**Introducing crowdsourcing as a way of improving the maternity experience: Part 1**

**Abstract**

This is the first of two papers which introduces crowdsourcing as a tool which offers creative solutions to address everyday challenges in maternity care. In this first paper, crowdsourcing is defined and discussed demonstrating how it can be used as a tool to discover rich and relatively low-cost ideas to improve maternity services. By engaging service users in crowdsourcing activities, quality improvement is shared and focused on issues which emerge from practice. This process has the potential to generate more innovative ways to improve maternity services and women’s experiences of care. In the second paper, the discussion will centre on a service evaluation project which evaluated midwives involvement in a workshop as part of a quality improvement project.

**Keywords:** crowdsourcing, innovation, quality improvement, midwives, Whoseshoes®; #MatExp.

**Introduction**

Quality in healthcare services has been a contentious subject over the last decade. Recent reports have highlighted previously unacceptable poor practice in failing NHS Trusts (Francis 2013, Kirkup, 2015). Expectations of the service user are high and some have become experts in how healthcare should be delivered (Blunt, 2014). The fundamental element in quality of care in the NHS is the experience of the service user (Crowe & Sharma, 2016, Care Quality Commission (CQC) 2016, Granville, 2006). Maternity care relies on the experiences of women and their families to shape service improvements and recognise problems (Wenzel & Jabbal, 2016). In some cases, the service user has the power to influence and redesign local, regional and national policy through their persistence on social media (Newburn, 2017).

The National Maternity Review, Better Births (National Maternity Review, 2016) outlined how maternity services are required to change the organisation and running of services to provide more personalised, safer care with continuity of carer. Better Births concluded that using technological innovations sourced from a variety of fields could add a richness of ideas and practical solutions to facilitate improvements. Co-designing services with service users and healthcare providers should be the norm and has been encouraged for over a decade (Granville, 2006).

Changes to the quality of care in maternity services not only enhances user experiences, but in the long term may contribute to reducing NHS costs (Blunt, 2014). The challenge is to engage other health professionals involved with maternity services to use innovative ideas to improve quality. Without collaboration from other disciplines, it becomes more difficult to ensure personalisation of care in practice. A multidisciplinary group of healthcare professionals and service users is required to fulfil creativity in quality improvement, within the culture of transformational leadership (Granville, 2006). In the long term, these changes may improve productivity and increase staff satisfaction in the workplace, which in turn may result in less absenteeism, a reduction in negligence claims and more positive outcomes (Blunt, 2014).

**Definition**

The term crowdsourcing was originally used by Jeff Howe in 2006 to describe how problems could be solved by using ideas sourced from a large group of people (Howe, 2006). Crowdsourcing has been applied in many disciplines such as business and many areas of innovation, and can be tailored to solve a myriad of problems such as asking consumers to design new flavours of crisps and new ideas for Lego products (Corney et al, 2010).

By using a large public audience, typically online, solutions for conundrums can be found quickly and relatively cheaply (Swan 2012). Problem solving for a cumulative result is also achieved not only via the Internet, but also in organised workshops to obtain ideas, mixing a top-down bottom-up approach where innovation and efficiency are the objectives. Knowledge sharing with peers allows creativity and utilises otherwise unknown expertise to be implemented in the workplace (Ye & Kankanhalli, 2017). In healthcare, different perspectives from staff, patients and the wider public, illustrate the necessity for change, and provides diverse solutions for change, thus improving services (Granville, 2006). Blunt (2014) suggests that to improve user experience in healthcare it would be prudent to assess and employ strategies used in other areas of business. Using crowdsourcing in maternity services has yet to be established.

Crowdsourcing as a concept is based on the social exchange theory, where human interactions are based on a reward or punishments system (Ye and Kankanhalli, 2017, Martinez, 2017). An individual’s participation in crowdsourcing is seen to tailor their ideas to solve identified problems depending on whether there is a reward for engagement. This implies an underlying agenda to participation in crowdsourcing, and knowledge sharing behaviours (Ye & Kankanhalli, 2017). The social exchange theory established that knowledge sharing behaviour is welcomed and rewarded, and problem solvers contribute collectively. Crowdsourcing is particularly useful when a problem appears ambiguous or requires substantial creative input to solve. Crowdsourcing allows a direct connection and communication with service users (Edwards, 2011), and can be used as a means to address problems as experienced in practice.

**Using crowdsourcing to improve maternity experience**

In 2014 a grass roots social media campaign known as #MatExp emerged with the aim of improving maternity care experiences (Table 1), and is founded on a transformation tool (WhoseShoes?®) that promotes creativity and choice in healthcare, and constantly challenges attitudes and assumptions.

### Inert Table 1

**Fig 1. Crowdsourcing using the Whoseshoes® approach.**

WhoseShoes?® (Wilcock, 2016) uses a bespoke game in a workshop setting with a variety of healthcare professionals and service users considered a crowdsourcing collective (Fig 1). Throughout the structured workshop, participants are encouraged through discussion to bring real experiences from multiple perspectives to the table. Participants generate various possible improvements to the specified areas of maternity care laid out in the WhoseShoes?® game. (Fig.2). The philosophy of #MatExp and WhoseShoes?® is that person-centred practice, with crowdsourcing as a means to produce creative and sometimes radical changes, will improve the quality of care

**Insert Fig 2 WhoseShoes?® board**

#MatExp used a specifically designed version of the WhoseShoes?® board game. Specifically designed cards and poems make up the WhoseShoes?® board game, adapted by members of #MatExp to spark discussion and excite change. Participants pledge a commitment for change related to a specific aspect of care with an action plan, which is followed up by workshop facilitators to ensure that ideas become reality. Crowd sourced material also comes from online blogs, Facebook, Twitter, networking, the Friends and Family comments, charities and the Maternity Voice Partnerships.

**Literature review**

**Methods**

A preliminary review of the available literature relating to the use of crowsourcing in the maternity services was undertaken as part of a Masters degree. By inputting the term ’crowdsourcing’ into a general search, a total of 351 papers were found across many disciplines such as medicine, health, psychology, agriculture, finance and information technology. Many of these articles were focused in Eastern Asia, where industry utilises the crowd mainly online to discover effective problem - solving activities (Corney et al, 2010).

A more detailed search of literature published in English within the last ten years, using CINAHL, Science Direct, MEDLINE with keywords and synonyms such as: ‘crowdsourcing’, ‘crowdsourcing and midwives’, ‘crowdsourcing and maternity’ and ‘crowdsourcing and improvement’ yielded limited literature, producing mainly articles related to crowdsourcing outside healthcare. A hand search of journals including The Royal College of Midwifery (RCM) publication Midwives, The Practising Midwife and MIDIRS, offered no primary research on crowdsourcing in maternity care. Using the words ‘crowdsourcing and midwives’ resulted in one article (Adams, 2011), which appeared across many databases.

From all this searching activity, nine articles were selected due to their focus of crowdsourcing as a quality improvement tool. These were categorised into two groups; crowdsourcing and patient experience (Adams 2011; Weiner 2014) and crowdsourcing and social media (Shoenberg 2012; Showalter 2012; McCartney 2013; Brabham et al 2014; Sinclair 2014; Tepper 2014; Choo et al 2015).

Four general issues emerged from the discussions within these articles; crowdsourcing definitions, crowdsourcing and patient experience, blurring of boundaries, and crowdsourcing as a technological innovation. In the absence of primary research, these themes were relevant to the discussion of the uses of crowdsourcing and how it could be translated into providing high quality maternity care.

**Results**

**Crowdsourcing definitions**

Jeff Howe, the creator of the term crowdsourcing acknowledged that most technological advances stem from anyone with a new idea (particularly amateurs). McCartney (2013) noted that crowdsourcing is fuelled by information technology and highlighted that healthcare categorises crowdsourcing as a medical subject used for collecting feedback. Adams (2011) defines crowdsourcing as a reporting tool for policy reform, quality improvement and product development.

**Crowdsourcing and patient experience**

Currently, UK healthcare favours the use of tools such as the Friends and Family questionnaire to gather real-time feedback from patients regarding their care. Although useful to improve services, this type of feedback may be exploiting women and their families to provide positive comments as the questionnaire is often completed on leaving hospital with a new baby. Other countries such as the Netherlands and the USA encourage patients to review their care and publicise their experiences using online websites. Adams (2011) discusses websites that actively encourage service users to publicise their experiences, and takes her data from six international websites, asking patients to ‘share - your-experience’ of care. This paper acknowledges that the voice of the user is vital in shaping care, and previous quality control tasks that were performed internally, now rely on crowdsourcing for completion.

**Blurring of boundaries**

Showalter (2012) recognises the potential benefits of using crowdsourcing in healthcare, but she shares the view that there is an obvious difference between doctor and patient, where information can be sought on the internet to challenge healthcare professionals. Shoenberg (2012) shares the views of Weiner (2014) regarding bias and the idea of blurring boundaries between qualified staff and patients to improve science. Equally, Choo et al (2015) consider the benefits of crowdsourcing through social media as a way for healthcare professionals to share their knowledge and engage with service users, medical students, and other colleagues. Alternatively, McCartney (2013) does not mention the blurring of roles, but suggests that the crowd is ‘employed’ for a specific task and therefore must have the knowledge to participate, suggesting that there are clearly defined roles needed for crowdsourcing to be successful. A belief in a shared platform for a united healthcare system is presented by Sinclair (2014), since it is easy for the general public to gain access to previously unknown information once only available to healthcare professionals, and this can distort traditional patient - doctor roles.

**Crowdsourcing as technological innovation**

All the literature included in the review favoured the concept of crowdsourcing to improve care, working conditions for staff, and an overall general positivity towards health care. Sinclair (2014:39) noted that technology provides a ‘platform for shared learning’ on a global level, which in order for midwives to provide excellent care, must be used effectively and consistently. More recent commentaries from the King’s Fund allude to crowdsourcing as the future of the NHS (Mantell 2017). Choo et al (2015) propose that health care workers have been given an ideal and unique opportunity to channel the latest innovations in technology and this responsibility to facilitate change lies wholly within health care. Brabham et al (2014: 179) emphasise the value of crowdsourcing as an online activity as ‘…a highly structured process from the organization’s side, drawing on the creativity and intelligence of an online community in an open, but controlled, way.’ The reach of the on-line community enables larger scale interactions to take place. They suggest that it provides a flexible approach which has a shared top-down and bottom-up process, in which solutions are highly relevant to the intended audience as members are involved in discovering those solutions.

Whilst there appears to be limited primary evidence of the use and impact of crowdsourcing in maternity care, maternity has in fact used crowdsourcing to improve care (Fowler & Patterson, 2013), and this has been illustrated with the use of WhoseShoes?®. In addition, The National Maternity Review, Better Births (National Maternity Review, 2016) provides another example of how crowdsourcing in the form of an online survey for staff, women and families, was used to rate and suggest improvements in maternity care.

From the limited literature identified for a preliminary review, it appears that the potential power of crowdsourcing is acknowledged but it is not used creatively, and a more in depth evaluation and study of crowdsourcing is needed. As more innovative solutions to solve problems within maternity care are required, service providers will need to consider the use of face to face crowdsourcing opportunities in addition to the virtual environment.

**Conclusion**

This paper has introduced the concept of crowdsourcing as a means to offer creative solutions to address everyday challenges in maternity care. Whilst the definition and use of crowdsourcing as part of existing transformation tools such as WhoseShoes?® has been illustrated, there appears to be an absence of primary research on the effectiveness of crowdsourcing in maternity services and the involvement of midwives within this activity. Current literature appears to illustrate the use of crowdsourcing via the internet, although popular with other industries, it is somewhat disconnected in maternity from where solutions are required. Using crowdsourcing in a workshop scenario, where creative face to face discussions take place, may elicit solutions that are meaningful and realistic. Part 2 (to follow in a future issue) will present the findings of a service evaluation which explored midwives views of participating in a crowsourcing activity.

**Declaration of interests**

The authors have no conflict of interest to declare.

**Key points**

• Crowdsourcing is a cost effective way of improving care in maternity services.

* The role of the service user is crucial to the process of quality improvement in the maternity services
* Crowdsourcing can be used face to face in workshops and also online.

• Using a multidisciplinary approach to improve care is highly effective.

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| **CPD reflective questions** |
| Define crowdsourcing? |
| Explore the ways in which problems are addressed in your practice area? |
| In what way do service users currently contribute to the improvement of care in your practice area? |
| Identify aspects of care within your practice which could be the focus of a crowdsourcing activity? |

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**Tables and figures for insertion**

### Table 1: Aim of #MatExp

* Encourage and empower users of maternity services to join conversations about their experiences of maternity care, and what really makes a difference to that experience.
* Get health care professionals (in and beyond the NHS) and local communities to listen and work in partnership with women and families to improve maternity experiences.
* To enable anyone to take action to improve maternity experience, however big or small, whoever you are: user, partner, community group or NHS staff.

### Resource: <http://matexp.org.uk/>



**Fig 2 WhoseShoes?® board**