Ensuring medicines are stored under appropriate environmental conditions
June 2017

<table>
<thead>
<tr>
<th>Trust name</th>
<th>North West Boroughs Healthcare NHS Foundation Trust</th>
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<tbody>
<tr>
<td>Provider type</td>
<td>Mental health</td>
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<tr>
<td>Site (if applicable)</td>
<td>Trust-wide</td>
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<tr>
<td>Core service</td>
<td>Trust-wide</td>
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<td>CQC rating (Overall)</td>
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The challenge

In the NHS medication is often stored by wards and clinics in rooms without air conditioning or other means of local temperature control. The majority of medicines require storage at room temperature (15°C to 25°C).

North West Boroughs Healthcare NHS Foundation trust has services based in parts of three north west counties – Cheshire, Merseyside and Greater Manchester – and covers 15 boroughs. The trust monitored room temperatures on a daily basis and for most of the year temperatures were within the required range but during the summer, they would often exceed 25°C (referred to as a temperature excursion).

Following an internal review, the medicines management team (MMT) noted that, although minimum and maximum temperatures were documented on a daily basis, temperature excursions of over 25°C hadn’t always been reported to the team. They also noted that temperature excursions weren’t always a reflection of environmental temperature – occasionally they were due to practice issues; if, for example, the thermometer was not reset after reading the room temperature or stocking the fridge.

The solution

Following these findings the medicines management team:

- launched a communications campaign to encourage wards to report temperature excursions and complemented this with training sessions for ward staff detailing the use of the thermometers, including how to reset thermometers correctly

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1 Until 1 April 2017 the trust was known as the 5 Boroughs Partnership NHS Foundation Trust. It historically provided treatment, support and guidance for a wide range of physical and mental health issues, as well as learning disability services to people living in the five boroughs of Halton, Knowsley, St Helens, Warrington and Wigan.
• where excursions were still happening, tried to reduce the core room temperature by physical means including portable fans (although this quickly proved ineffective)

• updated trust guidelines after reviewing new national guidance from Quality Control Northwest on appropriate management of medicines. The guidance sets out the importance of temperature monitoring and recommends a management strategy to assess if any action is required to safeguard the medication.

After introducing the new trust guidelines, the MMT decided to engage pharmacy technicians in further research on excursions.

Every day the technicians when visiting the in-patient wards and some community clinics storing medication, reviewed temperature recordings. Where excursions had happened, they looked for potential causes (for example, failure to reset thermometers or fridge door left open for an extended time). They collated daily temperatures and forwarded them to the chief pharmacist and medical director initially on a weekly and then a daily basis. Where they found issues relating to poor practice, they escalated these to operational services for action.

Where legitimate excursions had occurred for a consecutive seven-day period, they did a risk assessment and appropriately amended the shelf life of the product. A summary of any interventions was reported to the medicines management committee.

While carrying out these interventions, the team discussed the issue extensively with their professional colleagues elsewhere, including local Quality Control North West. This resulted in the opportunity to use Tinytag data loggers: accurate time monitoring devices which measure the room temperature on a pre-defined basis throughout the day. The Tinytags were placed in units of concern over a two-week period, so that they could get more detailed information on how long the temperature excursions lasted, and thus distinguish between short excursions and extended excursions. The data gathered further informed the team, enabling them to make a decision on the potential impact on medicines and therefore the need for further intervention.

Equipped with this information, the MMT identified priority areas of concern and produced a capital business case for air-conditioning equipment.

Enablers and challenges

Although all trusts monitor temperatures, occasionally ward staff record temperature excursions but don’t escalate them appropriately, which means they can’t be dealt with in a timely manner. This may be because of competing pressures at work or lack of awareness of the potential impact on the integrity of medicines. The trust overcame this issue by involving pharmacy technicians in the process of auditing documentation and reporting recorded data.
At the same time, they ran an effective communications campaign to raise awareness and engage staff about this issue, and emphasise the importance of recording temperatures and reporting temperature excursions, so that appropriate actions could be taken.

**Impact**

The team was able to uncover the source and severity of temperature excursions and design appropriate interventions. Medicines are now stored safely and extended temperature excursions are infrequent.

**Next steps and sustainability**

In some units, installation of air conditioning was the only sustainable solution, given that moving medicines to another location and/or reducing the shelf life of the medications on a regular basis was too resource intensive. Otherwise the problem would have persisted for years.

For the few areas that store medication and don’t have air conditioning, excursions are infrequent and appropriately monitored and investigated with further action taken, where the existing arrangements are insufficient.

**Want to know more?**

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