

Perceptions of Early Career Pharmacy Professionals on Data Driven Care

Short Life Working Group Early Findings Report

June 2018; Tahmina Rokib

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Summary

The NHS Five Year Forward View and many other strategic documents highlight the potential for data to transform health and care. The breadth and depth of data collected in the NHS is unparalleled globally and presents huge opportunity. Healthcare organisations are moving towards greater data driven practice, treating data as a strategic asset, putting in place processes and systems that support clinical decision-making and inform the use of resources where it is needed most. However, to enable this, it is vital for the health and care workforce to be upskilled in the use of data and clinical informatics.

A short life working group was created in March 2018 with the aim of engaging early career pharmacy professionals in data driven care. This report summarises the findings from the survey that was disseminated to seek the views of early career pharmacy professionals, to better understand the education and training needs as well as barriers to the access and use of data in pharmacy practice.

Early Findings

A total of 245 responses were received over a period of four weeks; 195 pharmacists and 50 pharmacy technicians. Responses represent a diverse range of roles and clinical specialities, but majority of respondents (60.8%), were employed in secondary care.

Respondents were in overwhelming agreement (91.8%) that data is important in their current job roles and many (61.2%) indicated they were using data to change clinical practice. A range of data sources were being used in routine practice including national datasets for benchmarking, internal clinical systems and reports and locally gathered data for audits.

Several barriers to the access and use of data were identified including: perceived irrelevance to job role, difficulty in accessing data, difficulty in using data due to complexity and usability, lack of training and support in the use of data platforms, lack of time, lack of trust in data accuracy, cost and poor technical infrastructure and hardware. It is apparent there is a need for formal education and training in all elements of clinical informatics and use of data.

Many respondents felt they were able to share good practice with other pharmacy professionals working at the same level and a range of tools and methods were used and preferred depending on the purpose. It was highlighted however that cross-organisational and cross-sector networking and sharing of good practice is less common.

Recommendations

- (1) Introduce formal education and training in undergraduate pharmacy programmes and pre-registration training to introduce the concepts of clinical informatics early and for the development of a future workforce in data driven care.
- (2) Explore the provision of formal education and training to upskill qualified pharmacy professionals the use of data and the manipulation and interpretation of data.
- (3) Showcase the work of early career pharmacy professionals specifically in use of data, at conferences and other networking events.
- (4) Create a cross-organisational, cross-sector network for pharmacy professionals for the sharing of examples of good use of data in practice, and peer support.
- (5) Consider further research to explore differences between sectors of employment and professional groups to identify specific needs in relation to data driven care e.g. training, access and use of data sources.

1. Introduction

The health and care sectors are under significant pressure to manage resources more efficiently while improving patient care. There is impetus for healthcare organisations to become more data driven, treating data as a strategic asset, putting in place processes and systems that allow them to access and analyse the right data to support clinical decision-making and inform the use of resources where it is needed most. More than ever, there is a need for a workforce that is skilled in the interpretation of data to improve clinical outcomes and patient safety.

Clearly, the need for digital literacy across the pharmacy profession is essential to use data and information effectively and there are several national workstreams looking at improving digital literacy of healthcare professionals as the NHS works towards its paperless ambition.

There are areas of good practice of data driven care for example, for the purposes of antimicrobial stewardship and medicines optimisation however this is not widespread and more can be done. Specifically, it has been acknowledged that such practice and activity is generally the responsibility of senior team members and there is a growing need to support and empower early career pharmacy professionals in this area.

To this end, a survey was developed to capture the perceptions of early career pharmacy professionals (incl. undergraduates) up to 10 year's post-qualification, on the use of data¹ in the delivery of patient care.

2. Aims and Objectives

To capture the perceptions of early career pharmacy professionals (incl. undergraduates) up to 10 year's post-qualification, on the use of data¹ in the delivery of patient care; including:

- how often data is accessed and used in current roles;
- identification of the data sources commonly used to inform clinical practice;
- the barriers to access and use of data;
- identification of the education and training needs to enable and encourage data driven care;
- how examples of good practice can be shared.

3. Method

The survey questions were developed following a literature search in this area and in consultation with the Engaging Early Career Pharmacy Professionals in Data Driven Care Short Life Working Group. The survey was distributed primarily via email and social media across a variety of professional networks, over a period of four weeks from 18th April 2018 – 16th May 2018. Participation in the survey was voluntary and consent to use the captured data was gained via the survey. The survey and dissemination plan are included in Appendix 1 and 2 respectively.

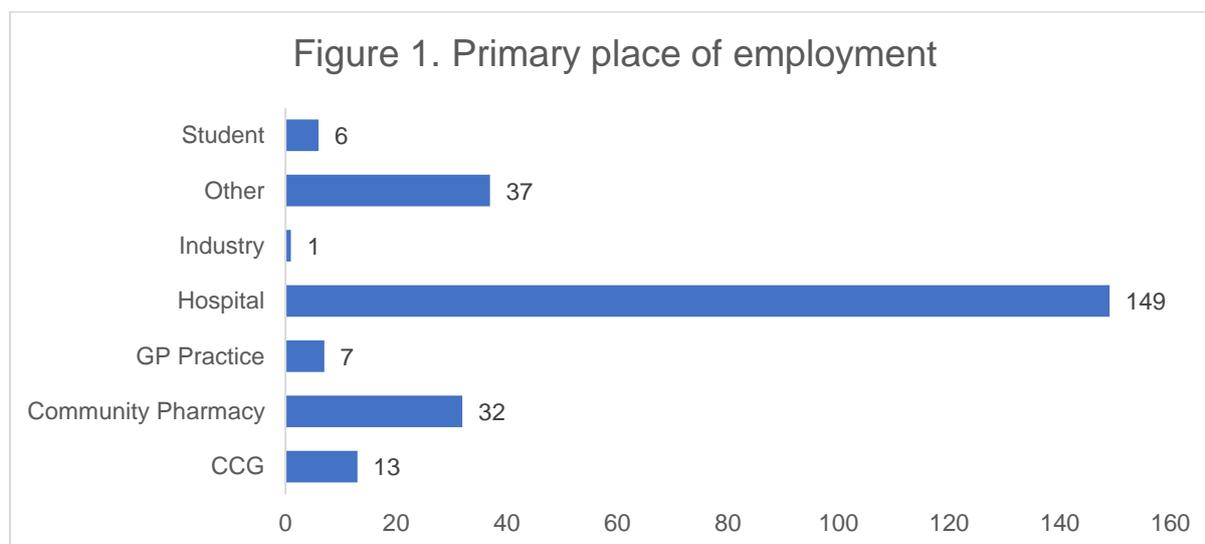
¹ For the purposes of this survey, data refers to medication related information such as prescribing data (e.g. ePACT2) benchmarking data (e.g. Model Hospital) and local audit results.

4. Results

4.1. Characteristics of survey respondents

A total of 245 responses were received; 195 pharmacists and 50 pharmacy technicians.

Figure 1. shows the majority of respondents (60.8%), were employed in secondary care. Responses of “other” included those employed in prison services, community services, informatics, digital start-ups, Darzi fellow, NHS England, academia, commissioning, and other primary care roles. Responses were received from pharmacy professionals working in a diverse range of roles and clinical specialities.



More specifically, respondents were asked if they worked in roles where the use of data is implicit; Formulary Services, EPMA, Medicines Information and/or Commissioning roles. The majority of respondents indicated that they did not work in these roles, as shown in Figure 2. Please note that respondents were able to select more than one answer.

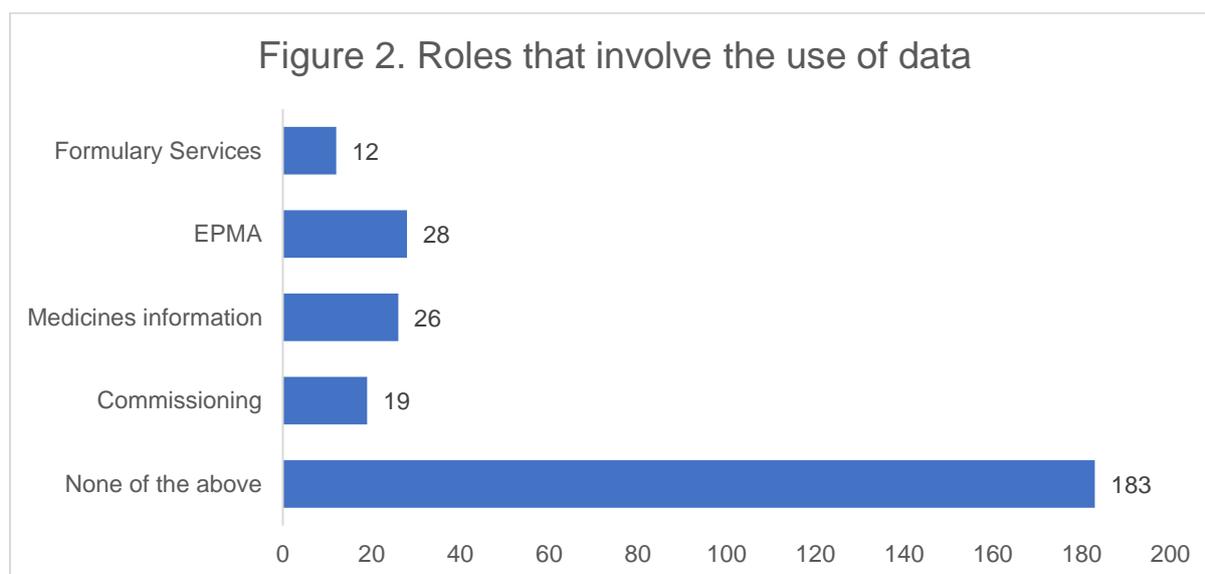
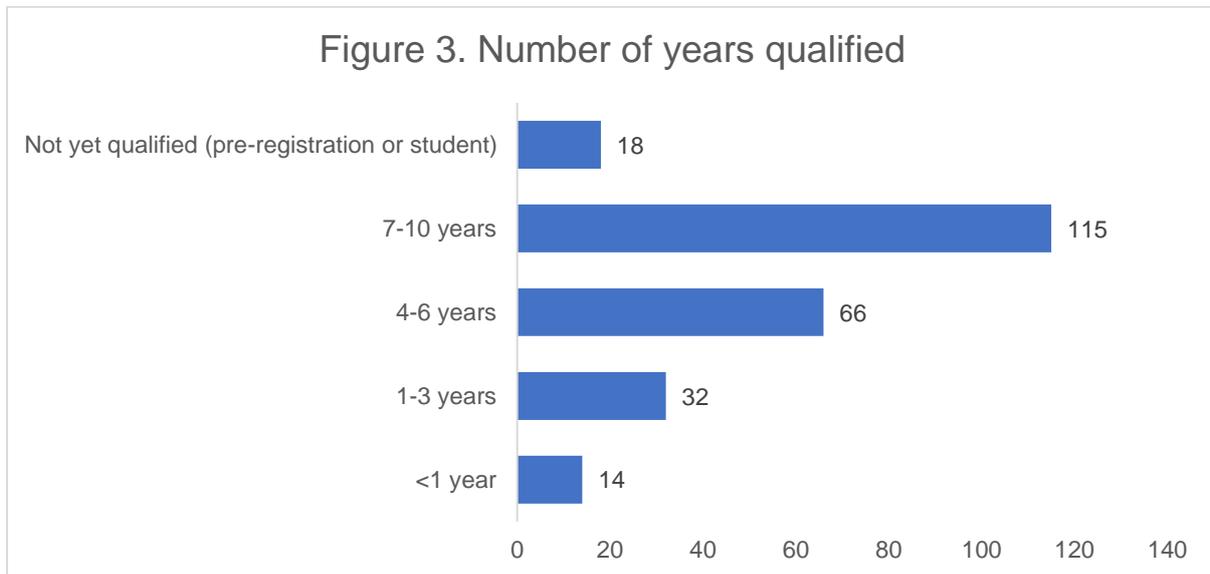
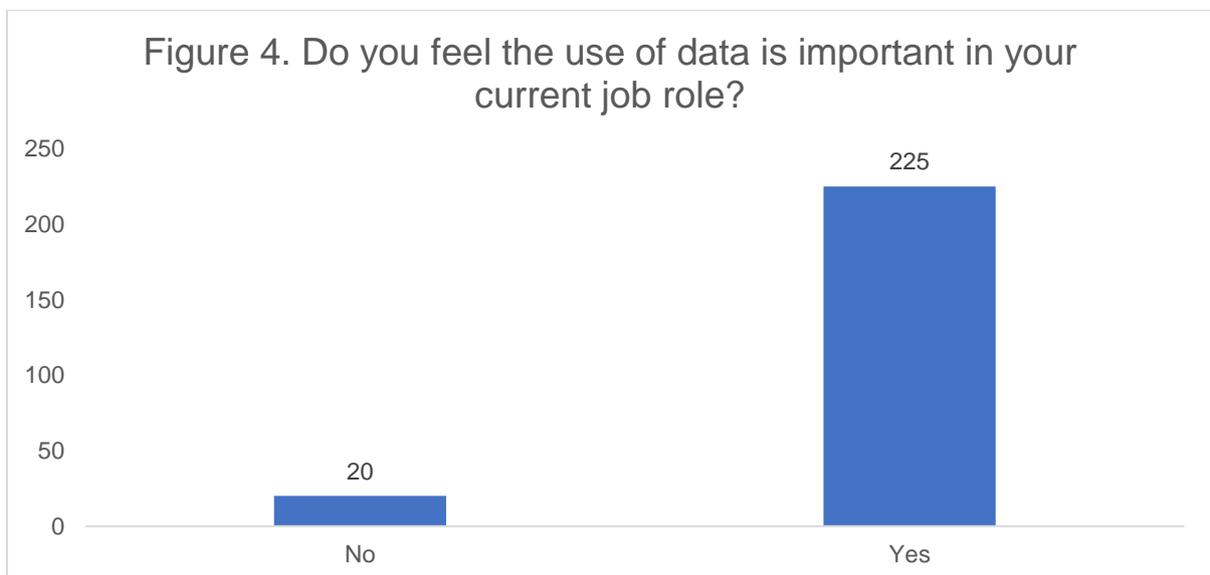


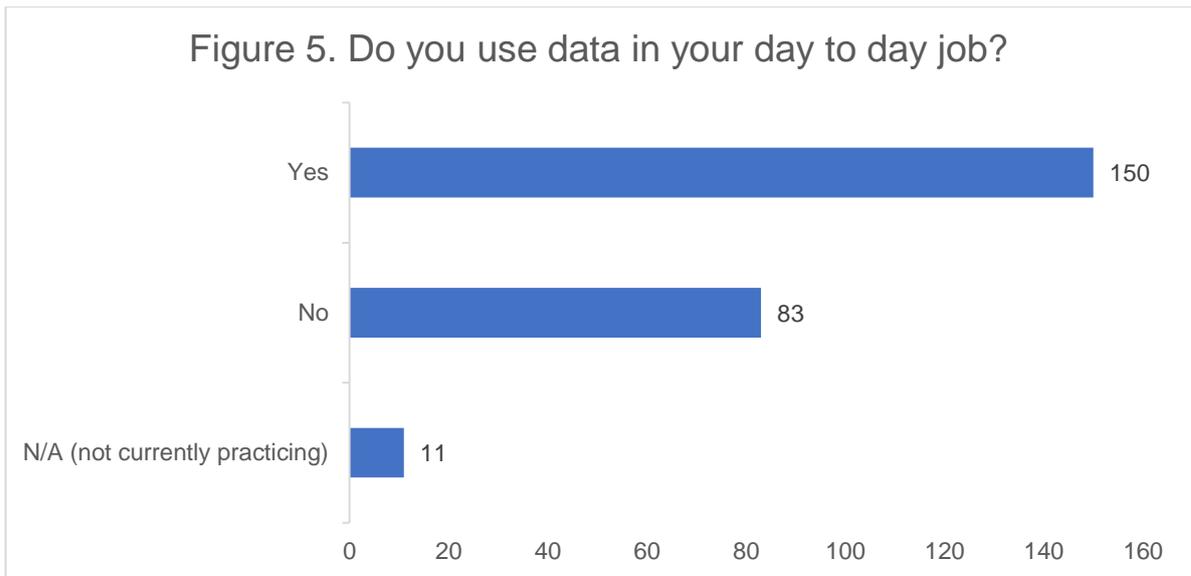
Figure 3. shows 115 respondents (46.9%) were qualified between 7-10 years and 112 respondents (45.7%) were qualified less than 7 years. 18 respondents (7.3%) were not qualified pharmacy professionals.



4.2. Utilisation of data

Respondents were in overwhelming agreement (91.8%) that data is important in their current job roles, however not all (33.8%) felt that they were using data in their day to day jobs, shown in Figure 4. and Figure 5. respectively.

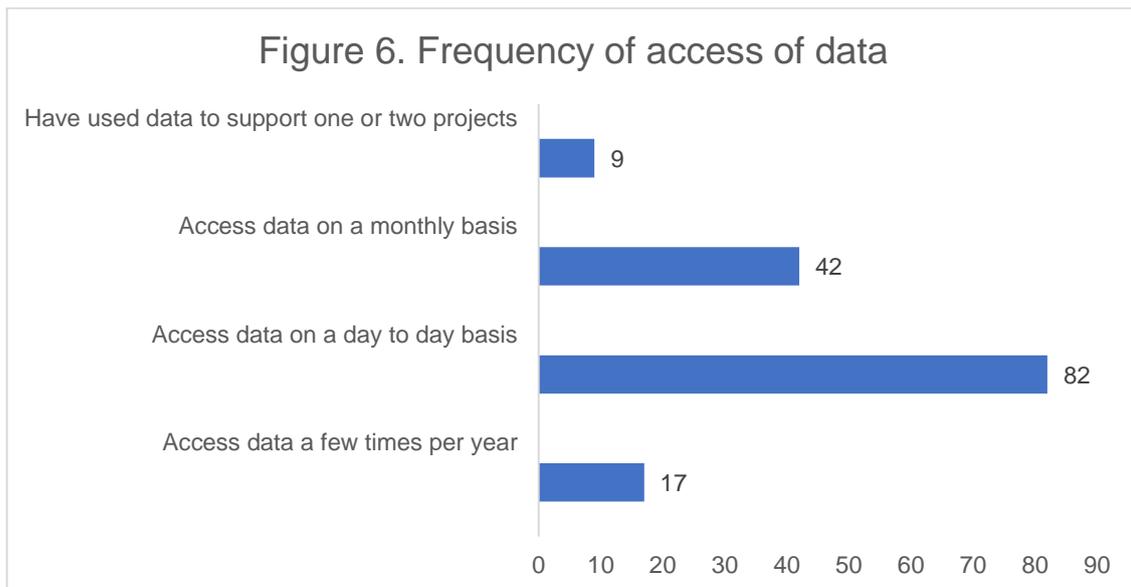




4.2.1. Data sources, access and use in practice

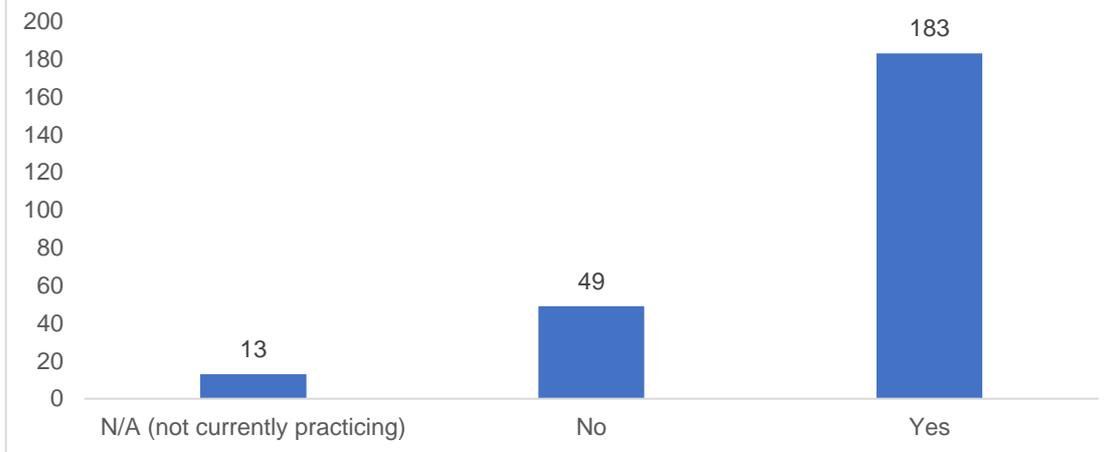
Those that indicating use of data in their day to day jobs, were asked to provide details of the data sources that they access. Responses were hugely varied and commonly included established national data sources and platforms e.g. Model Hospital, ePACT, Define, Refine, PrescQIPP, FingerTips, to name a few. A significant number of responses indicated the use of local benchmarking data, in-house reports and dashboards, queries ran on local clinical systems, electronic health records and EPMA systems, data gathered from local audits and local stock control and ordering information.

These respondents were also asked to indicate how frequently they access and use this data; Figure. 6 shows that most respondents access this data daily.



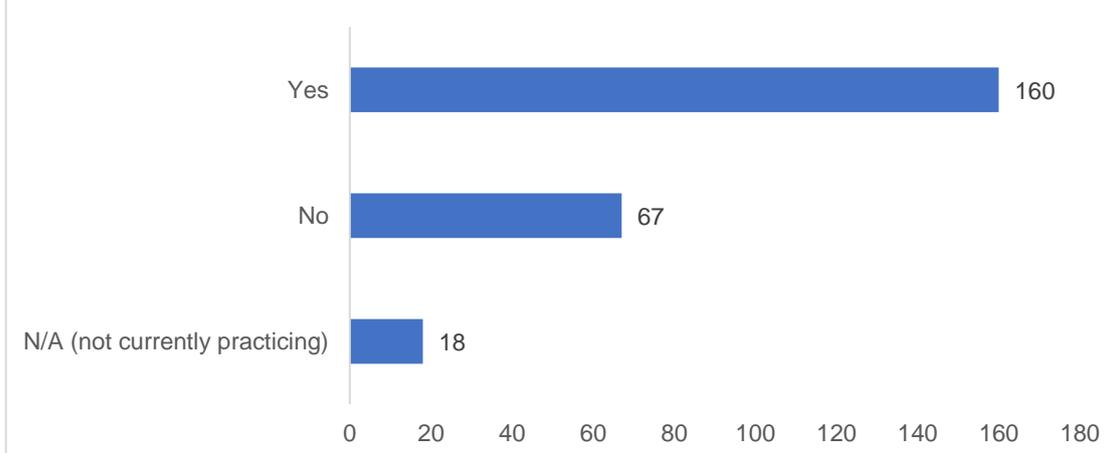
The majority of respondents (77.1%) indicated that they were encouraged to use data to improve patient outcomes within their respective organisations; 49 respondents (20%) felt however that were not encouraged to use data, as shown in Figure 7.

Figure 7. Are you encouraged to use data to improve patient outcomes within your organisation?



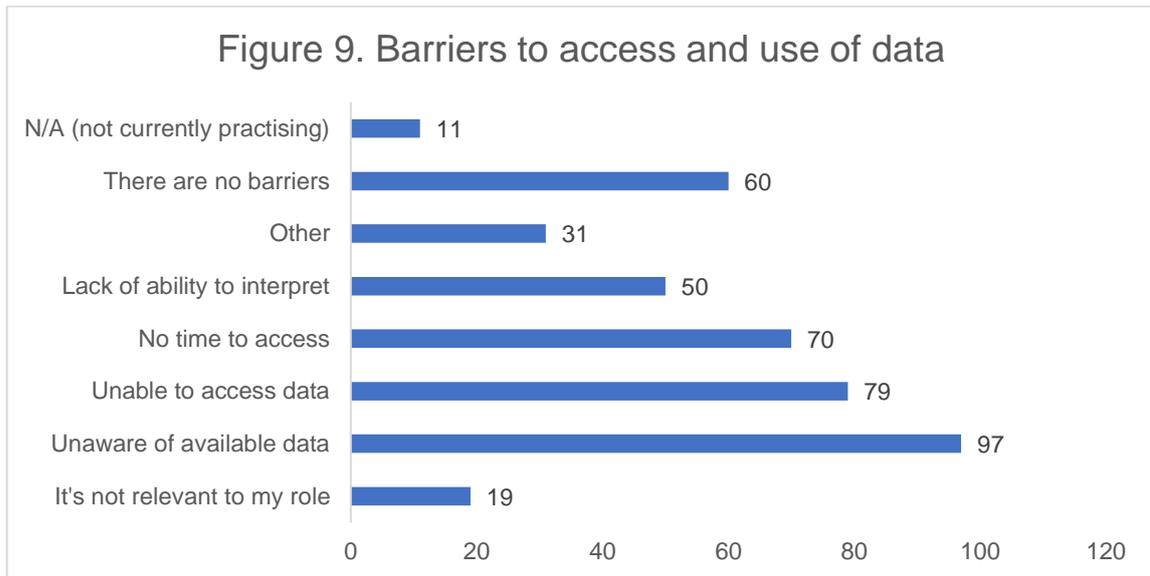
160 respondents (65.3%) indicated they use data to make changes to clinical practice or a service in their current role, shown in Figure 8.

Figure 8. Have you used data to change clinical practice or service in your current job role?



4.2.2. Perceived barriers to the utilisation of data in practice

Despite a significant number of respondents indicating that they use data in their current roles (Figure 8.), several barriers were identified to accessing data and the use of data to drive improvement. This is shown in Figure 9; please note, respondents were able to select more than one answer.



Respondents were provided with further opportunity to comment and explain what the perceived barriers to access and use of data are. The following are the key themes from analysis of these responses supported with quotes:

Perceived irrelevance to job role

"I'm only a locum pharmacist"

"I'm not involved at that level"

"This is more done by the more senior pharmacists/practitioners – I don't have much impact on changing clinical practice."

"My role is mainly ensuring supply of medication and checking interactions. I am not required to change clinical practice"

"I don't work in a clinical or patient facing role."

Difficulty in accessing data

"access to this kind of data within community pharmacy is limited"

"info isn't made available to me and isn't accessible"

Difficulty in using data due to complexity and usability

“Loads of data, finding the best way to use it.”

“not displayed for ease of consumption”

“ePACT2 is so difficult to use”

“... data reporting functions being difficult to use”

Lack of lack of training and support in the use of data platforms

“access to training on the relevant systems”

“junior staff are not trained on this or aware of data sources and potential uses”

“Never been encouraged. It’s always been about collecting this data for others to analyse and make sense of. Never needed to analyse it myself.”

“Although data has shown areas for improvement there has been little direction/support from management to implement changes as result of data and no consideration as to how the data can be put into practice.”

Lack of time

“...there isn’t the time or manpower capacity to do much more than fire-fighting.”

“It takes a lot of time to download and sort the data into usable forms”

“Time restrictions, utilising data stops me from interacting with patients...”

“Not big on data collection as there is too much of it and it takes too long and means less time to do our actual job.”

Lack of trust in data accuracy

“Evaluating which data set is true and accurate... gaps in prescribing data...”

“Changing the attitudes of colleagues to trust the information produced and change clinical practice as a result.”

“Occasionally will be informed about a change but not where the data has come from”

Cost

“License costs for software.”

“Of the audits I’ve done I can show there is a problem but the funding isn’t available to put in place an adequate solution.”

Poor technical infrastructure and hardware

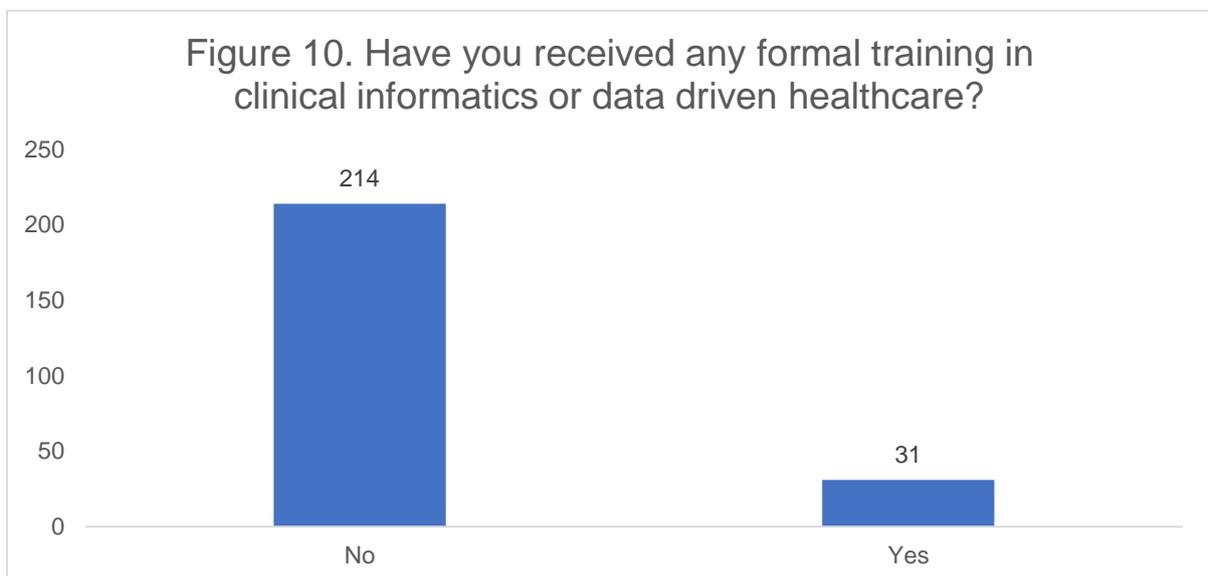
“Initial set up barriers and IT change processes to follow”

“Availability of computers (desktops) on wards. Laptops (carts) have limited uses and intranet access”

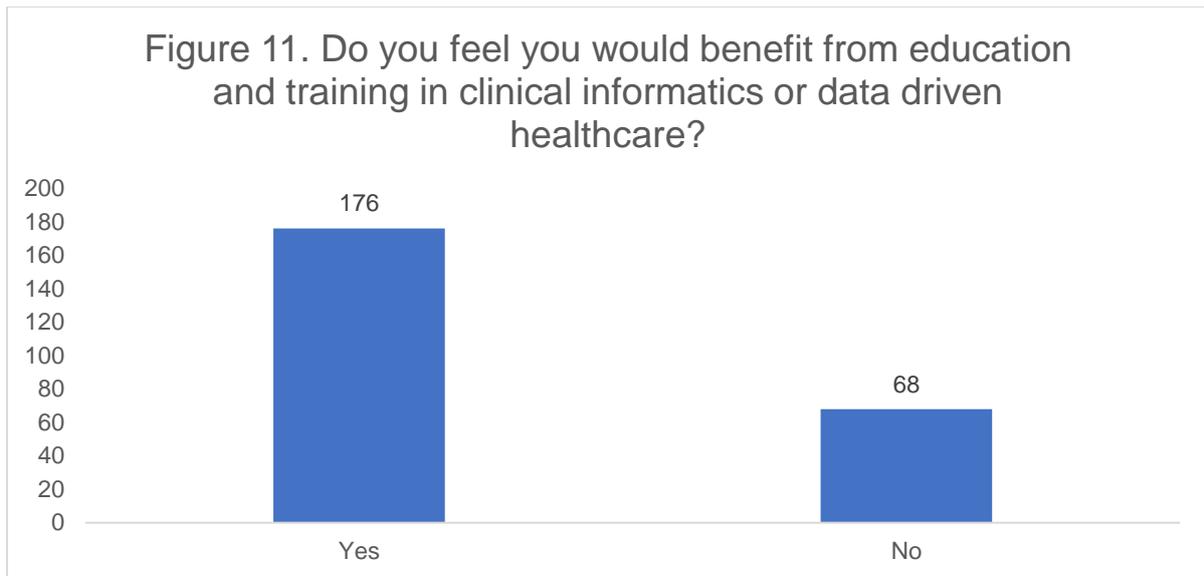
“Computers and internet connection are so slow everything takes ages to load”

4.3. Education and Training

An overwhelming majority of respondents (87.3%) felt they had not received any formal training in clinical informatics or data driven healthcare and many (72.1%) indicated that they would benefit from formal education and training, as demonstrated in Figure 10. and Figure 11². respectively.



² One respondent selected both yes and no therefore the response was not included for the purposes of this figure.



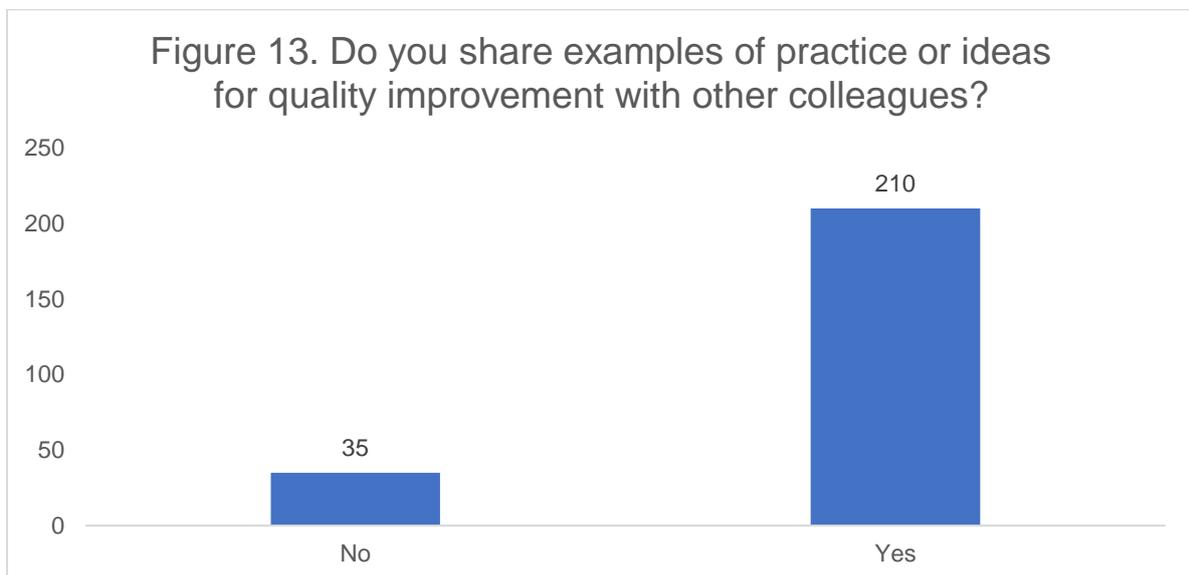
Respondents who had received some formal training, were asked to provide details of the training they have undertaken. The majority indicated that any relevant training was undertaken via post graduate courses or in-house and on the job training. Some respondents indicated they received lectures at undergraduate level and a few stated they had accessed specialist training to use specific data platforms independently, usually as e-learning.

Respondents also provided examples of areas they would like covered in formal education and/or training in relation to data driven care. Responses varied widely, with a significant number stating they were unsure of what topics would be relevant or available. Some suggested education and training in the availability of data, how to access the data, manipulation and interpretation of data would be useful. Many felt that training in the use of specific data sources and platforms would be useful e.g. ePACT, DEFINE. One respondent also indicated that they would like to know how to report discrepancies in nationally collected data and suggest metrics that they would find useful.

4.4. Collaborative Working

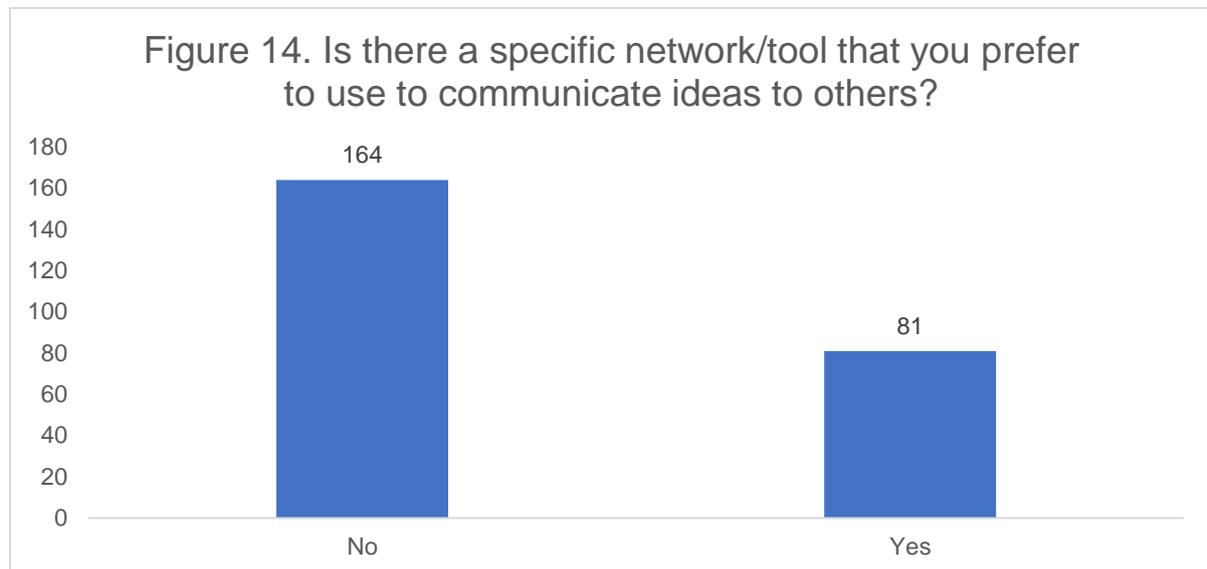
4.4.1. Sharing good practice

Figure 12. shows many respondents (68.5%) felt they were able to share good practice with other pharmacy professionals working at the same level. Most respondents (85.7%) also indicated that they currently share examples of good practice and ideas for quality improvement with colleagues (Figure 13.).



4.4.2. Networking and communication tools

Figure 14. demonstrates that most respondents (66.9%) indicated that they did not prefer any specific networking or communication tool for the sharing of ideas with others.



Those that indicated a preference provided details of which tool they prefer and why. An analysis of these responses highlighted that there is huge variation in the networks and platforms used for the sharing of ideas. Some respondents prefer traditional methods of communication e.g. email (local groups), face to face meetings and CPD events, whilst others preferred a range of mixed media platforms and web-based forums such as, profession or job role specific web-based network platforms and Slack. The responses indicate that closed public platforms such as WhatsApp, Telegram, Facebook and LinkedIn are used for personal communications amongst known contacts, and there are conflicting views about the use of public platforms such as Twitter as a method for sharing good practice. Respondents also felt that there is a need to establish networks for cross-organisational and cross-sector communication and collaboration.

5. Discussion

A total of 245 responses to the survey were received; 195 pharmacists and 50 pharmacy technicians. Although there was representation across the professions and from a diverse range of roles and clinical specialities, the majority of respondents (60.8%), were employed in secondary care. This may indicate that pharmacy professionals working in secondary care have a greater interest in the topic of this survey and felt they had relevant opinions to contribute. The survey dissemination plan (Appendix 2) included dissemination to networks specific to alternative sectors e.g. community pharmacy however responses although received, remain low in comparison. The method of dissemination via predominantly electronic means such as social media may have limited the reach to particular sectors. It is worth noting that respondents who have an interest in data and data driven care may have been more likely to respond to the survey, whereas those who don't see it as part of their role may have been more likely not to respond; this may have influenced the results.

The aim of the survey was to specifically seek the views of early career pharmacy professionals; 46.9% of respondents were qualified between 7-10 years and 45.7% were qualified less than 7 years. Responses from very early career pharmacy professionals (<3 years) however were low (18.7%) indicating that further engagement with this group is needed.

Respondents were in overwhelming agreement (91.8%) that data is important in their current job roles and many (61.2%) indicated they were using data to change clinical practice. Most (54%) of these respondents indicated they were accessing and using data on a daily basis. Majority of respondents (77.1%) also indicated that they were encouraged to use data to improve patient outcomes within their respective organisations.

Data sources commonly used by these respondents predominantly included national data sources e.g. Model Hospital, ePACT, Define, Refine, PrescQIPP, FingerTips. A significant number of responses indicated the use of local benchmarking data, in-house reports and dashboards, queries ran on local clinical systems, electronic health records and EPMA systems. Some respondents indicated use of data gathered from local audits and local stock control and ordering information.

Despite stating that data was important to their job role, 33.8% felt that they were not routinely using it in practice and some respondents (20%) felt that they were not encouraged to use data in their organisations. Several barriers to the access and use of data were identified including: perceived irrelevance to job role, difficulty in accessing data, difficulty in using data due to complexity and usability, lack of training and support in the use of data platforms, lack of time, lack of trust in data accuracy, cost and poor technical infrastructure and hardware.

A number of responses stated they felt data driven care was of less relevance to their role as they felt it was the responsibility of senior members of the team and those in clinical or patient facing roles. One respondent felt it was not typically the role of pharmacy technicians and some respondents who worked in community pharmacy believed it was not part of their day to day working practice. There is a difference in opinion amongst the respondents with many indicating they feel it is important to their job role whilst some are less convinced.

Respondents also raised a number of challenges in accessing data and using the various data sources and platforms available as well as knowing the available sources in the first place. It is clear that respondents felt greater support was needed in the use of data

platforms as well as improved infrastructure and hardware to enable routine use of such data platforms. There were also a number of respondents who raised concerns with data quality and integrity which impeded the use of data in their organisations. Lastly it was felt that due to the complexity of data platforms, multiple sources of data and poor availability of hardware, use of data in routine practice is time consuming and can detract from core responsibilities and time for direct patient facing care.

Responses indicate an apparent need for formal education and training in all elements of clinical informatics; the use of data sources as well as the manipulation, interpretation and implementation of data. The majority indicated that any relevant training was undertaken via post graduate courses or in-house and on the job training. Some respondents indicated they received lectures at undergraduate level and few stated they had accessed specialist training to use specific data platforms independently, usually as e-learning.

Many respondents (68.5%) felt they were able to share good practice with other pharmacy professionals working at the same level. Most respondents (66.9%) indicated that they did not prefer any specific networking or communication tool for the sharing of ideas with others. Amongst those respondents who indicated a preference, a range of tools and methods were used and preferred depending on the purpose.

Some indicated a preference for traditional methods of communication e.g. email (local groups), face to face meetings and CPD events, whilst others preferred a range of mixed media platforms and web-based forums such as, profession or job role specific web-based network platforms and Slack. Closed public platforms such as WhatsApp, Telegram, Facebook and LinkedIn were commonly being used for personal communications amongst known contacts. There were conflicting views about the use of public platforms such as Twitter as a method for sharing good practice; some felt it was not a good method to reach peers and share examples of practice and information can become lost. Others felt it was a great way to reach out to wider networks and contacts. It was also apparent that there were limited or no existing cross-organisational and cross-sector networks and that this would be useful for improved communication and collaboration beyond individual organisational teams.

6. Conclusions

The NHS is rich in data and there is a drive to use this as a strategic asset to support clinical decision-making and inform the use of resources where it is needed most. To enable this, it is vital that the workforce is developed to be skilled in the interpretation of data and application in clinical practice. It is clear that whilst many early career pharmacy professionals recognise the importance of data and the need to make better use of data there are some reservations on whose role this is. There are also a number of barriers that were identified which limit access and use of data platforms in routine practice for some however many indicated that they were using data to drive changes in clinical practice. Most felt that there is a need for formal education and training in all elements of clinical informatics and data driven care as there is little opportunity at present with the majority accessing learning through post-graduate courses, in-house e-learning modules and on-the-job training. It was also apparent that although many felt they were sharing examples of good practice and using existing networks and communication tools that a purpose-built cross-organisational, cross-sector network for pharmacy professionals was needed.

7. Recommendations

- (1) Introduce formal education and training in undergraduate pharmacy programmes and pre-registration training to introduce the concepts of clinical informatics early and for the development of a future workforce in data driven care.
- (2) Explore the provision of formal education and training to upskill qualified pharmacy professionals the use of data and the manipulation and interpretation of data.
- (3) Showcase the work of early career pharmacy professionals specifically in use of data, at conferences and other networking events.
- (4) Create a cross-organisational, cross-sector network for pharmacy professionals for the sharing of examples of good use of data in practice, and peer support.
- (5) Consider further research to explore differences between sectors of employment and professional groups to identify specific needs in relation to data driven care e.g. training, access and use of data sources.

Appendix 1: Survey

Exposure of Early Career Pharmacy Professionals to Date Driven Care

Page 1: Page 1

The collation of data* and information, its analysis and measurement using information technology perpetually drives continuous improvement. It supports the development of processes and helps to identify gaps in knowledge.

The following questionnaire has been developed to capture your perceptions on the use of these data in the delivery of patient care within your current role.

*For the purposes of this survey, 'data' refers to medication-related information such as prescribing data, benchmarking data (such as the model hospital, RightCare), local audit results etc

Section 1: Utilising Data

1. Do you feel the use of data is important in your current job role? * Required

Yes
 No

2. Do you use data in your day to day job?

Yes
 No

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[Click to open PDF document for full survey](#)

Appendix 2: Survey Dissemination Plan



Early career pharmacy professionals and data driven care – Survey dissemination plan

Different survey distribution methods provide varied opportunities to increase the reach of the questionnaire. The size of the sample and the target audience both may have a strong bearing on the best way to reach respondents. For the purposes of this questionnaire, early career pharmacy professionals (across all sectors; qualified for <10 years) are the target audience with currently no limit on size of the sample collection.

Survey to run for **4 weeks** in total (starting Wednesday 18th April until 16th May 2018)

	<p>Posts on Social Media Post survey link on Twitter/Facebook <i>Dissemination Date: 18/04/18</i> <i>Responsibility: All CPhO Fellows/Members of the SLWG/RPS-Gareth Kitson</i></p>		<p>Posts on Pharmacy Networks Link to survey to be included in all network correspondences/embedding a link on their websites/launch a pop up. <i>Dissemination Date: 18/04/18 – 20/04/18</i> <i>Responsibility: All CPhO Fellows</i></p>
	<p>Send by Email Create custom email and add link to all NHSE/RPS email lists and track who responds. Send follow up reminders to those who haven't responded. <i>N.B. RPS list limited to paying members & unable to filter to early career pharmacy professionals only.</i> <i>Dissemination Date: 18/04/18</i> <i>Responsibility: NHSE CPhO Fellow & RPS contact</i></p>		<p>Alert via Newsletters A paragraph outlining the work in the monthly NHSI newsletters to secondary care and RPS e-news to members. <i>Dissemination Date: 18/04/18</i> <i>Responsibility: NHSI CPhO Fellow & RPS contact</i></p>
	<p>QR code to download survey at Conferences To use a smartphone or tablet to scan the code that can take the respondent straight to the survey. To add QR code to printed materials or signage, as it can be easier to scan a code than type a long URL into a browser. Conferences in the next 4 weeks include Clinical Pharmacy Congress & Mental health chief pharmacist's conference.</p>		<p>Other (dissemination dates 18/04/18-20/04/18; responsibility assigned per contact)</p> <ul style="list-style-type: none"> - To create a slide for inclusion in all presentations @ CPC (NHSE and PHE Fellow) - Telegram/Slack/whatsapp groups (all members of the SLWG/CPhO Fellows) - Boots/Lloyds/DayLewis (Rahul.M)

[Click to open PDF document for full survey](#)