuming low compliance. With moderate compliance this could increase to USD 18.7 million annually.

### CONCLUSIONS:

PhilHealth may introduce a benefit package for outpatient screening of colorectal cancer using the screening modality of annual FIT followed by colonoscopy every 10 years.

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## PP138 Cost-Effectiveness Analysis Of Influenza A (H1N1) Chemoprophylaxis

### AUTHORS:

Luisa Vecoso ([luisavecoso@gmail.com](mailto:luisavecoso@gmail.com)), Marcus Silva, Everton Silva, Mariangela Resende, Tais Galvao

**INTRODUCTION:**

Influenza A (H1N1) virus is the most relevant virus in death by flu complications. Oseltamivir and zanamivir are used for influenza prophylaxis in epidemics. We aimed to evaluate the efficacy of chemoprophylaxis for influenza A (H1N1) for the Brazilian health care system.

**METHODS:**

We systematically searched the literature to identify efficacy results. Costs assessed from the system perspective were obtained from official Brazilian Ministry of Health systems, and completed from medical care at a university hospital of Campinas, Sao Paulo. Model outcomes were quality-adjusted life years (QALY) with willingness to pay BRL 30,000 (USD 8,212)/QALY and prevention of H1N1. A decision-tree model was used to calculate the incremental cost-effectiveness ratios for prophylaxis, compared to no prophylaxis. Deterministic and probabilistic sensitivity analyses were used to test robustness of the model.

**RESULTS:**

Prophylaxis had 70 percent adherence to treatment, 9 percent adverse events, effectiveness in avoiding H1N1 (relative risk = 0.43; 95% confidence interval: 0.33, 0.57); no evidence of prophylaxis efficacy for complication, hospitalization and death was found. Both scenarios had 14 percent H1N1 attack rate, 67 percent of ambulatorial consult, 43 percent of inpatient care, 14 percent of deaths in hospital, 23 percent of intensive care where death was 40 percent. Utility was 0.50 during H1N1 infection, 0.23 with hospitalization, 0.195 less with adverse events, 0 for deaths and 0.885 for healthy. Cost was BRL39 (USD 11) for chemoprophylaxis; BRL 12 (USD 4) for outpatient care; BRL 5,728 (USD 1,568) for hospital admission; BRL 19,217 (USD 5,260) for intensive care; and BRL 292 (USD 80) for adverse events. Incremental cost of prophylaxis was BRL 40 (USD 11) and utility increased 0.004, which mean saving of BRL 2,921 (USD 780)/QALY. Prophylaxis saves BRL 338 (USD 92) per H1N1 case avoided. Univariate and probabilistic sensitivity analysis assure the robustness of results, with 43 percent probability of being of lower cost and higher effectiveness.

**CONCLUSIONS:**

Prophylaxis is cost-effective from the health care system perspective using utility and avoided H1N1 cases outcomes.

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**PP140 Cancer And The Burden For Social Security System. Is It Sustainable?**

**AUTHORS:**

Simone Russo ([simone.russo82@hotmail.it](mailto:simone.russo82@hotmail.it)), Raffaele Migliorini, Marco Trabucco, Francesco Saverio Mennini

**INTRODUCTION:**

The purpose of the study is to estimate both the number of beneficiaries and the burden of the Disability Insurance (DI) benefits provided for neoplastic diseases (ND) and for five cancer types, focusing on the expenditure by the social security system.

**METHODS:**

To estimate the current DI benefits and their cost, we analyzed the databases of DI awards and the mean cost per benefit of the Italian National Social Security Institute (INPS) for two types of social security benefits: the disability benefits (DB) for people with reduced work ability and the incapacity pensions (IP) for people without work ability. A probabilistic model with a Monte Carlo simulation was developed in order to estimate the total benefits provided and costs.

**RESULTS:**

Between 2009 and 2015, a yearly average was estimated of about 122,000 beneficiaries of DI for cancer. The total estimated expenditure for ND in the seven years, supported and provided by INPS for these social security benefits, amounted to EUR 8.1 billion (corresponding to 27.4 percent of the total expenditure for disability provided by INPS) of which 66.7 percent was associated with DB and the remaining 33.3 percent with IP. The percentage increase related to the costs show that DB have the most significant increase starting from the 2013 with 11.3 percent from 2013 to 2014 and 9.7 percent from 2014 to 2015, while IP have an increase from 2009 to 2011, with a maximum during 2011, with a percentage difference of 7.6 percent.

**CONCLUSIONS:**

The incidence and the prevalence of the ND are expected to increase in the coming years in Italy. In order to minimize the consequences of this scenario, rapid access to innovative treatments would reduce the