Summary
Winter pressures are caused by the interplay between seasonal increases in morbidity and structural problems within the healthcare system. An increase in winter mortality and morbidity does not just occur during extremely cold weather but also on relatively mild days which are more frequent. The cold weather mainly affects the health of the elderly, the very young and the chronically ill. This, combined with the dangers associated with snow and ice and the sheer scale of the annual influenza vaccination campaign, leads to increased pressures on the health service during the winter season.

The exact pattern of winter pressures is largely unpredictable, mostly because it is impossible to predict the severity of winter weather or of any flu outbreak. As a result of this, the healthcare system must have adequate capacity and plan appropriately to be sufficiently robust to react to these necessarily variable demands. However, at present the National Health Service (NHS) is stretched to its limits and increasingly unable to respond to additional pressures.

Unfortunately, these public health pressures impact significantly on emergency departments, which are already among the most pressured services in the system. This leads to problems elsewhere; generating problems such as reduced bed access and the potential for ‘congestive hospital failure’. The surge in morbidity during the winter months also has a major impact on primary care. The general practice system is, however, under-resourced and has seen an unprecedented increase in demand in recent decades. Emergency departments are also under-resourced; combined, these resourcing pressures put the healthcare system under huge strain, reducing its robustness to absorb spikes in demand during the winter months.

Many short-term responses to the need to find efficiency savings simply involve taking money away from acute trusts already struggling with winter pressures. While there will always be winter pressures, it is possible to create a health system that is sufficiently robust to react to the inevitable but variable additional demands placed on services during winter.

System stability and alignment of working cultures between medical and social care services is needed to allow commissioners to have the time to promote integration between the sector and to develop long-term sustainable responses to funding pressures. A period of long-term stability, to facilitate long-term planning and the development of clear strategy is vital.

The complete solution will not lie within the health system. In order to truly manage winter pressures, we will need to tackle wider public health issues, such as keeping our elderly and vulnerable warm in winter, keeping them well fed, keeping them mobile and ensuring adequate social care.
Introduction
This paper examines the winter pressures on the NHS by looking at both the public health pressures, such as a seasonal surge in respiratory infections, and the pressures that exist within the health system, such as the current crisis in emergency departments.

Our overall aim is to demonstrate that the NHS can, and should, do better at meeting patients’ needs during winter. Whilst immediate funding is necessary and welcome, an adequate response to winter pressures would require systematic and long-term change.

This paper elaborates on the public health and systemic pressures that hamper the NHS’ performance in winter.

Background: population winter pressures
Each year, Public Health England (PHE) publishes a Cold Weather Plan in order to protect the population from harm to health due to cold weather. It provides information and coping strategies for health care organisations, professionals, individuals and the public. The key public health messages are directed toward the general population and are to “get your flu jab” if you are in one of the risk groups, and to keep your home warm.

Despite this preparation, there is still considerable excess mortality and morbidity in winter. A recently released publication from the Office for National Statistics estimates last winter’s excess deaths in England and Wales to be 31,100, which is a 29% increase on the 2011/2012 winter. These are excess deaths, over and above the number of deaths that would be naturally expected. Respiratory diseases show the strongest seasonal variation in death rates and accounts for one third of all excess winter deaths.

Excess mortality in the elderly
The total excess mortality is highest in the elderly, and in women. Where excess mortality appears to be related to temperature, this relationship is complex and uncertain. In the 2012/2013 winter, significant variation in monthly temperature coincided with significant variation in excess mortality – the colder it was, the higher the excess mortality. However, this link is much less clear in other years. For example, 2009/2010 was extremely cold but excess mortality was not exceptionally high. Excess morbidity does appear to be related to low temperatures.

Increased morbidity is highest during the coldest days, but the absolute burden of disease, and thereby pressures on the health service, occurs during days when the temperature does not drop below 2°C. This is because these days are much more frequent than days where the temperature does drop below 2°C and even with such relatively mild temperatures there is already a significant detrimental impact on overall morbidity. At 2°C, a severe winter weather forecast is issued and PHE will scale up from ‘winter preparedness and action’ to ‘severe weather action’.
Cold weather and ice and snow
For the first time this year, PHE clearly distinguishes between the impact of cold weather on the one hand and ice and snow on the other. Cold weather mainly tends to affect the elderly, the very young and those with pre-existing medical conditions. Chronic obstructive pulmonary disorder (COPD) for instance shows a strong seasonally marked pattern of exacerbations (such as severe difficulty breathing) and hospitalisations. Ice and snow mainly affects those of working age, such as (but not limited to) healthy individuals who go out in such weather and injure themselves through slips, trips and falls. Whereas there is a significant seasonal increase in deaths resulting from injury and poisoning, the overall proportion of deaths caused by this remains very small’. However, snow and ice can have a significant wider impact on the economy and the demands on the NHS and other services through, for instance, increased A&E attendances, staff absence and cancelled clinics, which in turn can have an impact on public health and well-being.

Vaccinations
Although the pressures occur throughout the year, vaccinations against influenza – also significantly increase pressure on both general practice and secondary care. GPs will seek to vaccinate those at risk in their community and hospitals will have to ensure that as many of their staff members are vaccinated as possible. PHE reports that the uptake of vaccination for the elderly and those in various risk groups slightly declined last winter, compared to 2011/2012, but increased in pregnant women and healthcare workers’. The Department of Health and PHE have stressed the importance of receiving high vaccination rates in their information letter about the flu immunisation programme’. Vaccine uptake figures for this year are not yet finalised, but PHE reports that 67 percent of those over 65, 43.6 percent of those in risks groups and 34 percent of all pregnant women have taken up their flu vaccine up until 24 November 2013’.

Increased morbidity due to influenza
A large proportion of the excess deaths is caused by respiratory illnesses, mainly influenza like illness (ILI), either directly by ILI in for instance the elderly or because of complications due to a combination of ILI and pre-existing co-morbidities. The impact of ILI on excess mortality is already high, but because of the low case-fatality rate of ILI (not many people actually die of it), the impact on morbidity, and thereby the health system, is even higher. This can be clearly seen in the pyramid below. Influenza and ILI causes annual winter epidemics of varying size and severity. When epidemic, ILI is a major cause of morbidity. All age groups are affected by epidemic influenza, but the incidence is highest in children. However, most hospitalisations and excess deaths occur in the elderly. Influenza alone leads to between 3,000 and 30,000 avoidable deaths in the UK each winter. Outbreaks usually occur at variable times in between November and March and tend to last between six to 10 weeks and peak around week four.
Influenza outbreaks
The way in which influenza affects the population, can be shown by the following pyramid, based on information from the Health Protection Agency (now PHE):

During an outbreak, one in five of the population will be infected. However, the vast majority of those cases will never formally access the healthcare system. Only half of those infected actually show any symptoms of infection, and those who do fall ill mostly do not attend their GP, let alone a hospital. Their illness is either self-limiting, they self-medicate or obtain advice from a pharmacist. It is possible that with better public education, reliance on the healthcare system could be further reduced by increasing the proportion of people that manage their symptoms through self-care. Despite this, ILI still presents a severe burden on the healthcare system. This is because of the high infection rate and because of the complications that may result from it. Influenza can be a life-threatening illness for the elderly and those with underlying chronic conditions. It can also present a risk to the business continuity of the health service if it becomes epidemic among staff or staff of associated services – precisely the reason why meeting vaccination targets is so important.
**Evaluation**
During each summer, PHE publishes an overview of the impact of respiratory viruses – predominantly influenza – on the population during the previous winter, based on multi-source surveillance. Even though it was a mild flu season, last year saw an increase in severity of disease compared to the 2011/2012 season, which resulted in increased pressures on the health service. GP consultations, hospitalisations, ICU admissions, and deaths were all higher than in the previous year. However, severe disease was not as high as in 2009/2010 and 2010/2011.

**Ongoing surveillance and reporting**
It is unfortunately impossible to predict the severity of this year’s “flu” season, as it is mainly dependent on both temperature and the exact flu strain in circulation. The circulating flu strain is important as certain strains are associated with higher infection rates and severity of disease. Furthermore, vaccine efficiency and thereby severity of an epidemic is largely determined by the extent to which the circulating flu strain matches the strains on which the vaccination is based.

However, both PHE and NHS England produce weekly winter health checks from November until March, which help to prepare the NHS for the remainder of winter.

PHE produces weekly updates on their winter strategy and weekly flu reports. A key data source for picking up flu trends are the national sentinel surveillance schemes that run in each of the four nations. They consist of a small but broadly geographically representative sample of GP practices that record the number of consultations for influenza-like illness. Because it is only based on a small sample, it is not necessarily statistically robust but it is very important for picking up trends and indicating an increase in severity of the epidemic.

In England, the Royal College of GPs operates this surveillance system. This year, an online flu survey system has been launched to increase symptomatic surveillance. This is again not an accurate virological measure of disease, but is useful in picking up how many people feel ill and can greatly help in preparing the health service. Research has shown that in the past, calls to NHS Direct about flu and related symptoms provided a valuable advance warning system. This is not included in PHE’s surveillance report this year, possibly because there is no longer a single, national telephone advice system.

NHS England’s reports focus more heavily on direct system pressures and were launched for the first time this year. It reports on emergency department attendance, emergency admissions and so-called situation reports, which indicate pressure points in the service, such as diversions to A&E, handover delays and cancellations of elective surgery.

As this paper has demonstrated, the exact impact of winter pressures cannot be predicted and it is therefore difficult to have a detailed service delivery plan for each winter. There are, however, some clear advance warning signs that can facilitate quick and responsive action in the health service. In order for these warning signs to have optimum effect however, the system will need to give them high importance and be adequately robust to respond as required.
Where in the NHS are systemic pressures located?
It is clear that the increased morbidity in winter will increase demand on the health service. In terms of pressures from within the healthcare system itself, we have identified four specific pressures associated with winter:

- Pressures on A&E
- Hospital bed capacity
- Patient inflow and inappropriate care settings
- Primary care

This section examines each of those in turn.

Pressures on emergency departments
Within the healthcare system, winter public health pressures often impact most markedly on emergency departments. However, an adequate response to winter pressures centres on adequate capacity across the whole health and social care system. If there is little or no excess capacity, there is no room for clinicians and organisations to react to winter pressures. Demographic pressures such as the aging population are stretching emergency department services both in winter and non-winter months. Whilst attendances in A&E in winter months are often lower than in other months, the problems derive from the number and type of emergency admissions. The number of emergency admissions increases significantly in winter and the complexity and severity of the conditions of admitted patients place huge strain across emergency departments.

Respiratory infections, as mentioned, are the main underlying cause for this increase in emergency admissions. Patients that end up in hospital due to such infections are mostly the very young, the elderly and vulnerable; the aging population means that more patients are vulnerable to being admitted as an emergency. Last year there were 5.3 million emergency admissions to hospitals in total; this is an increase of 47 per cent over the last 15 years.

Staffing pressures are also impacting on A&E; there is a recruitment and retention crisis within A&E departments. The General Medical Council (GMC) found that 16 NHS trusts are having problems finding enough staff to run their A&E departments safely. It is imperative that good workforce planning is undertaken to ensure that A&E departments are adequately staffed.

Hospital bed capacity
These emergency department pressures produce differing systemic problems which have knock-on effects for clinical safety, quality and patient experience during winter. All of this puts pressure on other hospital services. The average overall amount of time being spent in a hospital bed has decreased over the last decade, but total occupancy of hospital beds has increased. In 2013 the average occupancy of general and acute hospital beds across England was 88 per cent; in winter this figure rose to nearly 90 per cent. Bed occupancy is variable across the country; over one-fifth of relevant acute trusts reported occupancy at over 95 per cent in winter. The number of hospital beds has declined steadily over the last decade; this is for a variety of reasons such as an increase in the number of day case admissions and an increasing tendency to treat patients in a primary or community care setting. All of
these figures on the surface may not appear dramatic, but in reality they translate to a significant lack of resilience within hospitals.

**Patient inflow and inappropriate care settings**

These pressures cause problems for providers which vary from institution to institution, and can vary significantly in form. Pressures can mean that patients are being cared for in inappropriate environments. This is because once admissions figures approach a certain level, in-built structural problems and limits begin to present. The availability of appropriate hospital beds is one of the major issues; high admissions can mean that patients may be admitted to any bed that is available, not necessarily within the ward that they need. Hospitals can also reach capacity, this means new patients are unable to be received or examined, this is known as congestive hospital failure. As the pressures increase, this is becoming an increasing possibility for many providers. Innovative ways of working have been trialled by clinicians to help reduce this inflow of patients, one positive example can be found within a pilot in Kettering General Hospital.

**Kettering General Hospital – Care in appropriate settings**

Kettering General Hospital, together with its CCG partners in Corby and Nene, is one of many hospitals trialling new ways of improving the flow of patients through their emergency department. Within their winter plan, Kettering is piloting a project where a GP will be based within their emergency department from 17:00 hours until midnight. The GP will assist with the triaging of patients within A&E to divert patients away from emergency admissions and towards individual, clinically appropriate options for treatment. This could of course include being admitted as an emergency; however it could also include being directed into primary or community care, or even helping the patient book a GP or hospital appointment as an alternative, if appropriate. The aim is to reduce unnecessary emergency admissions and ease the pressures on the emergency department over winter, and is part of a wider winter strategy aimed at increasing the flow of patients through the emergency department.

**Primary care**

As this document has demonstrated, the vast majority of patients with for example, flu, do not formally enter the health-care system. However, those that do, mostly enter the healthcare system through general practice. The seasonal increase in morbidity presents itself within a general practice system that is currently experiencing unprecedented demand.

**Growing demand in primary care**

General practice has seen an unprecedented increase in demand over recent decades. Within general practice, there were over 300 million consultations in 2009; this is 80 million more than in 1995. Data was last collected in 2009 but if demand has increased in-line with previous years we can expect the number of consultations per year to now stand at roughly 340 million, 120 million more than in
The average member of the public now sees a GP nearly six times a year; this is twice as much as a decade ago. There is a lack of national data currently collected on GP workload, but it is likely that this figure is much higher than these basic projections suggest. The BMA is undertaking a research project to quantify and analyse GP workload to fill this gap. This increase in demand has not been met with a corresponding increase in resourcing and staffing, meaning that many GP services are already under enormous pressure. There are examples, however, of clinicians leading the way to help reduce this demand. One such example can be found in Derbyshire Health United’s RightCare plans:

**Derbyshire Health United – RightCare plans**

Derbyshire Health United (DHU) is an integrated care service which was borne out of reacting to winter pressures, their RightCare plans have been seen as an innovative way of reducing emergency admissions during winter. RightCare plans are created for those patients considered by clinicians to be vulnerable to hospital admission, such as those with complex long-term needs. These plan their healthcare across primary and secondary care. A full, patient specific plan is accessible by all stakeholders within the local healthcare economy, meaning that, no matter the hour, or where the patient presents, clinicians are better able to provide appropriate care. These plans are drawn up by a patient’s own GP (or other healthcare professional) and shared within DHU via a secure email. The plan is kept until the leading clinician decides to take it off the list. The plan is kept by DHU which also provides the out of hours GP service in Derbyshire. This allows proactive action on winter pressures, and gives patients the right care, at the right time, with the aim of reducing the burden of unnecessary emergency admissions”.

**GPs**

General practice is adept at responding to seasonal pressures, but it is vital that GPs and their practice teams have the support and resources to be able to respond flexibly to the needs of their patients. Analysis from the Centre for Workforce Intelligence concluded that the GP workforce is under considerable pressure, with insufficient capacity to meet expected patient needs”. Initiatives, such as the QOF changes announced in the 2014-15 GP contract changes, designed to reduce bureaucracy and free up GP time to spend on patient care, will go some way to alleviate the pressure on general practice services. In addition, GP practices need resources to develop the practice team and invest in additional staff if necessary. GPs will then have capacity to develop innovative solutions to improve access, such as working closely with neighbouring practices to extend opening hours, or develop telephone triaging systems during busy periods.
Self-care is increasingly being seen as a key method of helping reduce demand on over-stretched practices, especially during winter. Empowering people with confidence and good information enables patients to have greater control over their healthcare. Self-care can better prevent ill-health in the long-term, and can reduce the burden on general practice in winter. It can encourage patients who have conditions which do not necessitate being seen in general practice to better manage their own healthcare needs, thus reducing demand.

St Lawrence Surgery – Self-care
St Lawrence Surgery in Worthing has been highlighted by the Self Care Forum as a model of self-care excellence. With a focus on patient empowerment, the surgery aims to better inform their patients about how they can look after their own health and their family’s health, without the need for GP appointments. Their model relies on all of their staff having a consistent approach to self-care, with all patient facing staff signing up to the surgery’s self-care strategy. The surgery has created a patient participation group, who meet seven to eight times a year, as well as having a self-care champion for the practice. The surgery uses fact-sheets of common illnesses such as colds, head-aches and ear aches, also making them available digitally, to inform patients about these conditions. These factsheets include information on systems and the normal time-scales on how they progress, helping to reassure patients that nothing more serious is wrong. The factsheets also give information about what symptoms could indicate that there are more serious problems, and show patients what to look out for. These factsheets also give basic advice on how to treat these minor illnesses, e.g. through diet and rest, as well as clearly demonstrating how drugs such as antibiotics will not cure these ailments. The patient participation group is also arranging events aimed at empowering and informing patients such as coffee mornings and even pilates classes, the hope being that this holistic view will also help patients with conditions such as depression.
Hospital funding

Enforcement of efficiency savings through the tariff
The Nicholson challenge, to find £20 billion of recurring efficiency savings in the NHS by 2015 has placed many trusts under severe financial pressure. Many short-term responses to the need to find these efficiency savings simply involve taking money away from acute trusts already struggling with winter pressures. The efficiency savings, applied equally to all secondary care providers annually, hamper innovation and increase pressures on trusts, especially during the winter. A £500 million winter pressures fund has been made available to acute trusts and foundation trusts who were perceived by NHS England to be particularly vulnerable to winter pressures”, many of whom are in severe financial difficulty. The government has recently announced a further £150 million for the winter pressure fund for other acute trusts not covered by the initial fund. At the same time these trusts are experiencing a reduction of their income through the tariff. 20 of the 34 acute NHS Trusts eligible for the £500 million winter pressures fund are in operational deficit. At the end of July 2013, half of all acute NHS trusts were forecasting an operational deficit, with many demonstrating operational pressures in urgent and emergency care”. The winter pressures fund is not sufficient to tackle the operational issues facing these trusts in winter as this requires the capacity to react to the unexpected; trusts running a significant operational deficit whilst having their overall funding reduced will only diminish such capacity further.

The short-termism of many of the current efficiency savings is also preventing longer term, better value efficiency savings from being made. This in turn hinders progress in tackling the underlying structural issues which allow winter pressures to present serious problems. A longer term solution, looking at efficiency savings over a longer time-scale would allow longer term investments to be made to adequately tackle winter pressures”.

Conclusions
While there will always be winter pressures, it is possible to create a health system that is sufficiently robust to react to the inevitable but variable additional demands placed on services during winter.

As the description of the structural problems above indicates, it would be too simplistic to point at any one issue as the cause of the NHS’ failure to adequately address patients’ needs during winter. A solution will be equally complex and systemic. The case studies we have provided throughout this document illustrate the power of working together better, using integrated working in dealing with winter pressures. System stability and alignment of working cultures between medical and social care services are needed to allow commissioners to have the time to promote integration. A period of long-term stability, to facilitate long-term planning and the development of clear strategy is vital.

The complete solution will not lie within the health system. In order to truly manage winter pressures, we will need to tackle wider public health issues, such as keeping our elderly and vulnerable warm in winter, keeping them well fed, keeping them mobile and ensuring adequate social care.
References


