REPORT ON EXPLORING THE POTENTIAL OF AN ONLINE COMMUNITY OF PRACTICE TO EMPOWER HEALTH VISITORS AND IMPROVE SERVICES FOR CHILDREN AND FAMILIES: A PILOT PROJECT

Final report

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INTRODUCTION

This report is from the pilot study on the development and evaluation of an Online Community of Practice to empower health visitors. It is based on findings from a two-year pilot study to explore how health visitors (HVs) shared, managed and co-produced knowledge in a virtual space in order to improve practice. The study was informed by calls within the Health Visitor Implementation plan to develop a reinforced and re-energised health visiting workforce through a process that enabled them to increase control over and improve practice (DH, 2011). With funds from the Burdett Trust for Nursing empowerment call, the pilot project sought to develop and evaluate a mechanism through which HVs could co-produce knowledge and develop an evidence-base to enhance professional learning and ultimately enhance practice.

The aim of the pilot project therefore was to empower HVs by establishing, evaluating and disseminating a virtual Community of Practice of Health Visitors. Divided into two overlapping phases over a two year period, work entailed the following:

- **Year 1**: Develop, pilot and evaluate a CoP-HV within 2 Health Trusts in England.
- **Year 2**: Enhance the CoP-HV content and scope, test and evaluate effective dissemination of the CoP for all HVs.

The objectives set out to fulfill the two year plan for the project involved the following:

1. Undertaking a short scoping study of the wider literature, HVs and parents to identify what practitioners and parents would want from a CoP through the co-production of knowledge
2. Working with the Open University to set up the technical requirements necessary to offer the on-line CoP and to launch it within 2 NHS Trusts
3. Working with NetMums as part of the project’s strategy on user involvement (an online support organisation) to explore how parents can contribute to the co-production of knowledge for HV practice.
4. Undertake a series of marketing and training campaigns to introduce HVs to the CoP
5. Produce and facilitate the use of evidence and practice digests via the CoP, in order to stimulate discussion, debate and discursive practice around key areas of knowledge management.

6. Develop a format for regular, brief update to all HVs to disseminate emerging ideas and learning from the CoP

7. Carry out on-going process and impact evaluation, based on realist evaluation techniques.

THE COMMUNITY OF PRACTICE MODEL

“Communities of Practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al., 2002: 3). Developing a Community of Practice model via an online platform, presented a useful way to respond to calls for empowering the health visiting workforce by providing a means to:

- Provide access to verified best practice, clarified information, mentorship and peer support from more experienced health visitors.
- Develop a robust web-based tool to allow practitioners share expertise (resources, experiences, problems and solutions, tools, methodologies) and promote learning in order to empower the profession – whilst overcoming geographical differences,
- Reduce professional isolation and increasing the visibility of everyday health visiting practice through the articulation of everyday practice via an online mechanism.
- Make evident the tacit knowledge acquired and accumulated by the health visitor over many years of working with families within specific locality in order to reveal the ‘person in situation’ thrust that at the heart of the health visitor’s orientation to practice.

The intervention of the online Community of Practice was intended to provide health visitors an opportunity to be at the forefront of developing a practitioner-led knowledge sharing network for peer reviewed evidence, suggestions and an opportunity to collectively undertake robust discursive debates about what works in practice.

The virtual space would provide access to an evidence base that assembled the collective experiences that health visitors employed to make judgments about health issues in the community based on practical evidence and experiences that could support mentorship and learning for existing and newly qualified health visitors.

The Evidence hub: a collective intelligence tool developed by the Knowledge Media institute team at the Open University facilitated the development of the Community of Practice to enable health visitors across organisations share best practices.
The two year project to develop and evaluate how the intervention of the evidence hub would empower health visiting practice was a partnership between the Institute of Health Visiting (IHV), Centre for Research into Primary and Community Care, University of Hertfordshire (CRIPACC), Barts Health NHS Trust and Hertfordshire Community Trust and Netmums. A total of 215 health visitors used the evidence hub during the pilot from October 2012 to May 2014 to share issues and exchange resources/evidence underlying practice.

Marketing, training, dissemination and evaluation activities to develop, pilot and evaluate the outcomes from the evidence hub’s use within the 2 health trusts in England (Barts Health NHS Trust and Hertfordshire Community Trust) was conducted for the duration of the two year project by a research fellow (Faith Ikioda), a research assistant (Claire Reidy) and the project’s principal investigator (Sally Kendall); all based at the University of Hertfordshire.

Underpinned by a realist evaluation strategy, data from focus groups with health visitors, focus groups with parents, online surveys, content analysis of online discussion on the platforms and social network analysis suggest that participating in debates and discussion in an Online Community presents an effective strategy to enhance continuing professional development and knowledge sharing in health visiting; albeit some challenges around technology implication and time considerations for practitioners to participate effectively.
Empowering Health Visitors...

To establish and evaluate a virtual Community of Practice (CoP) for health visitors as a means of empowering health visitors

Funded by Burdett Trust for Nursing

A defined identity of a coherent professional group
An opportunity to interact across organisations
Health Visitor Community of Practice
Engaging the workforce: using innovative ways, enhancing practice to make a real contribution to children and families
Share ways of addressing reoccurring problems
Engage in joint discussions and forums
Facilitate the use of evidence and practice digests

Next steps
- Determine what health visitors want from CoP
- Determine what parents want from CoP
- Establish an IT platform
- Market a campaign to introduce CoP
- Establish successful outcome criteria for evaluation
- Develop more skilled, confident and empowered health visitors providing more efficient informed evidence based services for families

A partnership: The Health Visitor Task Group of the Royal Society of Public Health, Hertfordshire Community NHS Trust, The University of Hertfordshire, The Open University, Barts and The London NHS Trust, Netmums

Researchers: S Kendall, C Adams, R Bryar, S Cowley

Figure A: Poster Campaign for the project (Courtesy of the Hertfordshire Community Trust)
PREPARATORY WORK TO SET UP THE PLATFORM

As part of the pilot, teams of health visitors were widely consulted about the platform and expectations from the emerging Community of Practice (See figure A). A team of health visitors and the research team at the University of Hertfordshire consulted with the Open University to determine that the evidence hub was the appropriate platform to support the Community of Practice.

In addition and as a way to seed initial discussions on the platform, an online survey was conducted to through an existing online email discussion group Senate for Health Visiting and School Nursing SENATE-HVSN.

SENATE-HVSN is an email discussion group started in 2000 and moderated by Dame Professor Sarah Cowley as an online community which aims to develop robust discussions on public health and family policy in practice.

The group which as at May 2014 has 782 registered members and an average of 20 posts a month was approached to contribute to the initial questions to anchor discussions on the platform in June 2012 (See appendix two).

THE EVIDENCE HUB

The Health Visitors Community of Practice evidence hub; which is a type of collective intelligence tool designed by the Knowledge Media Institute at the Open University, hosts the Online Community of Practice at https://cophv.evidence-hub.net/.

Users sign up via a registration form that requires their name, organisation and interests for joining to be mentioned. Requests to join the evidence hub are fully vetted by the project coordinator/research fellow who also acts as the moderator/facilitator of the Community.

Registered users are reminded that discussions must be compliant with the NMC code of conduct. As an extra feature to validate members, users are required to enter their Institute of Health Visiting identification number or an NHS email address to join. This has proven to be a secure way to ensure only legitimate health visitors access and use the platform.

Once signed up, five different components in the hub facilitate how health visitors contribute to collective debate and learning. These five components are the building blocks of the evidence hub are: issues, good practice, evidence, resource and organisations/ projects (See Figure B).
Figure A: The architecture of the evidence Hub
Issues describe key problems the community has directly added to the Evidence Hub and brought into debate and are ideally phrased as a question that the community is trying to address. 88 issues have so far been included in the hub (May 2014).

Good Practice Points are used to answer specific Issues and describe a solution that practitioners within the community have tried out and can report on. Members can add a new Good Practice Point to the Evidence Hub or collaboratively improve an existing Good Practice. They can be supported or challenged by specific Evidence. 34 good practice points have been added by the community (May 2014).

Evidence represents the distillation of the community effort to map what works and what does not work within the community as suggested by practice or by research. Evidence can be one of the following: professional experience, evaluation reports, guidelines, policy, reports, research findings, reviews, toolkits that the community has added to the website. Ideally evidence will either support or challenge at least one existing good practice point. Each member of the community can either add some new evidence to the evidence hub or collaboratively improve existing evidence. 90 evidence posts have been added by the community (May 2014).

Resources are the Publications (URL pointing at Research Papers) or Web Resources (URLs pointing at any other relevant website) that have been added to the Evidence Hub. Resources can be used in two main ways: to endorse the evidence that have been added to the website or to describe an issue, organization or Project. 215 resources have been added by the community (May 2014).

Organizations and Projects map the organizational ecosystem of the community. 25 Organizations and 2 projects have been added by the community so far (May 2014).

Topics are used in the evidence hub as grouping systems to represent the higher level discussions of interest for the community. These topics are Health inequalities, Parenting, Professional Health visiting issues, Use of technology, Child development, Sleep, Safeguarding children, Mental health, Public health, Infant feeding/ child nutrition, Healthy child programme, Family issues, Special needs and disabilities, Speech and language. All discussions can be further described with tags (e.g. ASQ, breastfeeding) to further categories individual contributions. The most frequently used tags by the Community are displayed on the home page of the Evidence hub.

For purposes of networking and interaction, health visitors can follow any people, organizations, projects, topics, issues, good practice points, evidence etc. in the evidence hub by clicking on the follow icon. Following allows the user receive a daily/weekly/monthly email digest of all activities related to followed items and people. The evidence hub also has an Evidence Hub Online Builder Tool to help the user gather evidence while browsing.
The Evidence hub does not support an archive of archive of PDFs- all resources, evidence are accessed through the use of hyperlinks/URLS to external sites; removing the responsibility for updating resources from the responsibility of the users to that of the external sources cited.

THE PILOT PHASE

Commencing in 2012, the Community of Practice project was piloted in Tower Hamlets and Hertfordshire; the two initial pilot areas for the project. The activities in the pilot included:

- Developing the evidence hub platform with user-specific content relevant to the health visiting context
- Undertaking a series of marketing and consultation meetings with health visiting teams from both pilot study areas to introduce the project, the community of practice model and to identify champions for proposed workshops
- Conducting training via workshops to get health visitors acquainted with the components of the platform
- Evaluating the outcomes of health visitors using the platform via a realist evaluation strategy
- Disseminating emerging ideas from the project

Consultation meetings were set up in the two pilot sites (Tower Hamlets and Hertfordshire) to understand what kinds of discussions health visitors wanted from the Community of Practice, explore initial reception for the idea, to identify potential champions for training, and to determine the content of workshops to be run.

In Tower Hamlets, meetings and workshops were facilitated by the research team and Claire Davis; Clinical Project Manager Health Visiting EARLY Toolkit Project, Barts Health NHS Trust, a number of locality team leads and academics from City University, London.

In Hertfordshire, an Early Implementer Site, work to pilot the project in Hertfordshire was coordinated with Sue Mills, Transformation Project Manager (EIS) Hertfordshire Community NHS Trust. A general introduction was held at a Community Practice Teachers event held at the University of Hertfordshire, Hatfield with over 60 practice mentor teachers in attendance. Health visiting teams were also at a locality meeting at North Herts and Stevenage Health Centre, Hitchin to explore initial reception and comments about the project. At these events, proposed workshops were promoted with to identify at least one Champion to be trained from one of the 16 health visiting teams in Hertfordshire: Buntingford, Bishop Stortford and South East Hertfordshire, Dacorum, St Albans, Hertsmere and Harpenden and Stevenage, North Hertfordshire, Welwyn and Hatfield and Watford and Three Rivers.
In addition to the two pilot sites, a third pilot site was added at the end of the first year in Birmingham. This was a group of newly qualified health visitors who had some experience of being a closed Facebook community called Smarties.

A fourth group; a two year old London community of practice face to face group sponsored on the back of a Department of Health Communities of Practice initiative was also identified during the pilot as champions for the using the evidence hub, as an alternative meeting point to carry on discussion after face to face opportunities to meet had ended for the group.

Following initial consultations with a series of training workshops were conducted (See Figure C-F). Training workshops were a three-hour session of group tasks/computer based activities led by Sally Kendall, Faith Ikioda and Claire Reidy (the research assistant) to introduce the Health Visitors’ Community of practice Evidence Hub to health visitors as a tool for sharing, debating and addressing common issues about existing evidence.

Before the workshop, participants were required to bring latest evidence documents, policies, details of local projects they were involved in and debates in the media as sample of inputs that could be used as evidence to support online discussion.

Sessions were themed (e.g. parenting, clinical effectiveness, domestic violence) around an area of practice and typically covered:

- An introduction to the Community of Practice model
- Exploring Knowledge sharing in Health Visiting with a particular focus on how does the practitioner integrate reflective and experiential knowledge to inform and implement guidelines and policies?
- Explore the components of the Health Visitors Community of Practice Evidence Hub
- A group exercise to create a common vision and values around a specific challenge arising from practice
- Participants use a worked example to develop a project that integrates issues from daily practice, suggestions for best practice and supporting online resources and evidence sources.
Participants evaluated the workshops noting their initial concerns and experiences of using the tool. Frequently asked questions focused on how to create a user profile, quality assurance of contributions, moderating dangerous content (if a health visitor put up something that is dangerous practice can we hold them to account?) And the diversity of professionals (e.g. would school nurses be allowed to join) and the whether the community was to be a closed or open one.

**MONITORING AND THE REALIST EVALUATION OF THE PILOT**

To account for how participating in conversations in the evidence hub produced an improvement in health visiting practice, continuous monitoring and a process evaluation based on a realist evaluation strategy were undertaken throughout the pilot.
The aim of this exercise was to explore how health visitors had used the platform to raise issues, develop strategic alliances and share expertise and to explore the impact that organisational context, human agency, policy context and time available to make contributions to the platform, had on the usability of the Online platform to foster the development of an effective Community of Practice.

The evaluation components of the project were based on the ideals of a realist evaluation technique; a theory driven approach that seeks to understand what works for whom and how particular outcomes may differ between different settings with the same intervention applied (Pawson and Tilley, 1994).

A realist evaluation is a qualitative approach for testing and refining program theories by exploring the complex and dynamic interaction between context, mechanism and outcome (Greenhalgh et al., 2009). It is a type of theory-driven evaluation suited for evaluating complex social interventions and an ideal method of evaluating interventions where the outcomes are dependent on stakeholder interaction (Pawson and Tilley, 1997).

As an evaluation technique, realist evaluation is employed where assessing the outcome of an intervention is dependent on whether the stakeholders, for whom the intervention has been designed for, choose to make the intervention work and identifying the right conditions that enable them do so. A realist evaluation starts with the formulation of a middle range theory that connects mechanisms, and outcomes, resulting in what is termed a potential CMO configuration (Goicolea et al., 2013). A realist evaluation does not set out to make a judgment about whether or not an intervention has worked effectively. Instead, it aims to provide understanding of why an intervention is likely to work or not work within a set of given conditions (Wong et al., 2010). According to Pawson et al. (2005), a realist evaluation seek to

- develop underlying theoretical assumptions about how an intervention works
- look for empirical evidence to support or modify the theories as it goes along and then
- use the relationship between the theory and evidence to outline the context in which the intervention applies, the mechanism by which it works and the outcomes which are produced

What follows on from this is an interpretive process that relies on multiple data sources to achieve four goals:

- develop a middle range theory,
- generate hypothesis,
- conduct observation and
- Identify a series of program specifications.
The realist evaluation accounts for the most appropriate context-dependent conditions of Context-Mechanism-Outcome configuration (CMO configuration), that can lead to understanding the best conditions for effective outcomes\(^1\) to be produced from a given intervention.

In following a realist evaluation of the CoP, context refers to the characteristics of the Community of Practice. That is the characteristics of its Members, their geographical spread, Connections, Knowledge, composition, maturity and activities. Mechanisms are the factors and resources that health visitors perceive that the community offers to improve practice - these can be enabling of disabling.

By identifying the contexts in which health visitors roles are embedded in the realist evaluation process, the mechanisms they identify as characterising their relationship with the community form qualitative primary data, a realist evaluation can develop a series of generalised statements about what contexts triggered specific mechanisms when HVs collaborate online. These statements; called attempts CMO configuration, can then be used to identify the potential for improved practice that the CoP potentially provided for health visitors using the Evidence Hub to share knowledge and expertise.

Table 1 summarises the CMO configuration of the project modelled after the work and suggestions of Ranmuthugala et al. (2011).

Table 1: CMO Configuration of the Community of Practice (CoP)

<table>
<thead>
<tr>
<th>Context (The characteristics of the Community of Practice (Members, Geographical spread, Connections, Knowledge, Composition, maturity and activities)</th>
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</thead>
<tbody>
<tr>
<td>• As at May 2014, 207 health visitors are registered users of the Online Community</td>
</tr>
<tr>
<td>• The 207 users are geographically dispersed spread across fifteen localities in the UK.</td>
</tr>
<tr>
<td>• 457 posts have already been made to the Community as at May 2014</td>
</tr>
<tr>
<td>• A third of users are student health visitors, another one-third are health visitors and the remainder one-third have specialist roles e.g.</td>
</tr>
<tr>
<td>• The community is less than two years old</td>
</tr>
<tr>
<td>• A facilitator (the research fellow and Principal investigator) take an active role in moderating as well as posting discussions to the community</td>
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</tbody>
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<tr>
<th>Enabling Mechanism (Factors and resources that health visitors perceive that the community offers)</th>
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<tbody>
<tr>
<td>• Allows health visitors share their experiences</td>
</tr>
<tr>
<td>• Accumulate evidence from a wider variety of settings</td>
</tr>
<tr>
<td>• Alleviates sense of professional isolation</td>
</tr>
<tr>
<td>• Provide real time access to peer-reviewed evidence while health visitors are on the go</td>
</tr>
<tr>
<td>• Access distributed professionals</td>
</tr>
<tr>
<td>• Relevant topics to aid contribution</td>
</tr>
<tr>
<td>• Facilitates access to expert knowledge</td>
</tr>
<tr>
<td>• Access to other health professionals, so that other health professionals know what it is that Health Visitors do</td>
</tr>
<tr>
<td>• Collates an evidence-base for practice that did not previously exist</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Disabling mechanisms (Factors and resources that the health visitors perceive that the CoP does not offer)</th>
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<tr>
<td>• Lack of asynchronous discussion</td>
</tr>
<tr>
<td>• Passive users who do not contribute/poor reciprocity</td>
</tr>
<tr>
<td>• Endorsement to participate in the CoP from their organisation is not clear</td>
</tr>
<tr>
<td>• Lack of Time to use it as it is another thing to do on top of huge workload</td>
</tr>
<tr>
<td>• The topic forums to broad</td>
</tr>
<tr>
<td>• Difficulty navigating the online interface design</td>
</tr>
<tr>
<td>• Feeling exposed online not knowing other users</td>
</tr>
<tr>
<td>• No incentive for participation</td>
</tr>
<tr>
<td>• Forgotten passwords</td>
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<tr>
<th>Outcomes</th>
</tr>
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<tbody>
<tr>
<td>These statements were accepted as true by participants via testing of hypothesis of statements about the mechanisms in the online survey to demonstrate the potential outcomes of the capabilities of the intervention of the CoP</td>
</tr>
<tr>
<td>• introducing a new method or approach to solve a problem HVs experienced in practice</td>
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<tr>
<td>• providing HVs access to expertise not available locally</td>
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<tr>
<td>• allowing HVs to keep abreast with the latest evidence</td>
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<tr>
<td>• being able to bounce ideas/good practice with other practitioners</td>
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<tr>
<td>• supporting HVs to share issues in practice</td>
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<tr>
<td>• Improve HVs knowledge of building community capacity</td>
</tr>
<tr>
<td>• Access to peer-reviewed evidenced-based practice discussions</td>
</tr>
<tr>
<td>• Getting access to a wide range of evidence based resources to aid professional practice</td>
</tr>
<tr>
<td>• The commitment of the other members of the CoP encouraging my participation in the CoP</td>
</tr>
<tr>
<td>• providing HVs with the opportunity to discuss work-related problems in a non-judgmental environment</td>
</tr>
<tr>
<td>• access to a trusted colleague that HVs can turn to for advice or a second opinion, when needed</td>
</tr>
<tr>
<td>• getting access to information that demonstrates success of evidence-based practice (EBP) makes it more likely that I will adopt EBP in my practice</td>
</tr>
</tbody>
</table>

These statements were rejected as not true by participants via testing of hypothesis of statements about the mechanisms in the online survey to demonstrate the potential outcomes of the capabilities of the intervention of the CoP |

• a positive impact on my career development |
• helping on at least one occasion in my ability to solve a work-related problem |
• Attending the workshops and other face-to-face meetings which has helped me to establish links with other Health Visitors. |

Source: Workshop evaluation forms, registration requests, online survey and focus groups
DATA COLLECTION
Data collection and analysis sought to explore how health visitors collaborated to share expertise online, who they shared knowledge with, what they talked about most and whether, if at all, strong networks had begun to emerge in the course of online interaction.

Qualitative and quantitative measures underpinned by focus groups with health visitors, an online survey, social network analysis, content analysis of contributions on the platform, reflective notes and a focus group with parents were used to support the evaluation process.

Focus groups with practitioners
3 focus groups were organised with 18 Health Visitors, (6 each from Hertfordshire, Tower Hamlets and Birmingham). The framework of the questions were in regards to health visitors’ attitudes towards evidence based practice, attitudes towards an online community of practice and the practicality of using and navigating the evidence hub. The discussions were recorded, transcribed and analysed through categorisation of key themes.

Focus group with parents
A focus group with parents was conducted with 9 parents identified through NetMums and other parent and toddler groups in Hatfield, Hertfordshire. This was done to explore users’ expectation and feedback on conversations in the online community. The discussions were recorded, transcribed and analysed using NVivo as a data management tool.

An online survey
An online survey was conducted through the Bristol online survey tool to explore how the demographic character of users of the hub, the frequency and extent of use, factors influencing the development of evidence-based practice among Health Visitors, a Health Visitor “Evidence Hub” Impact Questionnaire and a Modified Computer Anxiety Scale (MCAS). 97 people responded to this survey. The majority of participants in the survey were over 50 (49.5%, N=48), while 33% (N=32) of participants were between 41 and 50, 16.5% (N=16) were aged between 30 and 40 and only 1% (N=1) were under the age of 30. The mean length of time participants in the survey had been in Health Visiting practice was 12.03 years (SD=10.65).

Interview
One in-depth interview with Sue Mills (EIS lead in Hertfordshire) in the course of the project to explore the challenges of using the platform in everyday practice was undertaken
Content analysis

A content analysis of the 183 posts that health visitors had made to the platform (excluding contributions of the facilitator) were analysed in order to explore knowledge work. The analysis followed work done by Brooks and Scott (2006) on knowledge work in nursing and midwifery which sets out 12-category analysis framework for measuring the display of knowledge and information work in online discussion systems.

Reflective notes

Reflective notes were collated by the Research Assistant (Claire Reidy) in the course of meeting and workshops to obtain the views and suggestions of audiences in attendance.

Google analytics

Google analytics summaries of publicly available information about who visited the websites, page views and pages read were used to derive web analytics about the type of engagement health visitors were having on the online platform were collated continuously throughout the project.

Social network analysis

Social network analysis (SNA) was used to identify the characteristics of group connections, formation of sub-groups or cliques, the density of interaction and reciprocity indices among others. The tool, NodeXL was used to visualise the data from the interaction and connections from health visitors in the evidence hub (Figure J). NodeXL is a network analysis and visualization software tool that adds a “network graph” as a chart to an excel spread sheet (Smith et al., 2009). NodeXL was used to calculate a set of basic network metrics for visualising the characteristics of the CoP based on SNA. SNA was used to explore the nature of cohesive groups, sub-groups or cliques and the density of the overall methods of interaction among health visitors online in order to document the development of the CoP.

KEY FINDINGS

Since the pilot in October 2012, the evidence hub has been visited by over 1000 users with an average of 150 users visiting it each month. 207 student health visitors health visitors, 76 lectures/tutors, practice teachers and team leads , 3 Safeguarding Children Nurse Specialist and Named Nurse Child Protection Health Visitors from across the country are registered as users on the hub. Between them, these users have raised 454 posts including 88 issues, 89 evidence sources and 24 organisations.
Focus group and workshop evaluation data show that health visitors agreed that the evidence hub presented to them the following opportunities:

- It allowed health visitors share their experiences and access the expertise of distributed professionals
- Health visitors across organisations could highlight what is at the heart of practice from a wider variety of settings – a mechanism not previously available to them.
- Knowing what it is that Health Visitors did elsewhere

Health visitors also felt that the hub could become a trusted source of peer-reviewed evidence for practice “When you go through Google, millions of pages come up but on this I want to be able to type something and the best evidence just pops up for me, yeah. ,, this... A trusted resource because there is so much out there we haven’t got time to look through it all....” (Health visitor Focus group 3)

Health visitors overall felt that the online Community of Practice alleviated a sense of professional isolation and potentially provide real time access to peer-reviewed evidence while health visitors are on the go in the era of mobile working as stated in the quote below from the feedback from one user, “If I need to share or ask about practice I know I can shout over my shoulder and get several answers or have a discussion. In my future practice in my car or in Tesco as a mobile worker I will no longer have that luxury. Yes, I could phone my colleagues but I won’t know if they are with a family on the phone or driving. The Evidence hub will be able to fill that void and become my first resource.” (Feedback from health visitor using the hub)

Survey data further corroborates the usefulness of the hub by respondents. From 88 respondents who answered the question “What participants feel is the most important feature of the Evidence Hub”,

- Nearly a third (28.4%, N=23) of respondents saw having a professional space for Health Visitors as an important contribution the hub provided
- A quarter of survey respondents (25.9%, N=21) felt that easy access to information was most important use
- Nearly a quarter (23.5%, N=19) also felt that a space to share knowledge was the most important feature of the Evidence Hub,
- A fifth of respondents (18.5%, N=15) felt that access to credible information was the most important feature.
- 3.7% (N=3) felt that a space for discussion was the most important feature.

There is evidence that the online Community of Practice offers an opportunity previously unavailable to health visitors to demonstrate and ‘market’ their profession by articulating what is entailed in everyday practice. Evidence of this has been demonstrated through the
development online projects that allow dispersed health visitors contribute to a debate about common interests. One of such projects set up at as a derivative of one of the evidence hub workshops was the *antenatal contacts*.

“The antenatal contact” is a collective effort of a group of health visitors in London who met at the London Communities of Practice workshop who set up the project to develop an antenatal health visiting contact with the following aims: Exploring options on one to one or group session, developing written information/leaflets, Devising pilot project suitable for population and capacity of the local services, Joint working with midwife /children centre staff and adapting work already in progress (Oxleas project)

*(Project set up on the Hub in May, 2013 by London health visitors)*

The hub has also allowed practitioners undertake discussions and mutually engage in discursive debates about common issues in everyday practice with other peers, as is highlighted in the discussion below on breastfeeding targets:

*Health visitor in Worcester:* “We are measured on breastfeeding targets, having to achieve a certain target of babies still breastfeeding by 6 weeks of age. The problem is, they are measured at birth (even if they have ONE breastfeed, that is counted as “breastfeeding at birth”), and then at 6 weeks. This of course, means that we are “responsible”, if you like, for all the babies that stop breastfeeding anytime between the first breastfeed and our primary visit! - How on earth can we have any influence on those figures? - Yet that is what we are measured on! The measurement should be the percentage of babies breastfeeding at the primary visit, and then again at 6 weeks! What can we do about this?”

*Health Visitor in Wirral replies:* “We also realised that this was an issue. On the Wirral we collect the birth, 10-14 day, 6-8 week, 4 month and 6 month data. This means that locally we can identify when women actually stop and implicitly within whose care they were. This has allowed us to be more targeted in the support we give and the kinds of services we have developed. If you are not the Infant Feeding Lead for your area it might be worth having a discussion with them!”

While the main activity on the platform were posts about issues health visitors faced in practice, other activities such as reading, viewing and liking posts were also a common way by which health visitors engaged with the platform, with the platform recording a total of 26,446
page views over the two year period. Online survey data also shows that viewing was the more predominant form of engagement with the platform by respondents showing the majority of participants as “lurkers” rather than engaging more actively with posting to the evidence hub.

Survey data revealed that:

- 58%, (N=47) of survey respondents have viewed the Evidence Hub but not joined
- 32.1%, (N=26) of survey respondents have joined the Evidence Hub, but have not posted on it,
- Only 9.9%, (N=8) of survey respondents have joined the Evidence Hub and also posted on it.

The tag cloud in figure I shows that breastfeeding related discussion were the most tagged words in 38 (8.3%) of the 457 posts on the evidence hub (Figure I)

In terms of its usability, what prompted respondents to visit the evidence hub most was in response to a newsletter/email alert from the Evidence Hub (37.9%, N=25).

- Those who were “just curious” were (36.4%, N=24).
- 9.1% (N=6) were last prompted to visit the evidence hub because of an iHV presentation,
- 7.6% (N=5) by a work related problem, and
- 3% (N=2) from being at an Evidence Hub related workshop.
- 6.1% (N=4) gave other reasons, those being largely educational related; as “Research for uni assignment”, or “looking for evidence for a course”, “Studying for Master’s degree”, or as a “new role which involves CoP lead”

In terms of the content of information displayed by posts by health visitors (excluding posts by the facilitator) in the evidence hub, Graph 1 shows that

- 32.8%, (60) posts were had a “Display of scientific or evidenced-based knowledge, but did not discuss”.
- Posts which could not be categorised in Information work accounted for 25.7% of posts (N=47),
- Post with a “Display of scientific or evidence-based knowledge in response to a question of point” represented 10.4% (N=19) of the Information work displayed on the hub.
- “Closed questions, or requests for explicit knowledge” accounted for 9.8% (N=18) of Information work on the hub,
- “Display of local explicit knowledge as an answer to a discursive question” accounted for 7.1% (N=13).
A “Display of local explicit knowledge only” represented 4.9% (9) of the Information work on the hub.

“Display of local tacit knowledge as an answer to a discursive question” accounted for 4.4% (N=8),

Closed questions or requests for tacit knowledge/information” accounted for 3.3% (N=6),

a “Display of local explicit knowledge as an answer to a closed question”, an “Information display only”, and

“Non-discursive simple responses” each accounted for 0.5% (1) of the Information work displayed on the hub.
Figure I: Tag cloud of discussions on the evidence hub (May, 2014)
Contributions in the evidence hub also helped to point at gaps in the evidence for professional practice and highlighting what needs to change in practice; especially in the areas where evidence was lacking.

For instance, of the 457 discussions on the hub for 111 posts (25%) addressed discussions related to nutrition while another 96 posts (21%), were related to public health topics. In comparison, only 10 posts (2.1%) addressed topics on Special needs while only 8 posts (1.75%) addressed Speech and language concerns. This breakdown suggests that much needs to be done in highlighting what evidence health visitors require and use to address these latter situations.
Parents from the focus group spoke of the incredible potential that the mechanism of an online CoP presents both for amalgamating the conflicting advice they as parents sometimes got from different health visitors as well as the opportunity for the information they received to be informed by real life stories of other health visitors working with parents like themselves. Parents noted that the hub tool could be incredibly useful in promoting a much unified understanding of what it was health visitors do, especially the opportunity to use real life experiences with clients as evidence applicable to other situations. As one parent noted:

“My son got a cut from Velcro there was all blood and grew into big hole. Talking to the health visitor, she had seen another mum that had a similar problem and said, “Ask for Canestan cream because it could be fungal”. That was the answer in the end and it cleared up. If other health visitors were to get together to share, you can use that as an example”

(Parents Focus group December 2013)

SOCIAL NETWORK ANALYSIS INDICATORS

Social network analysis (SNA) was used to identify the characteristics of group connections, formation of sub-groups or cliques, the density of interaction and reciprocity indices among others. The tool, NodeXL was used to visualise the data from the interaction and connections from health visitors in the evidence hub (Figure J). NodeXL is a network analysis and visualization software tool that adds a “network graph” as a chart to an excel spread sheet (Smith et al., 2009). NodeXL was used to calculate a set of basic network metrics for visualising the characteristics of the CoP based on SNA. SNA was used to explore the nature of cohesive groups, sub-groups or cliques and the density of the overall methods of interaction among health visitors online in order to document the development of the CoP.
Figure J:Social network analysis of interactions in the evidence hub during the pilot, showing the formation of groups and sub-cliques (Source: NodeXL analysis).

Figure J goes on to show the particulars of the development of the online CoP by presenting a visual interaction of HVs knowledge exchanges in the Evidence hub throughout the two year pilot. It shows that of the 250 users, 63 have replied to the issues or good practice comments posed by another health visitor. However these exchanges are being concentrated in sub-cliques (17 groups are identified from the NodeXL analysis) rather than one seamless collective interaction. Cliques although often composing a mix of student health visitors, lecturers, managers and specialist health visitors were often quite localised. In Group 2 (G2) for instance 11 of the 12 users were located in Hertfordshire pilot area. While G6 contributors were all located in Hertfordshire and were also all student health visitors. The formation of local cliques can have implications for knowledge flowing across different teams and make difficult to create a common culture for sharing and gaining access to evidence not available locally.
Studies elsewhere have suggested that in the absence of social cues, as would obtain in face to face contexts, users tend to exchange information with other online users with whom they have similar attitudes beliefs, and personal characteristics such as professional role or location on personal profile (Shen and Monge, 2011). Other research has suggested that homophily is the strongest predictor of relationship formation if people are interacting through computer mediated communication (Yuan and Gay, 2006).

The problem with this tendency to use homophily to develop relationships online may result in knowledge residing within local teams and not flowing across teams and this can negate the development of effective CoPs for improving practice. Developing effective online CoP beckons for recognition of the most important predictors that will help people interact more online and breaking down the challenge arising from homophily. Knowledge must not reside within teams but flow across teams if a community of practice is to be truly effective in improving health visiting practice.

Research has shown that if people are interacting through computer mediated communication where social attributes are largely absent or obscured, individuals resort to following visible signals to identify and choose a potential strategic partner in online communities such people whom they already know or those in similar locations to exchange information with (Shen and Monge, 2011; Yuan and Gay, 2006). To counter the negating effect on location, social network analysis allows for identifying cut-off points; individuals whose presence is essential to brokering knowledge but whose departure will result in a break in flow of information in the Community of Practice (Figure K). The social network analysis undertaken via NodeXL identified the key knowledge brokers and boundary spanners in the online CoP whose work is pivotal to bridging knowledge gaps and structural holes (See figure K).

In figure K, the brokering of Fai in Group 1 with users in G2, G3, G4 and G5 underlies the crucial role that the Community’s facilitator plays in challenging the development of knowledge silos.
Figure K: Social network analysis of interactions in the evidence hub during the pilot, showing the formation of groups and the role that the facilitator (Fai in group 1) plays in spanning knowledge gaps between different groups (Source: NodeXL analysis)

The presence of a moderator/facilitator (Fai in group 1) who is actively contributing or signposting discussions in the community can make a huge contribution in bridging the gap between gaps in the Community. In Figure K, conversations between groups between groups 1-6 display more connectedness as a result of the contributory role of the facilitator.

Whereas posts in groups 7-11 where the facilitator has had less input present a less connected set of discussions that are peripheral to rest of the emerging online community (See Figure K). Social network analysis also identifies that apart from the facilitator in group, Lau (Group 2) Cla (Group 3) and Bec (Group 5) played brokering roles in the online community of practice by spanning divisions across networks formed (Table 3).
Table 2: Betweenness Centrality showing users with most important direct links to other HVs in the Community (Source NodeXL Analysis)

<table>
<thead>
<tr>
<th>Top knowledge brokers in the Community</th>
<th>Betweenness centrality measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fai</td>
<td>989</td>
</tr>
<tr>
<td>Lau</td>
<td>403</td>
</tr>
<tr>
<td>Bec</td>
<td>141</td>
</tr>
<tr>
<td>Cla</td>
<td>76.8</td>
</tr>
</tbody>
</table>

The departure of the users in Table 2 will result in structural holes and lead to problems regarding knowledge flows in the community of practice. It suffices to argue that the presence of knowledge brokers and moderators is integral to

- Catalysing the sharing evidence across different organisations in the absence of everyday face to face social cues.
- Preventing the development of organisational silos which can make knowledge stick rather than flow within teams, and
- Engaging peripheral participants and lurkers to become more active and connected to the core of the community

Incentivising current and potential brokers may be an option for developing effective online Communities.

Regression analysis to explore whether contexts such as the health visitors’ professional role, use of a laptop, desktop or tablet; gender, age, part time or full time role and practice location had implications for the use of the evidence hub (either for viewing or posting messages put together) suggests a slight significance for two other factors; type of work base \(^2(0.052)\) and County \(^3(0.057)\). However available numbers for each factor from survey results for these factors were not significant enough to be explored further.

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\(^2\) Type of work base in the online survey were Health centre, GP surgery, mobile working, higher education, children’s centre, Hospital/trust building, Community Clinic and Other

\(^3\)
DISSEMINATION
Throughout the project were mechanisms reporting on emerging ideas and learning from the Community of Practice to both members of the platforms and the wider health visiting community. Dissemination activities were also aimed at broadening participation of the platform beyond the 106 health visitors identified as champions during the workshops. Below are the various formats of dissemination conducted during the pilot.

**Kent and Medway Communities of Practice Launch**
Professor Sally Kendall and Dr Faith Ikioda made a key note presentation about the capabilities of the Evidence hub for developing an effective virtual CoP for Hvs across organisations in Kent and Medway to network at the launch of the Kent and Medway Communities of practice event in February 2013. A follow-up event, inviting the research team to take part as members of the Community’s steering group is in progress.

**Locality team meetings**
The research team attended three locality meetings in Harpenden, Potters Bar and Hemel Hempstead and a Hertfordshire trust health visiting managers’ development meeting at Robertson House, Stevenage to provide updates on the project and explore in-practice experiences of how health visitors had used the platform. Although welcoming the idea, practitioners noted it was a difficult intervention to implement at a time of great staff shortages, huge demands on record keeping, competing interests, caseloads and IT challenges.

**Evidence Digests for Practice**
Another dissemination strategy from the project was the development of best evidence and practice digests to stimulate discussion, debate and discursive practice around key areas of knowledge management within the community itself (See Figure M). Evidence digests were published as short briefings relevant to discussion in the Community. These are hosted on the website for the Institute of Health Visiting and with access provided to users of the evidence hub. Each digest comprised an overall message, with tips for good practice points and were made available on the community’s platform to encourage debate. Five of these digests were produced by experts in evidence-based practice and edited by a seasoned expert in systematic reviews, Frances Bunn at the University of Hertfordshire (See Appendix 3 and 4). Topics covered were on infant massage, childhood immunisation, newborn blood spot screening, encouraging independent sleep associations and cow's milk protein allergy in infants. It is hoped that the Tower Hamlets Toolkit, another recently completed project sponsored by the Burdett Trust for Nursing, will also be disseminated via the platform.
Cow's milk protein allergy (CMPA) is the most common food allergy amongst infants and young children. CMPA currently affects between 2-7.5% of infants, although up to 15% may exhibit symptoms suggestive of CMPA at some time. (Vandenplas et al 2007) Cow's milk in the infant diet causes a response in the immune system leading to recognizable and reproducible symptoms of allergy (or symptoms suggestive of allergy).

Overview

Although CMPA is commonly reported, there is a discrepancy between reported symptoms and diagnosed allergy. (Ventier et al 2009) There can be diagnostic difficulty as CMPA can be immunoglobulin E (IgE) mediated reactions which are rapid in onset and dramatic in nature, or non IgE mediated which are usually slower to develop with often diverse and subtle symptoms, developing from two hours to several days after exposure. Some infants may present or develop a mixed picture of both IgE and non IgE type symptoms.

Evidence points for practice

1. CMPA usually develops in children when cow's milk is first introduced into the diet, either in infant formula or dairy foods in the weaning diet. Breast fed infants can develop CMPA due to cow's milk protein in the maternal diet. (Vandenplas et al 2007)

2. Symptoms of IgE mediated allergies are rapid in onset, within a few minutes of exposure. Red flag symptoms include: urticaria/veses, angioedema, vomiting, diarrhoea, rhinitis, wheeze, and anaphylaxis. Allergy is confirmed by measuring IgE in skin prick tests or specific IgE blood tests. (Du Toit et al 2010)

3. Symptoms of non IgE mediated allergy develop more slowly and may include: eczema, gastrointestinal reflux (GERD), vomiting, severe colic, abdominal pain, constipation or diarrhoea, flattening growth and food refusal. (Du Toit et al 2010) Skin prick and blood tests are not helpful. Keeping a food and symptom diary and medically supervised exclusion diets can help confirm the diagnosis. (NICE 2011)

4. Allergy should be suspected when symptoms do not respond to first line therapeutic treatment for atopic eczema, GORD, chronic gastrointestinal symptoms including diarrhoea and chronic constipation. (NICE 2011)
Publications

1. One paper from the project has already been published: Ikioda Faith, Kendall, S; Brooks F; De Liddo A; Buckingham Shum, S (October 2013) *Factors that influence healthcare professionals’ online interaction in a Virtual Community of Practice*. Special issue on "Social Networks and Organization Studies: Where to head for?" Social Networking Vol. 2 No. 4 October 2013. Available at [http://www.scirp.org/journal/PaperInformation.aspx?paperID=38790#.UzrNoFeHa3E](http://www.scirp.org/journal/PaperInformation.aspx?paperID=38790#.UzrNoFeHa3E)

2. Another paper titled “The development of an Online Community of Practice to empower health visitors: Findings from a pilot Study” was submitted in May, 2014 to the Journal of Health Visiting and subject to minor revisions is scheduled for publication in 2014.

3. One forthcoming paper in the Journal; Health titled “Empowering health visiting practice in the UK: A realist evaluation of an Online Community of Practice for health visitors” is in progress.

Conferences

Two papers from the project were presented at Unite/CPHVA conferences in 2012 and 2013.


Leaflets

400 quick guide leaflets were also produced during the pilot to help with easy navigation of the hub for new users.

Poster presentation

One Poster presentation was also presented at Public Health England Conference in 2013 titled:


NHS employers Share and learn network

The health visiting share and learn network is a free and supportive forum for health visiting service and workforce managers and practitioners working for NHS service providers. And two
presentations about the progress on the pilot were made at the Health visitor share and learn event held in Leeds and London in 2013.

**Newsletters and email digests**

As a way to provide a regular, brief update to all HVs to disseminate emerging ideas and learning. Newsletters (from the CoP and the iHV) and monthly digests highlighting new members and recent contributions from the community were the vehicle to disseminate good practice, new developments, and other information to support practice.

**Health Visitor Task and Finish Group**

The capabilities of the Evidence hub as a way to promote effective knowledge sharing opportunities for HVs is scheduled to be showcased at the July meeting of the Health Visitor Task and Finish Group at the London Department of Health offices in Richmond house respectively on Tuesday the 15th July 2014.

**IHV website research Page**

To engage with the wider health visiting Community, workshops, conferences, newsletters and other activities from the Community of Practice project were detailed on the IHV s research pages. Details at

http://www.ihv.org.uk/policy_professional/research/research_project_details

**Other presentations**

1. The project was also part of the presentations made by the research Fellow (Faith Ikioda) at a workshop titled “Evidence-based practice in a global context: building sustainable communities of practice” held at the University of Sao Paulo, Brazil on 10-14 February 2014 as part of a successful 2014 Researcher Links Award funded by the British Council in partnership with FAPESP (Foundation for Research Support of the State of São Paulo, Brazil).

2. Wendy Taman, a health visitor in Birmingham using the CoP also made a presentation about the CoP in a paper titled “The iHV Community of Practice, a brilliant addition to the health visiting toolkit” presented at the IHV’s first year anniversary and subsequently published as a Voice piece as a commentary dedicated to reflection and comment about interventions in health visiting practices published by the institute of Health Visiting. The piece is available at:

http://www.ihv.org.uk/voices/9/IHV%20Community%20of%20Practice%20:%20A%20brilliant%20addition%20to%20the%20health%20visiting%20toolkit
In terms of what dissemination strategy worked best in promoting the awareness of the evidence hub, it is worth mentioning that strong institutional and organisational support for the CoP development via the support of the Institute of Health Visiting was vital to its acceptance by practitioners. Data from the online survey found out that:

- 61.7%, of survey respondents heard about the evidence hub through the Institute of Health Visiting Newsletter or Website.
- 8.6% heard through a workshop organised by the University of Hertfordshire,
- 6.2% heard through a CPHVA Conference, 4.9%, through the Evidence Hub Newsletter, 3.7% from the suggestion by their Supervisor or Manager, 2.5% through a team meeting and 1.2% at the Kent & Medway CoP Launch in 2013.
- Others heard through sources not located in the survey, namely; “a visit from lecturers”, a “HV/SHV Update day”, “Facebook”, a “Bid”, while one could not remember.

**CHALLENGES**

The pilot project was initiated at a time with great changes, progress and transformation in health visiting teams as a result of the Implementation plan; with many newly qualified practitioners coming into practice as well as many also retiring and leaving the profession. The pilot areas in our study were particular hard hit by growing pressures to deliver on recruitment and workforce numbers. Hertfordshire in particular; was an Early Implementer Site (EIS) for the implementation plan and had in addition to the pilot of the Evidence hub, a series of additional work packages and tools that were competing for attention of managers, team leaders and health visitors.

The promotion of mobile working in the form of less office office-based health visiting services and the growing use of mobile devices to support agile and paperless working in implementing modern health visiting services also became a recent character of many health visiting teams (Whittaker and Carter, 2013). This was not an exception with the heath visitors in the pilot areas we conducted the research project.

At the same time, health visiting practitioners are increasingly faced with competition from para-professionals delivering health visiting services as well as increasing pressure to provide evidence to commissioning teams in local governments that health visiting services offer the right services that are value for money for families (Cowley et al., 2013). A health visitor the second focus group noted that “There’s also this idea that we all now have to develop our own thing to sell to everywhere else and I don’t feel that is actually facilitating sharing of information”. This is one example where the increasing marketization and emphasis on target
driven services as evidence to commissioners that health visiting services offer value for money can stifle knowledge sharing even when good best practices worth sharing across organisations.

In recognizing the implications of this wider contextual issues within which health visiting practice was embedded at the time of the study, throughout the project, the reality of “great pressure” in health visiting teams – with some areas losing agency health visitors, the burden of covering for vacant health visitors and teams working on a skeleton service, all made it difficult to recruit larger numbers for the workshops to introduce the project. Huge caseloads, time considerations in addition to the design of the platform and IT competence were highlighted as deterring participation from comments made at visits to locality meetings. Online survey revealed that a large proportion of participants said that the reasons they had not used the hub were due to time restraints (80.9%, N=38), while 8.5% (N=4) stated that they felt the hub was too complicated to join. 6.4% (N=3) said that they felt the Evidence Hub was too complicated, and 2.1% (N=1) said that they have not used the Evidence Hub because they were not a confident IT user.

17% (N=8) said that there were other reasons they had not used the hub, these being; that they “Can’t remember seeing a link to it?”, they “Forgot about it”, they “could not find anything on the topics I accessed and did not want to be the first one to submit something”, that they “have not visited it” or Haven’t looked at it”, that they didn’t have a good excuse, that they “Only just learnt about it”, or “don’t know anything about it”. Table 3 is a summary of responses of what HVs felt would encourage more active participation from users

<table>
<thead>
<tr>
<th>Table 3: What might encourage Health Visitors to use the Evidence Hub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less time restraints at work</td>
</tr>
<tr>
<td>Support to attend workshops related to the hub</td>
</tr>
<tr>
<td>Increased encouragement from management to use the hub</td>
</tr>
<tr>
<td>Increased encouragement from colleagues to use the hub</td>
</tr>
<tr>
<td>Improved IT facilities at work</td>
</tr>
<tr>
<td>Quicker responses from colleagues</td>
</tr>
<tr>
<td>To know that the Evidence Hub was moderated</td>
</tr>
<tr>
<td>More training on how to use the Evidence Hub</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Apart from the responses in Table 3, users also cited participation drawbacks related to comments on the design of the evidence hub such as “It is not easy to use and looks chaotic…”, “An easier system to navigate its awful”, “limited in scope”, and “If it were easier to use”, as well as “Have yet to look” were mentioned in the survey.

Outside of workshops, registration requests, posts and visits as monitored through the analytics of the evidence hub by the moderator showed that most activity (whether posting or reading) occurred between predominantly between 8pm and midnight. This evidence was corroborated with survey data as 63.6%, (N=42) stated that they accessed the evidence hub in their own home in comparison to 36.4% (N=24) who accessed the evidence hub from the office. Focus groups also commented on the sometimes poor organisational support to engage and one health visitor in the focus group commented that “If our managers knew more about it and are coming to the field and they talk about it more, I think we are more likely to engage” (Health visitor Focus group 1).

Hesitation to contribute to online discussion out of fear of criticism or criticising someone else, moderating controversial evidence, feeling daft for asking an obvious question or of providing evidence capable of misleading the community was a common problem identified by health visitors. One health visitor in focus group noted that “I’m not sure about whether I would have the confidence to do that if I’m nervous about putting something on I know about, how would I feel about criticising somebody else’s practice even in a positive way to say, “Yes I take that onboard but did you know there’s also this more current information out there,” because that person might feel humiliated and have it in for you forever”(Newly qualified health Visitor, Focus group 3).

Other concerns included health visitors lacking descriptive skills for articulating tacit experience like of gut instinct and other intangible knowledge at the heart of practice in textual forms that support online discussion. As expressed by one health visitor “Instinct isn’t some nebulous thing is it, its all your life experiences come together from wherever and its click the buttons, And you can’t share that with another group of people in another part of the country” (Health visitor, Focus group 2).

Technological issues with the platform, poor connectivity of mobile devices which limited the use of the platform on the go and IT skills of health visitors were also cited as concerns for using the evidence hub to support the development of an Online Community of Practice “I thought I was missing something. ......Not at all intuitive, you have to think about using it and I still don’t like the fact you can’t upload stuff. (Health visitor, Focus group 3)
Another Health visitor noted that the “The other issue I had was my password, I forgot my password so I sent an email and it did send me a link to change my password but never it let me change my password, so now I can only access it through that email which is probably way back in my emails somewhere now, so that’s frustrating. And then it would never ever let me upload a picture; never let me upload my picture for some reason” (Health visitor Focus group 3).

While another health visitor also noted that “I doubt I’m ever going to use it and that might be because I don’t really do a lot of that social media stuff, or because "I’m a dinosaur" (Health visitor Focus group 2). Other concerns preventing participation were poor rates of reciprocity/replies to posts, lack of social cues and anonymity of participants,

REALIST EVALUATION OUTCOMES

Because outcomes are not determined priori to a realist evaluation and contexts varied so widely within the small sample of respondents to the survey it was not possible to make definitive statements about the contexts that would promote the uptake of Online CoPs as a knowledge sharing mechanisms in health visiting. However, statements generated from the mechanism identified by HVs through evaluation workshops and registration requests were tested via an online survey. 63.9% (N=62) of survey respondents responded to whether they agreed or rejected the 16 statements in Table 4 as a way to summarise the benefit they perceived as an outcome of participating in the online CoP.

Of the 16 CMO configurations, using a combined Likert scale measure (combining I strongly agree with I agree as accept and combining I disagree with I strongly disagree for reject and disregarding participants who indicated a neutral option) only 3 statements were rejected by survey respondents. These were

- attending the workshops and other face-to-face meetings which has helped me to establish links with other Health Visitors,
- helping on at least one occasion in my ability to solve a work-related problem and
- a positive impact on my career development.
Table 4: Supported and disproved statements about outcomes of participating in the CoP generated from online Survey of HVs

<table>
<thead>
<tr>
<th>Participating in the Community of Practice has allowed me do the following:</th>
<th>Accept (combined % of those who answered I agree and strongly agree)</th>
<th>Reject (combined % of those who answered I disagree and strongly disagree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>introducing a new method or approach to solving a problem that I experienced in my practice</td>
<td>17.5</td>
<td>11.3</td>
</tr>
<tr>
<td>providing me with access to expertise not available locally</td>
<td>24.7</td>
<td>9.3</td>
</tr>
<tr>
<td>allowing me to keep abreast with the latest evidence</td>
<td>34.0</td>
<td>6.2</td>
</tr>
<tr>
<td>being able to bounce ideas/good practice with other practitioners</td>
<td>26.6</td>
<td>8.2</td>
</tr>
<tr>
<td>supporting me to share issues in practice</td>
<td>28.9</td>
<td>9.3</td>
</tr>
<tr>
<td>improving my knowledge of building community capacity</td>
<td>26.8</td>
<td>10.8</td>
</tr>
<tr>
<td>access to peer-reviewed evidenced-based practice discussions</td>
<td>29.9</td>
<td>7.2</td>
</tr>
<tr>
<td>getting access to a wide range of evidence based resources to aid my professional practice</td>
<td>27.8</td>
<td>7.2</td>
</tr>
<tr>
<td>a positive impact on my career development</td>
<td>11.3</td>
<td>14.4</td>
</tr>
<tr>
<td>helping on at least one occasion in my ability to solve a work-related problem</td>
<td>15.5</td>
<td>16.5</td>
</tr>
<tr>
<td>attending the workshops and other face-to-face meetings which has helped me to establish links with other Health Visitors</td>
<td>9.3</td>
<td>16.5</td>
</tr>
<tr>
<td>the commitment of the other members of the CoP encouraging my participation in the CoP</td>
<td>15.5</td>
<td>12.4</td>
</tr>
<tr>
<td>providing me with the opportunity to discuss work-related problems in a non-judgemental environment</td>
<td>19.6</td>
<td>7.2</td>
</tr>
<tr>
<td>access to a trusted colleague that I can turn to for advice or a second opinion, when needed</td>
<td>22.7</td>
<td>11.3</td>
</tr>
<tr>
<td>getting access to information that demonstrates success of evidence-based practice (EBP) makes it more likely that I will adopt EBP in my practice</td>
<td>35.1</td>
<td>5.2</td>
</tr>
</tbody>
</table>
RECOMMENDATIONS

A realist evaluation must consider that CoPs (online as well as face to face) take time to develop and involve various stages where the confidence to share knowledge on the part of the members who use such communities grows accordingly as the community matures. Urquhart et al. (2002) identify five stages in the development of a virtually based online CoPs, starting at the potential stage, where individuals are still loosely connected and are beginning to discover common grounds, considering whether or not if this is the right type of community to join, considering the effect of disclosing private public behaviour in online environments etc.

Demonstrating the effect of other CMO configurations related to this online CoP such as improved practice or adoption of new techniques will require longitudinal follow up and repeated monitoring as the interaction in the CoP matures from a stage of building to engaged, active and adaptive stages; permitting the CoP is still up and running. Further work around demonstrate outcomes that the CoP is making a difference to practice however go beyond evaluation studies. Work following work in implementation studies and around Normalisation Process Theory (NPT), are a promising way to do follow up work to identify key issues of coherence, collective action, participation and feedback which can explains how technological interventions become implemented, embedded and integrated in everyday practice (Elwyn et al., 2008; May and Finch, 2009; May et al., 2009). Specifications arising from the evaluation suggest the following

- Effective online CoPs must be based on strong existing social ties and a dedicated facilitator to spur denser networks to form. Social network analysis from the data showed that health visitors attending offline meetings/events/workshops helped online users establish better links than those who did not attend one. Wider dissemination events will be needed to get health visitors engaged with the platform.

- Finding ways to incentivise participation, engagement and increasing the critical mass of users e.g. through COP events and competitions and the production of a CoP leaflet that will go out to all health visitors through the Institute of health visiting introducing the CoP concept, outlining out to create a profile and post and respond to posts.

- The more geographical dispersed users are, the more likely it is that sub-cliques are created which make it difficult to create a common culture. In addition to the facilitator, identifying champions in practice who will act as Knowledge brokers or Diffusion fellows will be key to making this project a success.
Working to improve the interface with the OU – a consensus event with the developers and health visitors to work towards a more user friendly platform, moving from the current topic forums to people forums such as Perinatal mental health forum, newly qualified health visitors forum etc.

Explore the possibility of an ‘app’ to promote real time knowledge sharing in the light of innovations in mobile working among health visiting teams.

Following work in implementation studies and around Normalisation Process Theory (NPT), which explains how technological interventions become implemented, embedded and integrated in everyday practice (Elwyn et al; 2008; May et al., 2009; May & Finch 2009) there is the need to identify key issues of coherence, collective action, participation and feedback about the CoP through more qualitative interviews with health visitors

Wider workshops to sensitise HVs about social media use and online behaviour and the need to work with organisations to support health visitors in their work time to use the CoP as a resource at work by creating time for reflection as well as adequate IT support systems. Currently most posts in the CoP occur after 8p.m at night; suggesting little room and time at work to effect its use in practice

Need to demonstrate outcomes that the CoP is making a difference to practice through more dissemination events, leaflets and production of evidence digests

**CONCLUSION**

The Health Visitors Community of Practice Evidence hub is an important professional arena previously unavailable to health visitors, within which discussion can take place, issues resolved and relevant resources signposted. It presents itself as a virtual forum to challenge and negotiate what is acceptable and reasonable evidence in health visiting through a collective mechanism that was previously unavailable.

An online Community of Practice offers an opportunity to support this horizontal knowledge and information exchange across boundaries but there is a need for longitudinal follow up over time as the community grows to explore its effect in everyday practice

Despite its laudable potential the pilot has also identified challenges regarding to the need for wider engagement with managers and commissioners and other organisations responsible for health visitors to sensitise health visitors about social media, adequate IT use and online behavior at work. There is a need to work with organisations to support health visitors in their work time to adopt the use of technological resources that can aid practice by creating time for reflection as well as adequate IT support systems to enable HVs to be more productive.
Evaluative studies however cannot answer all the questions of implementation such as identifying outcomes that point to a change in work practice that occurs as a result of professionals accessing resources provided by the community. For instance, it is unclear how health visitors have used the messages and advice they read from the platform to improve practice and therefore getting a greater sense of feedback would be useful. Developing robust feedback mechanisms over time and exploring whether and how participating in Communities of Practice in virtual spaces acts to improve practice will require longitudinal follow-up whilst charting the course of outcomes as the community matures over time. Such a mechanism might also aim to identify further contexts beyond location and brokers that challenge or enhance the formation of online communities. The role that incentivizing participation plays in promoting effective online participation amongst health visitors may also need consideration e.g. using CPD points to reward use.

Over the two years of the pilot the aims of the project which were to

- In year one, the community was developed, piloted and evaluated a within 2 Health Trusts in England.
- In year 2: the content and scope of the evidence hub was enhanced with additional users, topics and software upgrade. Test and evaluate effective dissemination of the CoP for all HVs. Online surveys and focus groups were conducted to further test and evaluate is effective dissemination, were achieved

The following objectives of the project were also accomplished

- A scoping study of the literature was conducted especially around the development and effectiveness of other online CoPs in the health contexts to identify what practitioners and parents would want from a CoP through the co-production of knowledge
- Worked with Michelle Bachler and Anna Deliddo at the Open University to set up the technical requirements necessary to offer the on-line CoP and to launch it within 2 NHS Trusts
- Worked with NetMums (an online support organisation, see under user involvement) to explore how parents could contribute to the co-production of knowledge for HV practice. Focus groups participants for the parents’ focus group were recruited via the site
- A rigorous marketing and training campaigns to introduce HVs to the CoP were undertaken across various locations
- Evidence and practice digests were produced in order to stimulate discussion, debate and discursive practice around key areas of knowledge management.
• Regular brief update to all HVs to disseminate emerging ideas and learning from the CoP was undertaken via the use of email digests and periodic newsletters and the IHV website
• Process and impact evaluation, based on realist evaluation techniques was undertaken involving reflective note taking, survey focus groups and interviews.

In the future and with available funding there is the potential to undertake further study to demonstrate that by participating in discussion and learning in the Online Community of practice that health visitors make a difference to practice, their approach to the Healthy Child Programme and the public health outcomes framework.

ACKNOWLEDGEMENTS
The Online Community of Practice project was supported by funding from the Burdett Trust for Nursing with the support of the Institute of health Visiting, Net mums, the Open University, Barts Trusts and Hertfordshire Community Trust and the Centre for Research into Primary and Community Care, CRIPACC, University of Hertfordshire (UH). We would like to thank Sue Mills, Kath Slater, Claire Davis, Janice Christie, Kay Gilmour, Jo James, Alison Braithwaite, Vanessa Osborne and Denise Knight for their help in recruiting health visitors to take part in the pilot study. We would also like to thank the steering group members, Cheryll Adams, Institute of Health Visiting, Dame Sarah Cowley, (Institute of Health Visiting), Claire Reidy UH, Centre for Research into Primary and Community Care (CRIPACC), Professor Fiona Brooks (UH, Centre for Research into Primary and Community Care (CRIPACC)), Anna De Liddo, (Knowledge Media Institute, Open University), Michelle Bachler, (Knowledge Media Institute, Open University) and Jacqueline Cotton. Herts Community NHS Trust (Bushey). We would also like to thank Hannah Murphy (NHS employers), Wendy Taman (Birmingham), Nicky Brown (NHS England) and Sally Russell, (NetMums), Elaine Mcinnes (IHV), Peter Scotts and Simon Buckingham Shaw (both of the Open University). Many thanks to the staff of the University of Hertfordshire Nursery, Hatfield; Howe Dell School, Hatfield; Bright Comets Nursery, Hatfield; and the Hatfield Library for their help in recruiting parents for the focus groups. All 215 participants who have used the evidence hub in the last two years are acknowledged as well.
APPENDIX ONE - STEERING GROUP MEMBERS

<table>
<thead>
<tr>
<th>Attendees</th>
<th>Organisation</th>
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<tbody>
<tr>
<td>Cheryll Adams</td>
<td>Institute of Health Visiting</td>
</tr>
<tr>
<td>Sarah Cowley</td>
<td>Institute of Health Visiting</td>
</tr>
<tr>
<td>Sally Kendall</td>
<td>UH, Centre for Research into Primary and Community Care (CRIPACC)</td>
</tr>
<tr>
<td>Claire Reidy</td>
<td>UH, Centre for Research into Primary and Community Care (CRIPACC)</td>
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<tr>
<td>Fiona Brooks</td>
<td>UH, Centre for Research into Primary and Community Care (CRIPACC)</td>
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<tr>
<td>Faith Ikioda</td>
<td>UH, Centre for Research into Primary and Community Care (CRIPACC)</td>
</tr>
<tr>
<td>Anna De Liddo</td>
<td>Knowledge Media Institute, Open University</td>
</tr>
<tr>
<td>Michelle Bachler</td>
<td>Knowledge Media Institute, Open University</td>
</tr>
<tr>
<td>Jacqueline Cotton</td>
<td>Herts Community NHS Trust (Bushey)</td>
</tr>
<tr>
<td>Denise Knight</td>
<td>UH, Department of Adult Nursing and Primary Care</td>
</tr>
<tr>
<td>Vanessa Osborn</td>
<td>UH, Department of Adult Nursing and Primary Care</td>
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APPENDIX TWO - WORKSHOPS

<table>
<thead>
<tr>
<th>Dates</th>
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</thead>
<tbody>
<tr>
<td>October 2012</td>
<td>Apsley One, Hemel Hempstead</td>
<td>3</td>
</tr>
<tr>
<td>December 2012</td>
<td>University of Hertfordshire (Practice Mentor teachers and team leads)</td>
<td>11</td>
</tr>
<tr>
<td>October 2012</td>
<td>Mile End Hospital, Tower Hamlets</td>
<td>16</td>
</tr>
<tr>
<td>April 2013</td>
<td>City University, London (Student Health Visitors)</td>
<td>24</td>
</tr>
<tr>
<td>March 2013</td>
<td>University of Hertfordshire</td>
<td>31</td>
</tr>
<tr>
<td>July 2013</td>
<td>Blakelands House, Birmingham (Newly qualified health visitors)</td>
<td>12</td>
</tr>
<tr>
<td>May 3013</td>
<td>America Conference Centre, London (London Communities of Practice)</td>
<td>9</td>
</tr>
</tbody>
</table>

Total workshops attendees: 106
APPENDIX TWO: INITIAL CHALLENGES POSED BY SENATE-HVSN JULY 2012

1. How can HVs actually have some ICT to work with
2. How can health visitors engage with the changes in public health
3. How can we develop simpler & accessible IT equipment for HVs
4. Public health challenges
5. Can health advice leaflets be delivered in multiple languages?
6. Poor management
7. How can health visitors remain committed with huge caseloads
8. How can we improve understanding of role by commissioners/managers
9. Could retiring HVs add to an evidence base to bolster evidence based practice as opposed to evidence based interventions?
10. What is the most effective model for health visiting practice?
11. How can health visitors be more responsive to new evidence as it comes out?
12. How can we improve robust education/training around recording & verbalising findings?
13. What skills do newly qualified Hvs need to enable effective building community capacity work?
14. How can we address the Lack of standardisation in Health visiting
15. How can health visitors ensure they keep up to date?
16. How can we reduce the gap between positive policy and overstretched staff 'on the ground'
17. What is evidence based practice in health visiting? Do we really know? e.g Organisational context, questions of process.
18. How can we link with the arts and health community?
19. How can Health Visitors engage with the Public Health outcomes framework?
20. How can HV see families more than once
21. How can health visitors utilise new technologies to develop practice
22. Time to spend in home visits
23. How can 2 years checks be combined with nurseries to stop duplicating work?
24. How can established health visitors support the large number of very welcome newly qualified HV commencing practice?
25. How can we expand and disseminate research about health visiting?
26. How can we capture the expertise of the very experienced HVs who will retire over the next year or so?
27. How can HVs link with other community services eg Libraries?
28. How can health visitors meet the needs of the most disadvantaged families?
29. The move from paper records to electronic records - this needs to happen asap, but can be difficult for most HV’s
30. Staffing levels
31. Profile, HV skills are diluted through the integrated offer. At a time of strength our voice is still lost in the PC integration agenda
32. To make the retrieval of data easier - not having to trudge through pages and pages of poor handwriting. Should make it easier to record data
33. Easily accessible HV database - very practically based
34. Juggling changes to service expectations with basic HV practice
35. Increasingly complex child protection cases
36. More of us - not used by managers to fill gaps in other services
37. How can the existing staff really effectively support the large number of emerging newly qualified health visitors?
38. Understanding the change required to successfully implement the HV implementation plan
39. Health visitor’s perceptions of good practice versus commissioners requirements/payments
40. How can health visitors be provided with appropriate IT to undertake their role effectively?
41. Recognising mental health conditions other than PND seen in community and in primary care
42. Managing technology and its time requirements against face to face work
43. How can health visitors be supported to ensure their management structures are aware of the implementation plan and the importance of their role?
44. To elect clear leadership for the HV profession
45. Where should the health visitor role limits be amongst social workers and children’s centre services
46. What are the most effective skill mix models?
47. How do we ensure that the healthy child programme remains flexible so that we are not target driven?
48. What are the most effective approaches to preventing obesity?
49. How can we meet the needs of families when there are so many cuts to other services?
50. How can health visitors work with older people?
51. How in the future with changes to commissioning do we market our profession effectively to ensure adequate resources are provided?
APPENDIX 3: EVIDENCE DIGESTS PRODUCED DURING PILOT

1. November 2013, Infant Massage As A Community Intervention For Infants Aged Under 6 Months By Angela Underdown.
2. September 2013, Talking With And Advising Parents About Childhood Immunisation By Helen Bedford,
3. August 2013, Newborn Blood Spot Screening By David Elliman
4. January 2013, Encouraging Independent Sleep Associations In The First Four Months Of Life By Maggie Fisher
5. November 2012, Cow's Milk Protein Allergy In Infants By Sue Clarke And Jackie Gaventa

APPENDIX 4: EVIDENCE DIGEST SAMPLE

TALKING WITH AND ADVISING PARENTS ABOUT CHILDHOOD IMMUNISATION

Dr Helen Bedford, Senior Lecturer in Children’s Health, University College London, Institute of Child Health, h.bedford@ucl.ac.uk

Immunisation is, after the provision of clean water, the most highly effective intervention for protecting children from infectious disease. As a component of the Healthy Child Programme, the promotion of immunisation is an important part of the health visitor’s role. This requires an up-to-date knowledge of the immunisation programme as well as communication skills to respond to parents’ questions and concerns effectively.

Overview

Uptake of childhood vaccines in the UK is at an all-time high. However there is a wide range in uptake between and within districts leading to a proportion of children who remain incompletely protected (Health and Social Care Information centre 2013). Most of these children are partially immunised. They have started the immunisation course but not completed it, often as a result of difficulties accessing services (Samad et al 2006a; Samad et al 2006b). However approximately 1 or 2% of children nationally remain totally unimmunised, usually because their parents have made an active decision to decline vaccines because of their attitudes and beliefs about the safety of or necessity for vaccines (Samad et al 2006a; Samad et
al 2006b). In their work promoting immunisation and improving uptake rates, health visitors need to be aware of the particular issues in their locality, as different interventions may be needed for these very different groups of children. This digest focuses on the principles of advising parents about immunisation.

Evidence points for practice

- Although vaccine uptake rates are high, parents’ main criticisms about the immunisation process are a lack of information or that information is ‘unbalanced’ or ‘biased’ (Smailbegovic et al 2003; Guillaume & Bath 2004; Yarwood et al 2005; Bedford & Lansley 2006).
- Even parents who immunise their children may have some concerns about vaccines (Raithatha et al, 2003; Casiday et al, 2006).
- Some parents find the immunisation decision stressful (Evans et al 2000; Harrington et al 2000).
- Trust in an information provider has been found to be pivotal for parents when making decisions about immunisation (Benin et al, 2006).
- Parents tend to trust the advice given to them by their health visitor, GP or practice nurse (Smith et al 2007).
- The opportunity to discuss vaccine concerns with a health care professional has been reported to be the decisive factor for parents who changed their minds about previously rejected or delayed vaccines (Gust et al 2008).

Implications for practice

- Parents place importance on the opportunity to discuss immunisation with health professionals (Yarwood et al, 2005) and so this should be offered.
- Do not assume that because parents have attended the vaccination clinic they do not have any questions or concerns (McMurray et al, 2004; Bedford and Lansley 2006).
- Acknowledge and explore parents’ specific concerns and tailor advice accordingly using evidence based information (Healy and Pickering, 2011).
- Parents want consistent, clear and balanced information and for professionals to be open and honest about what they know and what they don’t know.
- Be respectful of parents’ questions. Even if some concerns seem extreme, parents are only trying to make the best decisions for their child.
- After a discussion, if parents remain hesitant about immunisation, aim to leave the door open for further discussion.
- It may be helpful to point parents to reliable sources of written information to support the discussion.
If all else fails, they could be referred to a local immunisation expert willing to talk with parents about their concerns.

Health professionals have a key role in directing parents to reliable sources of information (listed below).

Health professionals have a responsibility to keep themselves up to date with developments in the immunisation programme. Key resources to aid this are listed below.

**Immunisation resources for Health Professionals**


*Information for health professionals included here:*

*Information on new vaccine introductions*

*Link to the ‘Green Book’ – Immunisation against infectious diseases – the key resource for all HCPs involved in immunisation.*

*Please note, the last hard copy version of the Green Book was published in 2006 and is now very out of date. Only the online version, which is regularly updated, should be used [https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book](https://www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book) Link to the HPE Algorithm ‘Vaccination of individuals with uncertain or incomplete immunisation status’ - useful information on what vaccines to give children when it is either not clear what they have had, or they have vaccines overdue.*

Public Health England – Health Protection Agency


*Information about vaccine preventable diseases, HPA publications on immunisation, and immunisation training resources.*

E-learning resources for health professionals

*Skills for Health Core Learning Unit (CLU)*


*Healthy Child programme*

Immunisation resources for parents


Main NHS website designed for the public

Immunisation - Great Ormond Street Hospital http://www.gosh.nhs.uk/parents-and-visitors/general-health-advice/immunisation/

Information about diseases and vaccines - compliments NHS websites, includes a FAQs section

References


http://www.hscic.gov.uk/searchcatalogue?productid=9990&topics=1%2fPublic%2fHealth%2fHealth+protection&sort=Relevance&size=10&page=1#top


Further Reading and Resources


Digest Editor: Dr, Frances Bunn, University of Hertfordshire, Hatfield

Date of Publication: September 2013
REFERENCES FOR THE REPORT


