Conclusions Our results replicate those obtained by other studies developed with very different methodologies, which means that RWD, if adequately managed and analysed, is a good method to do clinical research. As this data is collected in a continuous way, rather than point-to-point, it will allow using all the information of a given patient, without the restrictions of the ad-hoc research.

Disclosure of interest The authors declare that they have no competing interest.

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P10-6

Estimating underobservation and the full size of the 2016 Zika epidemic in Rio de Janeiro

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Introduction The 2015–16 Zika epidemic in Rio de Janeiro followed a quick spread of the disease throughout Brazil from north to south. One of the striking features of this epidemic was the much higher incidence in young adult women, attributed to sexual transmission, and the serious congenital malformations and miscarriages associated to Zika infection in pregnant women.
Methods In this paper we use case reporting data along with live birth records to reconstruct the full size of the Zika epidemic through a Bayesian probabilistic graph model representing Zika transmission in this context. Based on the rate of lost pregnancies estimated from the deviations of the weekly birth rate from historical means, we estimated the probabilities of observation (case reporting) of a Zika case on women of fertile age.
Results We find that the probability of observing (reporting) a Zika case is different between men and women and ranges between 10 to 13%. From these estimates we reconstruct the full Zika epidemic size in Rio de Janeiro in 2015–16.
Conclusion The high underreporting rate helps explain the quick spread of Zika through Brazil and later through South America. The epidemic was much bigger than reported likely due to the contribution of sexual transmission and the long infectious periods of men.

Disclosure of interest The authors declare that they have no competing interest.

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P10-7

Change of influenza pandemics because of climate change: Complex network simulations

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Introduction Airborne influenza virus transmission is depending on climate. Infected individuals are able to travel to any country in the world within one day. In this study we combine these two insights to investigate the influence of climate change on pandemic spreading patterns of airborne infectious diseases, like influenza. Well-known recent examples for pandemics are severe acute respiratory syndrome (SARS, 2002/2003) and H1N1 (Influenza A virus subtype, 2009), which have demonstrated the vulnerability of a strongly connected world.
Methods Our study is based on a complex network approach including the following datasets:

–global air traffic data (from openflights.org) with information on airports, direct flight connections, and airplane types;

–global population grid [from Socioeconomic Data and Applications Center (SEDAC), NASA];

–WATCH-Forcing-Data-ERA-Interim (WFDEI) climate reanalysis data (1980–2015) and RCP6.0 climate projection data (2016–2040): temperature, specific humidity, surface air pressure, water vapour pressure.

We use the dependency between water vapour pressure and influenza transmission rate to give every location around the globe a unique transmission rate time series from 1980 until 2040. Local disease development is simulated with a stochastic SEIR compartmental model. All individuals (including infectious ones) are able to migrate from location to location via air traffic to simulate global dissemination of the virus.
Results Our results show which regions are most vulnerable to climate change in terms of influenza pandemics towards key target locations (defined by highest degree, highest population, highest betweenness centrality). Furthermore, we point out the influence of climate change on pandemics from 1980 until 2040. A significant trend in the pandemic rate of spreading can be seen on a global scale. Climate change causes an influenza pandemic to proceed 5 days slower (global average) in the year 2040 compared to the year 1980. This trend varies from country to country. For example, pandemics originating from Chad show an accelerated (6 days faster) spread.
Conclusion The presented results focus on the effect that climate change has on spreading patterns of airborne infectious diseases. The change from 1980 until 2040 of important influencing variables like population distribution, varying air traffic, vaccine research, hygiene, and healthcare are neglected to separate the impact of climate change.

Disclosure of interest The authors declare that they have no competing interest.

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P10-8

Evaluation of the impact of terminating the reimbursement of a therapeutic class of drugs on the French health system: The example of symptomatic slow-acting drugs for osteoarthritis (SYSADOAs)

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Introduction The French social security has had a balanced budget as a recurring objective for several decades, with a specific target on the National Health Insurance (NHI) branch. Over the past several years, efforts have intensified, with a continuing policy on decreasing drug prices, developing ambulatory care to limit hospitalizations or reducing the reimbursement of some specialists. Decreasing the reimbursement rate of drugs reduces, as a direct effect, the prescription and delivery of the targeted drugs. However, the substitution effect in favor of still reimbursed drugs should not be forgotten, because it could minimize the intended effect in economic terms as well as in terms of public health. The recent French decision to terminate the reimbursement of Symptomatic Slow-Acting Drugs for Osteoarthritis (SYSADOAs) is an interesting case study for the impact of terminating the reimbursement a drug from a collective perspective. The aim of the present study was to investigate prescription substitutions in favor of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs), both in terms of volumes and costs, as well as the occurrence of their potentially associated adverse effects (AEs) using a methodology based on access to national administrative databases.
Methods To quantify these effects in the most exhaustive manner, French medico-administrative databases were used (EGB - general sample of beneficiaries; PMSI - program for medicalization of hospital information systems). Three study periods were considered to cover a potential historical bias: the primary period was defined around the date of reimbursement termination (2015/03/01), considering one year both pre and post cutoff; the secondary period was defined