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"If The Guardian can do it, we should be able to do it!" : Examining Public Health Infographic Strategies used by Public Health Professionals

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Abstract

This paper reports on research conducted together with Public Health England (PHE). It identifies key issues around the designing and commissioning of infographics by public health professionals working in PHE and local authorities. What are the criteria for their use? What barriers to design innovation exist? How do staff value the potential of infographics and seek inspiration? The results are based on qualitative methods involving semi-structured interviews with staff from within PHE and four local authorities. Results concur with Smit et al (2014) that there is a need for the convergence of skills. Staff discussed problems such as software availability, time, budgets and access to designers. Whilst commissioning does take place, there are no set criteria to help staff with this process. The challenges of information flows and of simplifying data for decision makers and the public was a key concern. The paper concludes with a set of recommendations to aid design innovation in the future.

Keywords: Medical device design, autism, participatory research, design approaches, rehabilitation

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Introduction

Information Graphics (infographics) are increasingly pervasive in contemporary culture (Segel & Heer, 2010). This paper reports on research carried out with public health professionals in the UK-based public health service, Public Health England (PHE) and local authorities to better understand the key issues around the value, design and commissioning of infographics within the public health sector.

Public Health England was established on 1 April 2013 to bring together public health specialists from more than 70 organisations into a single public health service. Two of its key responsibilities include: 1) sharing information and expertise with local authorities, industry and the NHS, to help them make improvements in the public's health and 2) researching, collecting and analysing data to improve the understanding of health. This project focused on the Yorkshire and Humber PHE centre and on public health professionals from the surrounding local authorities.

Existing Work

There are 2 main areas of study relevant to this research – studies into the information presentation needs of public health professionals/decision makers and studies about the production of infographics. It appears that neither of these areas has been researched in detail according to published research.

Decision making in public health is a complex process and evidence plays a vital role (Orton *et al*, 2011). Ritter (2007) examined the information presentation needs of policy makers and concluded that summative, accessible and single message-based information is best suited to decision makers despite the continued 'academic' presentation of data by researchers. She called for researchers to re-assess their methods of presenting data.

An interview-based study by Lavis *et al* (2005) concluded that, in terms of public health data, decision makers would benefit from having information highlighted that is particularly pertinent for decision making. They also recommended the use of designs that allow the rapid scanning of information for relevance and that featured grades of varying levels of detail. No published academic discussion exists about public health infographics from an organisational perspective, despite infographics' importance in the field of health communication (Edwards *et al*, 2002). There is however a body of research concerned with infographics in journalism (Giardina & Medina, 2013; Smit *et al*, 2014a) from which we can draw parallels.

Smit *et al* (2014a) identify a number of challenges in the newsroom that include the physical separation of designers and journalists. They also highlight problems such as the lack of design guidelines and user testing, which may undermine the confidence of designers. In terms of organisational issues, the fast pace of the newsroom may hinder experimentation. Also a lack of a

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common language between professional journalists and designers makes for awkward working methods.

Infographics production demands a wide range of combined skills such as data mining, programming, writing and graphic design (Giardina & Medina, 2013; Segel & Heer, 2010). As such it presents challenges to any organisation where workers have particular specialist skills or roles and it requires targeted investment. In 2011 the New York Times alone employed 25 specialist journalists responsible for researching and creating infographics (Giardina & Medina, 2013). As Smit et al (2014b) point out however, often no designer is present in many organisations and so production has to occur via external 'trading'. This also brings certain challenges with it. The key papers that examine infographics production within a journalistic context highlight particular challenges – skill sets, isolation or absence of a designer, and the need for investment. To what extent are these concerns mirrored in a public health setting?

Method

The results presented here are based on semi-structured interviews with fifteen public health professionals from within PHE and four local authorities. Staff were selected based on their diverse expertise and job roles. As Revere (2007) points out, people working in public health are enormously diverse in terms of skills and approaches and thus any research needs to account for this diversity. Directors of both PHE centres and of Public Health departments within local authorities were approached. Several staff from communications or information systems departments were also interviewed. The average length of each interview was an hour. A framework analysis was performed on over 12,000 words of quotes and patterns/themes within the transcripts were identified for discussion. University ethical approval was granted prior to the research being undertaken.

Results

Staff, both within PHE and local authorities, expressed a feeling of being "overwhelmed" by the volume of health data they received regularly. PHE staff producing the material acknowledged the large quantities of data being disseminated. One typical quote was "we do tend to produce quite detailed stuff for professionals to wade through and we don't produce a lot that's easily accessible". Those in the councils mentioned how data is incoming from a number of organisations and how they often felt "swamped". All staff valued the idea of succinct summaries, concurring with Lavis et al (2005).

14 out of 15 staff interviewed shared positive views towards the potential of infographics, particularly when trying to communicate findings to non-specialist decision makers and the general public. One participant discussed the challenges of new audiences: "we're still partly stuck

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in a methodically rigorous academic style position […] whereas now councillors are members of the public and they're being asked to present stuff in forums to an audience that are essentially laypeople so I think the stuff that we produce has to move, in some cases, into that space as well". Another participant stated that "The councillors are pushed for time and you want to make it as simple as possible". There were also views that peers/colleagues more generally could benefit from direct ways of presenting the data.

Staff from a variety of backgrounds identified a common set of criteria that they required from an infographic. They expected an infographic to be more accessible and more pictorial than a typical chart or graph. It should also be quick to understand and should draw attention to key points. One participant stated that "we are interested in what we can do with some infographic type stuff to really summarise for busy people the key messages" whilst another stated that "the important thing is that we get the information out to people in a way that will hit them, will get their attention and make them think 'Oh, maybe I should be thinking this is an important health problem'". It should also 'tell a story' clearly. Narrative and storytelling were emerging phrases in the transcripts – "There's something about an infographic that tells the story in a different way" - and this mirrors the work of Segel and Heer (2010) in their work on data stories. Several participants from PHE and councils warned that the tone of the infographics should not be patronizing and should always include all salient information - "there is a risk of oversimplifying things, dumbing down so you're only given an incomplete message". Such debates were not reported within papers focused on the journalistic context. There did appear to be a common language between the participants in terms of describing desirable qualities an infographic should have. Participants raised the issue about being an organization that is rigor-led whilst at the same time trying to make data more appealing, echoing the views of Gelman & Unwin (2013). One participant put this very succinctly: "One of the things that underpin PHE is it sets itself out to be source of authoritative, objective evidence and you would look for a gold standard in academic rigour in statistics that it presents. That's a real trade off in terms of visualisation as you end up with stuff that looks a bit 'academic-y' but we get very anxious about stuff that is, for example, in 3D, that doesn't stand up to academic standards. That's difficult if you're trying to make something compelling and understandable by a range of audiences". Following from this, another participant felt that infographics may be inappropriate to use for a scientific audience and actively avoided using them at specialist conferences.

In addition, there was a tendency in some of the participants to draw a distinction between the function and the decoration of infographics. Decorative words used negatively included 'fancy', 'all singing and dancing', 'cool', 'creative and artistic'. These were classed as detrimental to the goals of the communication. The visual design of infographics in this context therefore requires a certain level of delicacy. Further work is required to understand more about the role that the aesthetic plays in trustworthiness and authority.

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PHE reports include standard bar graphs, line graphs and pie charts and these are often quite detailed (such as graphs featuring confidence intervals). Stakeholders reported how they simplify and repurpose these graphics to share with less specialist audiences. Examples of these were critically presented - "We've got a programme linked to Health Equity North and we wanted to develop a series of infographics linked to that, to feed out, but we haven't got very far with that but we haven't got a budget or design input as such. We've got loads and loads and stats but what stories can we pull from those".

Results concur with Smit *et al* (2014a) in that there is a need for the convergence of skills or the acquisition of specialist staff. Staff discussed problems such as software availability, time, budgets and access to designers. Within the organisations there appeared to be no one who had an official role to make infographics. Often people within public health teams who were accomplished software users 'volunteered' to produce infographics for colleagues. A participant from a council public health department stated "I'd love to have a graphics team in the council who we could work with. We have a communications team and there is a web design component of that but they're always overloaded with work". In terms of tools one participant said "...there are much tighter restrictions about tools […] the ability to innovate and test locally is more difficult." Examples of infographics produced in-house tended to be made using PowerPoint or Excel and thus lacked the qualities of infographics found in the media produced by software such as Adobe Illustrator.

Participants raised the issue of dissemination and it was clear that there was an interest in infographic use within social media and, in particular, Twitter. One participant discussed a local social media campaign that had infographics as its focus. Whilst these were commissioned by an external agency there appeared to be no clear criteria guiding that commissioning process.

Staff had positive views about the potential of infographics though they saw other organisations, particularly charities, as having the competitive advantage. Infographics from particular charities such as the King's Fund and the Rowntree Foundation were cited as good examples. In addition, infographics from newspapers were also cited as memorable and aspirational. There was a negative tone to the discussion of competitors that frequently involved self-criticism. One participant stated "there's so much stuff out there and that's why we've realized we need to pull our socks up with this because there's a lot of voluntary sector organisations and charities, and the private sector where the money is, is really good at this stuff and we need to learn from that". Another participant stated "it's about saying 'yes, if The Guardian can do etc. we should be able to do it, we're not living in the last century". As Heeg (2013) states, media institutions tend to be running away with the format and there is a need for researchers in particular, to develop appropriate skills and develop them quickly.

Ad-hoc collections of good practice were being stored. These were done by some staff on mobile phones or via social media favourites. One participant said "I'm starting to save links and share stuff - a common folder where we can store things." There didn't appear to any central repository

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for infographic resources beyond small teams as there are for photography or clipart. It appears that further work is required to streamline and share the gathering of influences more widely.

There also was a tendency for participants to present a number of projects, with a range of styles and infographic approaches without a coherent strategic vision. One participant said **"**We're all trying it separately. But maybe it's too late as it feels like every ones starting it. Everyone's having a little go". This partly may be down to a lack of published guidelines about best practice. As a participant from PHE said "We've never written anything down in terms of an approach for visualisation". This may be one area to invest in to improve consistency.

Conclusion and Recommendations

As Smit *et al* (2014a, p.352) say "making an information visualization is a difficult and complex process which requires many different disciplines to cooperate and come together ". This wrestling with disciplines is found also in our results. In many ways the key issues raised by staff related to expertise, time, budget and organisation of work in parallel with the journalism industry (Smit *et al*, 2014). What perhaps makes public health more distinctive is the tensions though between 'evidence-based' decisions and the potential rhetoric of data presentation. This tension was not found in the journalism field explicitly and points to the need for further research – how is public health data different to typical news data? How can public health organisations invest in designers to present the data in a way that communicates clearly but avoids patronising a wide-ranging audience?

Our findings show that there clearly is demand for infographics both to be produced and consumed within public health and their stakeholder organisations, but better support is required to facilitate their production. The fact that participants felt like they were being 'left behind' indicates the need for organisations to review their approach to infographic design and production. As part of this review a set of design/commissioning guidelines and a shared resource of good practice for public health professionals would move them further towards a more coherent strategy.

The 'story', an emerging theme within the interviews, mirrors more journalistic approaches and references the work of Segel and Heer (2010) though it was unclear how many of the public health professionals considered themselves 'storytellers' as such. Finding the stories and sharing them are perhaps different activities. Again, guidelines about formats that highlight data stories would be a beneficial addition to a collection of design resources.

This paper reports on the first stage of an AHRC funded project to develop further infographic strategies for PHE and this stage produced a useful set of insights from which to design tools to facilitate the strategy. However, this work scratches the surface of public health infographic design

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issues. Only a relatively low number of interviews were carried out in comparison to the number of workers, although the resultant transcripts are information-rich. More research with comparative organisations, perhaps from other international perspectives, would add further dimensions to the work as would reviewing the work and working methods of charities cited in the interviews. Whilst public health organisations share some common goals with journalism, in the need to tell stories and to manage diverse roles and resources, we need more research to fully understand how public health stories are told to decision makers and to the public.

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