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(a third now exercise for at least 30 min on 5 days per week) would be expected to reduce blood pressure.[8]

Comparison with data from the USA and Canada suggests that the UK has some way to go in terms of cardiovascular disease prevention, but this must be set against the distinctly lukewarm evidence for benefit from treatment of people with stage 1 hypertension and no additional risk, on which UK guidance is based.[1,9] Furthermore, there were important methodological differences between countries, particularly in the Canadian data in which multiple measurements of blood pressure will have led to improved results compared with those from England.[10]

Nevertheless, Falaschetti and colleagues' data point to the potential for further improvements in both the detection and treatment of hypertension. People with hypertension and raised cardiovascular risk, albeit based on relatively small numbers in the study, might be undertreated. Data from UK primary care suggests that many of these people will be elderly, who might go untreated because of lack of evidence (particularly for decreased targets and in the presence of comorbidities).[11] We have previously shown that patients can self-monitor blood pressure and self-titrate their own medication; these and other new interventions can help to build on the improvements of blood pressure control that have been achieved so far.[12] Such improvements are worthwhile because treatment of blood pressure is cost saving.[1]

Overall, however, physicians in primary care—who provide most hypertension management in the UK—seem to have made substantial advances in their management of hypertension, perhaps encouraged by the UK's pay-for-performance policy within which hypertension care has received a large and sustained proportion of the funding on offer.[13] Falaschetti and colleagues' study provides a welcome example of the combined effects of individual physicians and policy makers on a simple but important risk factor. After 50 years of treatment, it seems that the drugs are working.[4]

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Infection control and MERS-CoV in health-care workers

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The recent exponential rise in the number of reported cases of Middle East respiratory syndrome coronavirus (MERS-CoV) is of major global concern. The Fifth Meeting of the International Health Regulations Emergency Committee concerning MERS-CoV was convened on May 13, 2014, by WHO's Director-General and concluded that, although the seriousness of the situation had increased, there was no evidence of sustained human-to-human transmission and that conditions for a Public Health Emergency of International Concern have not yet been met.[1]

MERS-CoV was first reported in September, 2012, when a novel β coronavirus was isolated from a Saudi Arabian patient in Jeddah, who had died of severe

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pneumonia and multiple organ failure in June, 2012.[2] More recently, a large number of MERS-CoV cases have been reported from Saudi Arabia and for the first time cases have been detected in Malaysia, Philippines, Greece, Egypt, Netherlands, and the USA. There have been a total of 572 cases of MERS-CoV infection reported to WHO globally as of May 15, 2014, with 173 deaths (30% mortality rate).[3]

The large number of MERS-CoV cases (229 cases) reported between April 11, 2014, and May 4, 2014, by Saudi Arabia were probably seasonal (related to the camel birthing season), reminiscent of the clusters of hospital cases that were previously confirmed in a hospital in Jordan in April, 2012,[4] which involved haemodialysis units within hospitals in Al Hasa in April and May, 2013.[5] Sequencing of the MERS-CoV isolates from the Jeddah outbreak has shown no substantial genetic changes.[1] The WHO Emergency Committee concluded that the increase in cases reported among health-care workers from hospitals in Jeddah was amplified due to overcrowding and inadequate infection control measures.[1,3]

Acute viral respiratory tract infections, such as severe acute respiratory syndrome (SARS) and MERS, are predominantly spread by large respiratory droplets (≥10 μm in diameter) during coughing and sneezing, whereas contact with fomite (including hand contamination with subsequent self-inoculation) might be another potential route of transmission.[6,7] The SARS outbreak in 2003 provided good lessons for the evaluation of environmental influences on the aerosol transmission of communicable respiratory diseases and the importance of good infection control measures in the prevention of nosocomial infections. One intriguing aspect of the 2003 SARS epidemic was the occurrence of super-spreading events, which accounted for 71·1% and 74·8% of SARS cases in Hong Kong and Singapore, respectively.[8] During the SARS outbreak in 2003, SARS-coronavirus (CoV) was moderately transmissible, with 2·7 secondary infections for every index case.[8] However, infectivity was substantially increased when coupled with environmental factors: 138 patients, many of whom were health-care workers, were infected within 2 weeks as a result of exposure to one patient with community-acquired pneumonia who was admitted to a general medical ward.[9] This super-spreading event seemed to be related to overcrowding and poor ventilation in the dry air-conditioned hospital ward, together with some contribution by the use of a jet nebuliser for the index case.[10] Evidence of airborne transmission of SARS-CoV was also supported by positive air samples of the virus obtained from a hospital room occupied by a patient with SARS in Toronto, Canada.[11]

On the basis of analysis of data in a case-control study that involved 124 medical wards in 26 hospitals in Guangzhou, China, and Hong Kong, the risk factors for super-spreading events of SARS-CoV in the hospital setting were: close separation between beds of less than 1 m; performance of resuscitation; staff working while experiencing symptoms; and patients requiring oxygen or non-invasive ventilation therapy.[12] This study also showed that the availability of washing or changing facilities for health-care staff was a protective factor.[12] These findings have important clinical implications in the prevention of nosocomial infections of MERS-CoV in health-care facilities in the Middle East.

A systematic review of five case-control and five retrospective cohort studies identified tracheal intubation, tracheotomy, and manual ventilation before intubation as procedures associated with risk of transmission of SARS-CoV to health-care workers.[13] Opportunistic airborne transmission might occur through fine particle aerosols as an efficient means of propagation under special environmental conditions, such as with aerosol-generating procedures in a ward

environment with poor ventilation and insufficient air changes.[7]

The main infection prevention and control measures for managing acute viral respiratory tract infections are simple and well documented: droplet precaution (wearing a surgical mask within 1 m of the patient) and contact precaution (wearing gown and gloves on entering the room and removing them on leaving).[14] Droplet precautions should be added to standard precautions for patients with symptoms of acute respiratory infection. Contact precautions and eye protection should be added when caring for probable or confirmed cases of MERS-CoV infection. Airborne precautions should be applied when performing aerosol-generating procedures.[3,6,7,15] To reduce room contamination in the hospital setting, major health organisations have recommended the application of a minimum room ventilation rate of six air changes per hour in existing facility, whereas a higher ventilation rate of 12 air changes per hour is recommended for new or renovated construction, especially when caring for patients receiving mechanical ventilation and during aerosol-generating procedures.[16,17] Infection source and engineering control, including avoidance of aerosol generation with appropriate airborne precautions, and improvement of ventilation design in hospital wards warrant serious consideration for the prevention of nosocomial outbreaks. The MERS-CoV outbreak in Jeddah, and the increasing number of health-care workers acquiring the infection as a result of poor infection control measures, remind us of the need to go back to the basics of infection control to help prevent MERS-CoV infection in health-care workers.

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