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## SUPPLEMENT

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Mind the gap: Reducing inequalities in health and health care

*Glasgow, 19–22 November 2014*

#### ABSTRACT SUPPLEMENT

*Guest editors: Martin McKee, Alastair Leyland, Dineke Zeegers Paget*

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required a colonoscopy. Since the new method was introduced in July 2012, to have two full years of comparison, we analyzed results from 1 January 2011 to 31 December 2011 (latex-FIT) and from 1 January 2013 to 31 December 2013 (oro-FIT). The final data were analyzed using odds ratios (OR)

### Results

In the study period, the LHA 7 performed 25 137 tests: 11 556 with latex-FIT (2778 first exams and 10 803 second exams) and 13 581 gold-FIT (2364 first exams and 9192 second exams). Gold-FIT method determines a positivity of 4,49%, -0,97% in comparison with 2011 ( $p < 0.01$ ; OR = 0.82; CI: 0.73-0.91) and a PPV of 44,09%, +8,4% in comparison with 2011 ( $p < 0.01$ ; OR = 1.232; 1.05-1.44).

### Conclusions

The new procedure (oro-FIT) appears significantly associated with economic advantages (reduction of inappropriate colonoscopies) and with improvements in the quality of care (reducing the number of false positives).

### Key messages

- The new method of FOBT (gold-FIT) determines an improvement in terms of quality of care avoiding psychological stress due to false positive and unnecessary risky colonoscopies.
- There is also an improvement of efficiency, by reducing the number of diagnostic tests and the up taking of health personnel.

## Care coordination across care levels in Catalonia: the healthcare professionals' perspective

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### Background

Care coordination is defined as the harmonious connection of the different services needed to provide care to a patient throughout the care continuum in order to achieve a common objective without conflicts. It is considered a health policy priority as its absence can lead to poor quality of care and inefficiencies in the use of resources. The aim is to analyze coordination across care levels from the perspective of healthcare professionals and to explore its associated factors.

### Methods

A qualitative, descriptive study was conducted by means of individual, semi-structured interviews with a theoretical sample of 51 professionals from primary and secondary care. Sample size was determined by saturation. Areas of study were three areas of the Catalan health system that differ in terms of health services management and implemented coordination mechanisms. A thematic content analysis was conducted with mixed generation of categories and segmented by area.

### Results

In the three areas, professionals perceive adequate care coordination across levels, mainly described by the existence of mechanisms for coordination and communication. However, some problems also emerged, mostly related to the limited transfer of information (due to inappropriate use of those mechanisms, such as incomplete recording) and limited accessibility across levels (long waiting times in some specialties). Three types of

associated factors were identified: a) organizational: while mechanisms, especially for the transfer of information (shared medical record) and the expert system (discussion of clinical cases and virtual consultations) favours coordination; their design without the professionals' participation and work overload hinder it; b) professional: mutual knowledge emerged as an enabler for communication, as well as a culture of team working and appropriate clinical skills; and c) contextual: economic crisis emerged as a factor worsening working conditions. The intensity of factors differs across care levels and areas.

### Conclusions

Although, in general, professionals perceive that coordination is adequate, barriers to coordination are identified; addressing these barriers should contribute to improving quality and efficiency of health care.

### Key messages

- Professionals perceive adequate clinical coordination across care levels; however, problems are identified such as inappropriate use of mechanisms or barriers for accessing secondary care.
- The study also identifies factors influencing care coordination, suggesting the direction that organizational efforts should take to improve coordination across care levels.

## A wearable UV-LED medical device for automatic disinfection of stethoscope membrane

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### Background

The medical literature has demonstrated the importance of healthcare-associated infections (HAIs) and their negative consequences which are often due to inadequate management of cleaning, disinfection and sterilization. Stethoscope is the most used medical device in the world. The lack of stethoscope hygiene favors the transmission of microorganisms and can be a potential source of HAIs. This study proposes and evaluates an innovative health technology solution for stethoscopes' disinfection.

### Methods

A prototype of a portable and personal device which attaches stethoscope's head was created. The assembled device contains microelectronic components including the latest advances in ultraviolet (UV) light-emitting diodes (LEDs), that enables stethoscope membranes to be disinfected/sterilized automatically. The device casing was made using Sketchup 3D modeling software and a 3D printer. Our technology was assessed by testing its disinfection effectiveness with *Staphylococcus* spp., *Escherichia coli*, *Pseudomonas* spp. and *Enterococcus* spp. which were sown on stethoscope membranes and then transferred to Petri dishes. Treatment consisted in illuminating exposed Petri dishes with the light emitted by a UV LED, for one minute. Colony Forming Units (CFU) at 36°C were compared between control and treated Petri dishes for each microbe using the Wilcoxon signed-rank test. The Kruskal-Wallis test was used to assess percentage reductions in bacteria. Statistical significance was set at 99%.

### Results

The Wilcoxon rank test always showed a significant reduction of 90% in CFU after UV treatment ( $p < 0.01$ ). The effectiveness of the device was constant versus the different bacteria species: no significant differences in percentage reduction in CFU were found between them ( $p > 0.01$ ).

### Conclusions

The stethoscope, symbol of medicine, sensor and hand extension of healthcare professionals, has been proved to

be a carrier of microorganisms. We demonstrated that the stethoscope membrane can be effectively and efficiently disinfected using UV-C LED. In 1847 Ignaz Philipp Semmelweis introduced hand washing, a significance step in Hygiene. Our promising results are a step to eliminate stethoscope membrane contamination and to limit its influence on nosocomial infections.

#### Key messages

- Bacteriological tests have shown a reduction of over 90% of the microorganisms on the stethoscope membrane in just one minute of UV-C light exposure.
- UV-C LEDs seem to be an useful solution for the disinfection/sterilization, of the stethoscope membrane that is in constant contact with patients as well as the hands of health professionals.

## L.7. Risk groups under austerity

### Peer interventions in prisons: findings from a systematic review of effectiveness and cost-effectiveness

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#### Background

The prisoner population has a higher prevalence of poor health and health inequalities compared to the general population. Peer based interventions may be an effective way of reaching this vulnerable group, but to date the evidence has not been systematically reviewed.

#### Methods

The systematic review aimed to answer the following questions:

1. What are the effects of peer interventions on prisoner health and its determinants?
2. What are the positive and negative impacts of delivering peer interventions on health services in prison settings?
3. How do the effects of peer approaches compare to those of professionally led approaches?
4. What is the cost effectiveness of peer interventions in prison settings?

In addition to grey literature identified and searches of websites, 19 electronic databases were searched from 1985 to present. Two reviewers selected studies using the following criteria: prisoners resident in adult prisons or children resident in Young Offender Institutions; delivering or receiving peer-based interventions; outcomes relating to prisoner health or its determinants, organisational or process outcomes or views of prison populations. Quantitative, qualitative and mixed method evaluations were included.

#### Results

57 studies were included in the effectiveness review and one study in the cost-effectiveness review; most were of poor methodological quality. Evidence suggested that peer education interventions are effective at reducing risky behaviours, and that peer support services are acceptable within the prison environment and have a positive effect on recipients. Consistent evidence from many, predominantly qualitative, studies, suggested that being a peer deliverer was associated with positive effects. There was little evidence on cost-effectiveness of peer-based interventions.

#### Conclusions

There is consistent evidence from a large number of studies that being a peer worker is associated with positive health; peer support services are also an acceptable source of help within the prison environment and can have a positive effect on recipients. Research into cost-effectiveness is sparse.

#### Key messages

- This comprehensive systematic review of peer interventions in prisons found positive effects for peer deliverers and recipients, particularly in mental health and reducing risky behaviours.

- More research is needed on effects on recipients and of peer interventions in the wider criminal justice system.

### Sex work: Access to justice programs as public health interventions

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#### Issue/problem

Sex work is criminalized – fully or partially – in Kyrgyzstan, Macedonia, and Ukraine, which has resulted in deep-seated stigmatization of sex workers; and endemic abuse on the part of law enforcement, clients, and healthcare providers. Confiscation of condoms by police, fear of arrest outside health clinics, and stigmatizing healthcare environments have contributed to negative health outcomes among sex workers. In an effort to address the nexus of human rights violations and poor health outcomes, we have supported a variety of initiatives to improve access to justice for sex workers as public health interventions.

#### Description of the problem

We undertook an extensive review of five years of grants and operational support (2008–2013) to programs that seek to improve access to justice for sex workers in Kyrgyzstan, Macedonia, and Ukraine, including a review of the available literature and consultations with legal service providers and sex workers. Our analysis includes a wide variety of innovative initiatives ranging from legal services designed in collaboration with sex workers, to rights-based dialogues with healthcare providers, to litigation aimed at challenging unfettered harassment. We sought to answer:

Can good practice programs apply a human rights-based approach to effectively challenge rights violations experienced by sex workers, with a view to improve health outcomes?

#### Results (effects/changes)

In all three countries, good practice interventions have resulted in reductions in police violence and abuse, often at local level. In Kyrgyzstan and Ukraine, sex worker-led, rights-based dialogues with healthcare providers have resulted in higher quality services. However, in all countries many incidents of abuse are still not reported for fear of retribution, or inadequately addressed in both health and justice systems.

#### Lessons

Community participation in the design and implementation of access to justice interventions is critical to their success, for reasons such as access to the target population. Good practice interventions, with context-specific modification, have been effective across a variety of geographies, suggesting opportunities for program replication and scale-up.

#### Key messages

- Even in situations of widespread human rights violations against sex workers, access to justice initiatives that involve sex workers in design and implementation have successfully reduced abuse.