

# Closing evidence to practice gaps:

## an end to an attack of the vapours?

### INTRODUCTION

Steam inhalation therapy for the treatment of respiratory conditions has been a feature of health practice since antiquity and remains in widespread global use today.<sup>1</sup> The use of steam inhalation in Western European tradition gained popularity in Victorian times, with images of both young and old inhaling steamy concoctions from a bowl becoming familiar in popular culture in many countries. The evidence base for this practice has never been clear, with Cochrane reviews giving equivocal results for effectiveness for the common cold,<sup>2</sup> bronchiolitis,<sup>3</sup> and croup.<sup>4</sup>

Despite this, steam inhalation continues to feature prominently in many health conversations, in much of the complementary and alternative medicine literature, and appropriately as part of research into pragmatic interventions for respiratory infection.<sup>5</sup>

The time for the translation of research evidence, for or against a health innovation into clinical practice, is commonly quoted as 17 years,<sup>6</sup> making the two and half thousand years for a clear decision on the therapeutic impact of steam inhalation somewhat of an outlier.

### A DANGEROUS HISTORY

First do no harm is an important starting point. In the case of steam inhalation, the lack of effectiveness is partnered with frequently recorded dangers, notably the burns caused by spillage of hot water to the body or direct inhalation of steam to the respiratory tract.

The dangers of scalds and burns from steam inhalation have been reported over many years and from many countries. The *BJGP* has published on this topic for over 25 years<sup>7,8</sup> and the evidence is corroborated with other published UK and international studies.

The article by Al Himdani *et al* in this month's issue of the *BJGP* is a further reminder of the dangers of steam inhalation in relation to paediatric burn injuries.<sup>9</sup> The study also includes a small pragmatic survey suggesting that over 80% of the UK GP respondents surveyed recommend steam inhalation therapy. This raises important questions about why therapies with no evidence of effectiveness, but evidence of harm, continue to be accepted and even endorsed as part of GP advice.

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### WHAT DO GPs SAY AND WHAT DO OUR PATIENTS ACTUALLY HEAR?

The majority of the injuries sustained in the current case series were scalds caused by tipping hot water from bowls. It seems very unlikely that GPs would recommend placing bowls of hot water on laps or inhaling steam directly from a boiling kettle, yet these injuries are recorded in this and other literature. An important point from the Al Himdani study findings is the opportunity it gives us to reflect on the gap between the giving of advice and its implementation: what our patients actually do when broad treatment guidance is given without specific cautions.

There is now an extensive literature on the language and content of the GP consultation, with insights into the complexity of doctor-patient interactions and evidence that misunderstandings and miscommunication occur frequently.<sup>10</sup> Furthermore, 40–80% of medical information provided by healthcare practitioners is forgotten immediately and almost half of the information that is remembered is incorrect.<sup>11</sup>

From direct observations of GP consultations it is also clear that our instructions in many areas of clinical practice lack specificity. In contrast to specific instructions regarding taking the tablets we prescribe, GPs give often very general advice to patients about other therapeutic or lifestyle interventions such as dietary advice or exercise. In this instance, phrases such as *'... good idea to get her to inhale some steam'* can be interpreted in several different ways. There are thus many reasons why our patients would fail to hear or mishear our instructions about steam inhalation.

### THE SCIENCE BEHIND ANECDOTE

Societies have always placed great store by a body of wisdom held in perpetuity by what Granny said: old wives' tales and the knowledgeable auntie down the

road. Granny says that bed socks can help older people sleep (true),<sup>12</sup> that going out in the cold with wet hair increases respiratory infections (probably doesn't), or that the influenza vaccination can give you flu (definitely not). The 'Granny factor' is worth paying attention to as many current evidence-based approaches have arisen from verifying an original cultural meme. Examples include breastfeeding on demand, the benefits of a good night's sleep, or the value of mindfully focusing on problems in the present.

The widespread belief in measures such as steam inhalation is backed by long-standing anecdote. In this case the evidence base for its broader use is sufficiently incomplete that before consigning all steam inhalation to the vapour bowl of history, there is a case for undertaking general practice research that could explore appropriate outcome measures for a safe version of the practice, that is, being in a warm, steamy bathroom. A study of steam inhalation for the common cold measured subjective symptom scores for nasal congestion, nasal drainage, and sneezing, and objective measures of nasal resistance,<sup>13</sup> but not any overall measure of patient wellbeing. The Cochrane review on bronchiolitis and steam inhalation found only one study (156 children) met the criteria for analysis, and concluded that there was *'... insufficient evidence to inform practice regarding using steam inhalation or mist therapy for acute bronchiolitis'*.<sup>3</sup> As always, the absence of evidence does not equate to the evidence of absence.

The Al Himdani article is also a useful pointer on the need for more research focused on what advice GPs actually give, and how our patients respond to it. In the case of steam inhalation therapy it would be helpful for further research on what GPs recommend and what patients actually do, with larger numbers and in different settings.

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### KEEPING UP TO DATE WITH WHAT MATTERS

As generalists, GPs have an increasingly difficult job keeping abreast of the ever expanding content of available medical information and applying intervention science to often troublesome but self-limiting medical problems. Conditions such as the common cold or sinusitis do not have the cachet of congestive heart failure or diabetes, but are important nonetheless to the lives of our patients. There needs to be more academic expertise directed at issues such as irritating coughs, ear wax, fungal nail infections, ‘rheumatism’ ... and the main experts in these areas are GPs.

### AN END TO AN ATTACK OF THE VAPOURS

The article by Al Himdani makes its own contribution to the literature on the dangers of some methods of using inhaled water vapour with children and is welcome for that. In doing so it highlights an evidence to practice gap: where there is a significant and long-standing body of evidence about the potential for harm alongside a lack of evidence for effectiveness. The message here is very clear. Enough is enough; it is time to end tacit support for inhaling steam from bowls of hot water. Despite the veneer of homespun wholesomeness, this is dangerous practice. There have been other game-changing moments where accepted practice has been scrutinised and found not only wanting but also potentially dangerous. Our previous enthusiasm for local steroid injection of lateral epicondylitis (tennis elbow) was appropriately and convincingly undermined by an RCT in *JAMA* showing that, although corticosteroids reduced pain for these patients as early as 4 weeks, they were 4 to 5 times more likely to be worse off in the long run.<sup>14</sup>

In addition, the article contains other important messages. It provides a timely reminder that patients may not always understand what we think we are saying, frequently forget what is said in consultation, and may also translate our benign good intentions into potentially dangerous practice.

Finally, we should note that, where there is a gap in evidence for issues that

may externally appear mundane but have meaning and which resonate in the minds of GPs and our communities, there is an important role for academic departments in undertaking clinical research to provide a secure evidence base for appropriate outcome measures and safe practice.

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