

Development of a Clinical Research Consortium Position Interview Panel within the Department of Veterans Affairs Health Care System

Cyenthia Willis, RN, BSN, CCRP ¹

¹ VA North Texas Health Care System

Kandi Velarde, MPH, CCRC ²

² VA Salt Lake City Health Care System

Karen Bratcher, RN, MSN, CCRC ³

³ VA Palo Alto Health Care System

Debra Condon, MSN, RN, CCRP ⁴

⁴ Minneapolis VA Health Care System

Marcus R. Johnson, MPH, MBA, MHA ^{5,6,7}

⁵ Durham VA Health Care System

⁶ Gillings Global School of Public Health, The University of North Carolina at Chapel Hill

⁷ Department of Public Health, Brody School of Medicine, East Carolina University

Grant Support

The project reported/outlined here was supported by the Department of Veterans Affairs, Cooperative Studies Program (CSP).

Abbreviations

CSP	Cooperative Studies Program
ORD	Office of Research and Development
VA	Department of Veterans Affairs
VAMCs	VA Medical Centers
NODES	Network of Dedicated Enrollment Sites
PD	Position Description
HR	Human Resources
MIP	Manager Interview Panel
ADO	Associate Director - Operations
NPC	NODES Program Consultant

Abstract

The landscape of clinical research is continuously evolving, focusing now on the scientific assessment of efficacy balanced with patient safety, along with advancements in technology and informatics. These considerations necessitate the acquisition and retention of experienced staff that will be able to meet the demands associated with these new focus areas and can provide support for administrative duties, regulatory duties, study participant management, and data collection at individual research sites. Furthermore, the identification of Clinical Trials Administrators that can function independently and collaboratively within a large, integrated healthcare system clinical research consortium can be a challenging task. Currently, there is a limited amount of publicly available information on strategies that have been employed to identify these types of candidates in this type of setting. The primary aim of this project was to determine if the development of a virtual interview panel, or Manager Interview Panel (MIP), would be effective in screening, interviewing, and ranking applicants for a vacant Associate Director - Operations (ADO) position at one of the Node sites in our clinical research consortium. The findings may inform individuals or groups in research administration and leadership roles seeking to improve the candidate selection component of their respective hiring processes, particularly for those groups that are a part of clinical research consortiums and have study sites that are geographically dispersed and not in close proximity to one another.

Keywords:

Management; Hiring; Clinical Research; VA; CSP

Background:

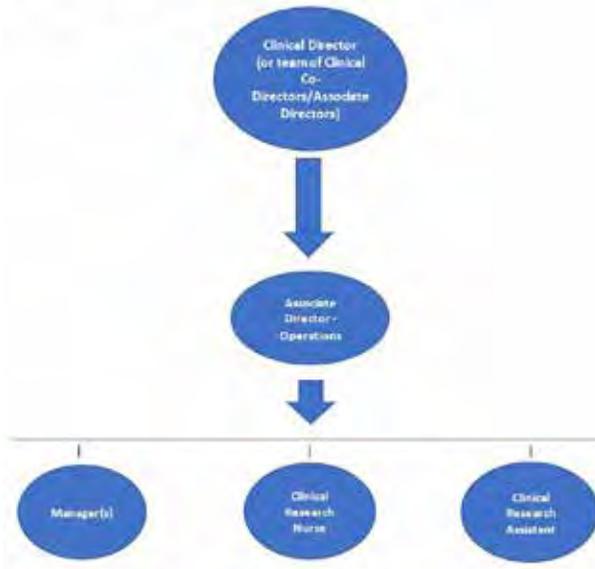
The landscape of clinical research is continuously evolving, focusing now on the scientific assessment of efficacy balanced with patient safety, along with advancements in technology and informatics (Bhatt, 2010; Khan & Weng, 2012; Fiordelli et al., 2013). These considerations necessitate the acquisition and retention of experienced staff that will be able to meet the demands associated with these new focus areas and can provide support for administrative duties, regulatory duties, study participant management, and data collection at individual research sites (Owens Pickle et al., 2017). Furthermore, the identification of Clinical Research Administrators that can function independently and collaboratively within a large, integrated healthcare system clinical research consortium can be a challenging task. Individuals in these positions must have senior management experience in a clinical research environment and should have extensive experience in strategic planning and resource management (personnel, space, facilities, etc.). They must also have prior experience that demonstrates their ability to provide oversight, leadership and mentorship to clinical research professionals, ensure appropriate resources and support for clinical research efforts, and an ability to promote teamwork and cultivate a strong network of clinical research professionals. Lastly, they should be knowledgeable with regards to regulations that are employed in clinical research settings, e.g. the International Conference on Harmonization (ICH), Health Insurance Portability and Accountability Act (HIPAA) and Good Clinical Practice (GCP) (Lindström-Gommers & Mullin, 2019; Jackson, 2020; Friedman, 2006; Guerrini et al., 2019). Ideally, the candidate would also be certified in research through a credible association.

Currently, there is a limited amount of publicly available information on strategies that have been employed to identify these types of candidates in this type of setting, and the majority of literature in this area has a primary focus on the recruitment of clinicians for clinical research positions (Johnson et al., 2018; Unertl et al., 2018; Raftery et al., 2009; Rahman et al., 2011). Therefore, establishing a best-practice method for the hiring of this position is vital. The Department of Veterans Affairs (VA) is the United States' largest integrated healthcare system and provides comprehensive care to more than 9 million Veterans each year (2020). The Cooperative Studies Program (CSP), a division of the Department of Veterans Affairs (VA) Office of Research and Development (ORD), was established as a clinical research infrastructure to provide coordination and enable cooperation on multi-site clinical trials and epidemiological studies that fall within the purview of VA (Huang et al., 2010). The CSP established the Network of Dedicated Enrollment Sites (NODES) as a consortium of sites that are dedicated to generating systematic site-level solutions aimed at enhancing clinical

research activities (Condon et al., 2017; Bakaeen et al., 2014; Johnson et al., 2018; Velarde et al., 2018). NODES provides innovative approaches to address barriers related to clinical trial execution, including hiring of qualified clinical research staff. Each Node site is led by a Clinical Director (or team of co-directors/associate directors), an Associate Director - Operations, and other clinical research support staff, e.g. Clinical Research Nurse, Clinical Research Administrator, and Clinical Research Assistant (see Figure 1). Brief descriptions of these roles can be found in Appendix A.

To effectively execute clinical research activities at the site level, special emphasis should be placed on identifying and hiring exemplary Program Managers, identifying those with a tenacious spirit and perseverance capable of overcoming numerous barriers to facilitating clinical research (Ni et al., 2019; Institute of Medicine, 2009, 2010). The primary aim of this project was to determine if the development of a virtual interview panel, or Manager Interview Panel (MIP), would be effective in screening, interviewing, and ranking applicants for a vacant Associate Director - Operations (ADO) position at one of the Node sites in our clinical research consortium. The findings may inform individuals or groups in research administration and leadership roles seeking to improve the candidate selection component of their respective hiring processes, particularly for those groups that are a part of clinical research consortiums and have study sites that are geographically dispersed and are not in close proximity to one another.

Figure 1. Node Site Organizational Structure



Methods

Management Interview Panel (MIP) Development

Interview panels provide varying perspectives and help eliminate biases in the decision-making process around the selection of candidates for a position. They can also be comprised of members from varying backgrounds and experience depending upon the position being hired (Hardavella et al., 2016). Some companies may find it beneficial to construct an interview panel using staff from a variety of roles such as a financial officer, administrative officer, a staff member in a comparable role, or a Human Resources (HR) officer, while another organization may only use one interviewer (generally the one that will be supervising the posted position). Traditionally, job interviews have been conducted in a face-to-face setting; however, in recent years, telephone interviews and Skype™ interviews have become more commonplace (Higgins, 2014). The method we decided on was a phone interview, initially, due to the fact the MIP team members were located at various VA Medical Centers (VAMCs) across the United States, and it would have been cost-prohibitive to utilize a face-to-face approach during the initial round of interviews.

As a general consideration, each Node site has its own unique hiring practices based on 1) preference for either nurse or non-nurse clinical research positions, and 2) contract services through external entities, i.e., VA affiliated non-profit organizations, academic medical center affiliates, etc. Some interview panels are comprised of personnel from HR, clinical specialty groups, e.g. nursing, medical sub-specialties, etc. (as applicable). Generally, sites work collaboratively with their Human Resource department performing background and reference checks. Prior to implementing this approach in other settings, it would be beneficial to determine what the precedent is for developing interview panels at the respective organization. While the use of an interview panel may serve as a useful resource during the candidate selection process, this is only one aspect of the recruitment process. Additional steps will include working with an organization's HR Department to complete background investigations, verify previous or current employment, and conduct personal reference checks identified by the candidate (United States Office of Personnel Management, 2020a).

The MIP was comprised of several ADOs and the NODES Program Consultant (NPC) who provides education and training to NODES staff and site study members across the program. The composition of the MIP was critical to the success of this approach as all interview panel members either currently serve or have served in the ADO position and had extensive management experience. Furthermore, three of the four interview panel members have served in the ADO position since the inception of the NODES Program (October 2012), and the fourth member has been with the

program in that position for more than four years. Having their perspective on the panel was critical as they all have knowledge and experience with regards to the skills and competencies that an applicant needed to possess to be successful in the ADO position.

Preparatory Phase

The preparatory phase entailed numerous steps and consisted of four primary components as described below: 1) Interview Question Development, 2) Job Posting/ Applicant Pre-screening, 3) Date Setting, and 4) Interview Packet Distribution.

1. Interview Question Development

The interview questions used for this initiative were derived from example interview questions taken from the VA Health Care Performance Based Interviewing website (2018). These questions were then restructured to meet the needs of the research area and NODES management. The MIP utilized reflective enquiry from previous work experience in the respective position to finalize these questions based on several key factors: past, current and anticipated program challenges or barriers; NODES program-wide strategic goals and future directions; and generalized professional characteristics deemed highly beneficial for clinical trials management. The majority of these questions were open-ended and required the candidate to respond with prior situational experiences or working knowledge as is typically found in performance-based interviewing approaches (Ostrom et al., 2016). Once the questions were drafted, they were then sent to both local (the hiring Node site) and national NODES leadership for additional feedback and final approval. The questions were weighted, dependent upon the importance of the competency and/or responsibility as it related to the position. The final product was a comprehensive 14-question interview tool that broadly covered six behavioral categories (see Figure 2). Interviewees were asked a variety of situation-based questions surrounding technical skills, critical thinking, stress management, budget resource allocation, leadership, staff recruitment and retention (see Figure 2). Examples of questions asked of candidates were: 1) describe

Figure 2. Interview Question Domains



a situation where they felt responsible for getting others to make a change, 2) describe their own leadership style and what leadership style that they most preferred, and 3) what was their approach to delegating work to employees and ensuring that these tasks were completed?

2. Job Posting/Applicant Pre-screening

Many private/industry organizations may not consider the geographical location of the candidate as an important factor. However, USAJOBS.gov is the primary employment website used by all federal agencies within the United States federal government, including the Department of Veterans Affairs and reaches potential job seekers across the nation. It is a robust employment website platform with one billion job searches conducted on the website annually; and more than 14,000 jobs posted monthly (United States Office of Personnel Management, 2020b). In order to further expand the reach of the job posting to potential applicants, the position was also posted on Indeed®, an external (non-federal government) employment-related search engine for job listings (Wheeler et al., 2003).

The NODES Program Consultant conducted pre-screening of the candidate applications. The objective of the review was to identify candidates that met the requirements described on the PD. A few of the major criteria accessed were the candidate's education, experience, relevant certifications, work history (job turnover/longevity within the past five years), and the geographical location where the candidate resided at the time of application submission. This was an important consideration since relocation would have likely been an important factor for the candidate.

3. Date-Setting

Initial contact with the candidates was made after development of the interview tool was completed and the MIP was established. The NPC reached out to the interview team members and collaboratively selected one day that all members could dedicate to conducting interviews; all candidate interviews were conducted on this single identified date. Of note, six candidates were selected during the pre-screening phase to move forward in the interview process, and therefore, six candidate interviews were conducted on this date. Once the interview date was confirmed and the time frames for interviews were determined, the candidates were contacted to schedule their interviews. Each candidate was initially contacted by phone and if there was no response within 24 hours of this call, an email was generated and sent to them. The MIP had a 100% success rate for reaching all candidates and confirming interview times. A total of 40 minutes was allotted for each interview.

4. Interview Packet Distribution

The NPC sent out the interview packets to the MIP team members prior to the scheduled interviews. The packets included the interview questions, a candidate ranking/scoring tool, and the candidate's resume or CV. The packets were sent one week in advance so that the MIP had ample time to review the information and address any potential concerns with other members of the group prior to the interview.

Interview Phase

The Interview phase was comprised of a phone and face-to-face interview with the candidate and is described in greater detail below.

Interviewing Process

The MIP briefly met prior to each phone interview to confirm the interview procedure and discuss any considerations related to the candidate that were of potential importance. The flow of the interview was established as such that each member of the MIP asked a series of three questions, and then this pattern was repeated by the other members of the MIP until all the interview questions were completed. The NPC facilitated the interviews by welcoming the candidate, introducing the MIP team members, and providing them with a brief overview of the interview structure and process, prior to initiating the series of interview questions.

Each member of the MIP engaged with the candidate by asking their assigned questions. There was enough time for the MIP to discuss the candidate's application before and after each interview. Between each candidate interview, the MIP reviewed the previous candidate's responses to the questions before proceeding to the next interviewee to ensure detailed attention was given to the candidate's responses, and each question was rated using an accumulative scoring grid with a scale of zero to five. Each interview panel member scored their questions individually.

Each interview concluded with the NPC informing the candidates what the next steps of the hiring process would be and that they would be notified if a subsequent face-to-face interview was desired. Candidates not selected by the MIP to move forward in the interview process were contacted by the VA affiliated non-profit organization to inform them they were not selected as a candidate. Once all the interviews were completed, the MIP reviewed the scoring grids and tallied their scores for a cumulative total. The top two ranked candidates (based on the cumulative interview score totals) were identified and a recommendation from the MIP was provided to the local site NODES Director. The NODES Director then conducted a final face-to-face interview

and made the ultimate decision on which candidate would be selected for the position. The local NODES Director, to whom the ADO would report, coordinated and conducted a face-to-face interview and a final selection was made. Figure 3 provides an overview of the entire MIP process.

Figure 3. Manager Interview Panel Process



Outcomes

The process of using NODES ADOs from various VA Node sites is new for the NODES program. It has the potential for success due its collaborative approach, the beneficence of ADOs with expertise in clinical research and management currently in the same role, and utilization of remote interviewing for the initial set of phone interviews. This approach offered a cost-effective avenue for both the candidate and interview panel to engage with potential job candidates from different regions. This strategy resulted in the following:

» Two top-ranked candidates were identified for a second face-to-face interview with the local/site NODES leadership and a candidate selection was made in a timely manner.

- » The MIP process offers an innovative approach that utilizes:
- Experienced Clinical Research Administrators (NODES ADOs) Associate Directors - Operations as interviewers
 - Comprehensive interview tools that can assess a job candidate's knowledge, skill, and competencies as they relate to clinical research and management
 - Increased communication and collaboration between the interviewers
 - Early identification of ideal position candidates
 - Expedited candidate selection

The selected candidate has been in the position for greater than six months now and is a contributing team member to both the local Node site and the national NODES program. The selected candidate is also receiving mentoring by other ADOs in the program to ensure their continued growth and success in the position. The new ADO has provided the following feedback on their new role: "Since accepting the ADO position in June 2019, I feel my knowledge and confidence in overseeing and managing the local/site CSP study portfolio has grown tremendously. I contribute most of the transition success in the position to the fact that I'm able to reach out to other ADOs as a resource. The wide range of experience and range of expertise these ADOs have offers a collective and vast pool of knowledge."

Discussion

The ability of a clinical trials unit to successfully plan and execute research activities is highly contingent upon identifying and hiring a proficient and collaborative Clinical Trials Administrator. While the concept of interview panels is not new, leveraging the shared experience and knowledge of a national program network's panel members that currently serve or have served in the ADO position within a large integrated healthcare system is unique. The creation of a MIP facilitated an expedited and efficient approach to hiring and selecting the most highly qualified candidate for a site-level Senior Level Manager (e.g. ADO) position.

One of the major benefits of a clinical trials consortium is that this natural collaboration enables members to work willingly and respectfully toward the goal of hiring a skilled and experienced candidate to join their team. Capitalizing on the use of telephone interviews since MIP team members were located at various VA Medical Centers (VAMCs) in different states, was cost-effective. Phone interviews also assisted in expeditiously identifying the best candidates early in the hiring process. The interview process itself provided ample time for interviewing of the candidate immediately and a follow-up discussion of the scores. In addition, the timing of these discussions and

scoring completed by the MIP allowed for real-time assessment of the interviewee responses, decreasing the likelihood of forgotten or altered interpretations. The MIP team created the interview questions, coordinated and conducted the interviews, and submitted the top candidates for the next phase of the hiring process (face-to-face interviews) within six working days. Once the candidate was selected and assumed the role of ADO, the MIP would also serve as familiar resource and be available for additional mentorship, as needed.

Since this process has only been employed once, to date, an identified weakness of this approach is that the MIP has not had the opportunity to duplicate this method for the ADO or other NODES positions (i.e. Clinical Research Nurse, Clinical Research Administrator, Clinical Research Assistant, etc.), thereby the generalizability of this strategy is undetermined. Secondly, in the absence of face-to-face capabilities, the interviewers miss the opportunity to observe facial expressions and body language which may provide added feedback regarding the candidates' behavior or overall composure; thus, making it difficult to assess if the applicants are providing honest responses (Suttle, 2019). The addition of a video conference call (e.g. Skype™) would have alleviated this limitation. Though, it is important to note that the local NODES Director, to whom the ADO reports, ultimately conducted an in-person interview in the final interview phase. Lastly, it is challenging to ascertain if there is a positive chemistry between the interviewers and a candidate, which suggests the likelihood of a long-term working relationship, without the face-to-face exchanges between these parties (Scott, 2019).

An additional consideration that would aid in a virtual hiring approach would be the implementation of an online assessment for candidates to screen and gauge skillsets directly related to the position. For instance, questions targeted toward assessing attitude, subject knowledge, and aptitude in relation to clinical trials administration could be evaluated using an online questionnaire. The advantages of a virtual test would be ease in scalability, convenience, and easy access for users (Joshi et al., 2020). Within the VA environment, online data capture tools such as Research Electronic Data Capture (REDCap™) or SurveyMonkey® could readily be utilized for assessing high-potential candidates with more efficiency. While there are many virtual platforms that can be used in this hiring approach, these two platforms have routinely been used within the VA setting and could easily be incorporated into this approach (Harris et al., 2009; SurveyMonkey® Inc., 2020).

In conclusion, the utilization of the Management Interview Panel (MIP) was an effective hiring approach that allowed our team to screen, interview, and rank applicants for the ADO position at a Node site. The employment of this tool resulted in the successful

hiring of an applicant for this position. It is anticipated that the Node sites will expand to include up to ten additional sites, thus making it critical to evaluate and implement a similar approach for selecting qualified candidates. Additional work is needed to determine the effectiveness of this strategy for other positions in our organization, and for other applicants, in order to determine the generalizability of this approach for our program and for other organizations as well. Assessing the potential performance of a candidate for a position in a clinical research setting is complex due to a myriad of factors associated with the nature of research positions (Johnson et al., 2020). Therefore, the identification of strategies that can be employed to increase the likelihood of the selection of the most ideal candidates for these types of positions will likely be beneficial to the clinical research community, and can potentially have a positive impact on the hiring process in other types of industries as well.

Disclaimer

The views expressed in this article are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs or the government of the United States.

Authors' Note

This initiative was supported by the VA Cooperative Studies Program. The other current members of the VA Network of Dedicated Enrollment Sites are as follows: Terence M. Keane, PhD, Pantel S. Vokonas, MD, Makaila Decker, BS, Caroline Truland, RN, Mikaela Wegerhoff, BS – VA Boston Healthcare System, Boston, MA; James LePage, PhD, Eleanor Lederer, MD, FASN, Jennifer Compton, RN - VA North Texas Health Care System, Dallas, TX; David Leehey, MD, Conor McBurney, MPH, Stephanie Keen, BS, CP - Edward Hines, Jr. VA Hospital, Hines, IL; Panagiotis Kougias, MD, MSc, Sarah Perusich, CCRP, Mona Amirmazaheri, MS, Maxwell Stewart - Michael E. DeBakey VA Medical Center, Houston, TX; Timothy Morgan, MD, Aliya Asghar, MPH, CCRC, Karyn Isip, BA, Tasadduq Karim - VA Long Beach Healthcare System, Long Beach, CA; Selcuk Adabag, MD, MS, Marti Donaire, RN, Debra K. Johnson, BSN, RN, PHN, Alex Kantorowicz, BA - Minneapolis VA Health Care System, Minneapolis, MN; Trisha Suppes, MD, PhD, Ann N. Roseman - VA Palo Alto Health Care System, Palo Alto, CA; Merritt Raitt, MD, Tawni Kenworthy-Heinige, BS, CCRP - VA Portland Health Care System, Portland, OR; Jennifer Romesser, PsyD, Christina Nessler, MS, CCC-SLP, Cecilia Velarde, CHES - VA Salt Lake City Health Care System, Salt Lake City, UT; Sunder Mudaliar, MD, Murray Stein, MD, MPH, FRCPC, Danielle Beck, MPH, CCRC, Erika Blanes, MA, Catherine DeLue - VA

San Diego Healthcare System, San Diego, CA. We would also like to thank Grant D. Huang, MPH, PhD, David Burnaska, MPA, and Amanda Garcia, MPH, CPH, of the VA Cooperative Studies Program Central Office.

Cyenthia Willis, RN, BSN

CSP NODES Program Consultant
VA North Texas Health Care System

Kandi Velarde, MPH, CCRC

Associate Director of Operations, Salt Lake City
VA Salt Lake City Veterans Affairs Health Care System

Karen Bratcher, RN, MSN, CCRC

Associate Director of Operations, Palo Alto
VA Palo Alto Health Care System

Debra Condon, MSN, RN, CCRP

Associate Director of Operations, Minneapolis
Minneapolis VA Health Care System

Marcus R. Johnson, MPH, MBA, MHA

CSP NODES National Program Manager
Durham VA Health Care System
508 Fulton Street (152)
Durham, NC, 27705, United States of America
Telephone: (919) 452-1464
marcus.johnson4@va.gov

Correspondence concerning this article should be addressed to Marcus R. Johnson, MPH, MBA, MHA, CSP NODES National Program Manager, CSP Epidemiology Center-Durham, Durham VA Health Care System, 508 Fulton Street (152), Durham, NC, 27705, United States of America, marcus.johnson4@va.gov.

References

- Bakaeen, F. G., Reda, D. J., Gelijns, A. C., Cornwell, L., Omer, S., Al Jurdi, R., & Huang, G. D. (2014). Department of Veterans Affairs Cooperative Studies Program Network of Dedicated Enrollment Sites: Implications for surgical trials. *JAMA Surgery*, 149(6), 507-513. <https://doi.org/10.1001/jamasurg.20134150>
- Bhatt, A. (2010). Evolution of clinical research: A history before and beyond James Lind. *Perspectives in Clinical Research*, 1(1), 6-10.
- Condon, D. L., Beck, D., Kenworthy-Heinige, T., Bratcher, K., O'Leary, M., Asghar, A., Willis, C., Johnson, M. R., & Huang, G. D. (2017). A cross-cutting approach to enhancing clinical trial site success: The Department of Veterans Affairs' Network of Dedicated Enrollment Sites (NODES) model. *Contemporary Clinical Trials Communications*, 6, 78-84. <https://doi.org/10.1016/j.conctc.2017.03.006>
- Fiordelli, M., Diviani, N., & Schulz, P. J. (2013). Mapping mHealth research: A decade of evolution. *Journal of Medical Internet Research*, 15(5), e95. <https://doi.org/10.2196/jmir.2430>
- Friedman, D. S. (2006). HIPAA and research: How have the first two years gone? *American Journal of Ophthalmology*, 141(3), 543-546. <https://doi.org/10.1016/j.ajo.2005.09.022>
- Guerrini, C. J., Botkin, J. R., & McGuire, A. L. (2019). Clarify the HIPAA right of access to individuals' research data. *Nature Biotechnology*, 37(8), 850-852. <https://doi.org/10.1038/s41587-019-0190-3>
- Hardavella, G., Gagnat, A. A., & Saad, N. (2016). How to prepare for an interview. *Breathe (Sheff)*, 12(3), e86-e90. <https://doi.org/10.1183/20734735.013716>
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*, 42(2), 377-381. <https://doi.org/10.1016/j.jbi.2008.08.010>
- Higgins, M. (2014). Close up on remote interviews. *Nursing Standard*, 29(7), 63. <https://doi.org/10.7748/ns.29.7.63.s47>
- Huang, G. D., Ferguson, R. E., Peduzzi, P. N., & O'Leary, T. J. (2010). Scientific and organizational collaboration in comparative effectiveness research: The VA cooperative studies program model. *The American Journal of Medicine*, 123(12 Suppl 1), e24-31. <https://doi.org/10.1016/j.amjmed.2010.10.005>

Institute of Medicine (US). (2009). Multi-Center Phase III Clinical Trials and NCI Cooperative Groups: Workshop summary: Session 2, barriers to patient recruitment and physician participation. National Academies Press. <https://www.ncbi.nlm.nih.gov/books/NBK215076/>

Institute of Medicine (US). (2010). Forum on Drug Discovery, Development, and Translation. Transforming clinical research in the United States: Challenges and opportunities: Workshop Summary. National Academies Press. <https://www.ncbi.nlm.nih.gov/books/NBK50888/>

Jackson, M. (2020). Good financial practice and Clinical Research Coordinator responsibilities. *Seminars in Oncology Nursing*, 36(2), 150999. <https://doi.org/10.1016/j.soncn.2020.150999>

Johnson, M. R., Bullard, A. J., & Whitley, R. L. (2018). Utilization of lean methodology to refine hiring practices in a clinical research center setting. *Journal of Research Administration*, 49, 63-75.

Johnson, M. R., Kenworthy-Heinige, T., Beck, D. J., Asghar, A., Broussard, E., Bratcher, K., & Planeta, B. (2018). Research site mentoring: A novel approach to improving study recruitment. *Contemporary Clinical Trials Communications*, 9, 172-177. <https://doi.org/10.1016/j.conctc.2018.01.011>

Johnson, M. R., & Bullard, A. J. (2020). Creation of a Structured Performance-Based Assessment Tool in a Clinical Research Center Setting. *Journal of Research Administration*, 51, 73-89.

Joshi, A., Bloom, D. A., Spencer, A., Gaetke-Udager, K., & Cohan, R. H. (2020). Video interviewing: A review and recommendations for implementation in the era of COVID-19 and beyond. *Academic Radiology*, 27, 1316-1322. <https://doi.org/10.1016/j.acra.2020.05.020>

Khan, M. G., & Weng C. (2012). Clinical research informatics: A conceptual perspective. *Journal of the American Medical Informatics Association*, 19(e1), e36-42. <https://doi.org/10.1136/amiajnl-2012-000968>

Lindström-Gommers, L., & Mullin, T. (2019). International Conference on Harmonization: Recent reforms as a driver of global regulatory harmonization and innovation in medical products. *Clinical Pharmacology and Therapeutics*, 105(4), 926-931. <https://doi.org/10.1002/cpt.1289>

Ni, K., Chu, H., Zeng, L., Li, N., & Zhao, Y. (2019). Barriers and facilitators to data quality of electronic health records used for clinical research in China: A qualitative study. *BMJ Open*, 9(7), e029314. <https://doi.org/10.1136/bmjopen-2019-029314>

Oostrom, J. K., Melchers, K. G., Ingold, P. V., & Kleinmann, M. (2016). Why do situational interviews predict performance? Is it saying how you should behave or knowing how you should behave? *Journal of Business and Psychology*, 31, 279-291. <https://doi.org/10.1007/s10869-015-9410-0>

Owens Pickle, E. E., Borgerson, D., Espirito-Santo, A., Wigginton, S., Devine, S., & Stork S. (2017). The Clinical Research Associate Retention Study: A report from the Children's Oncology Group. *Journal of Pediatric Oncology Nursing*, 34(6), 414-421. <https://doi:10.1177/1043454217723861>

Raftery, J., Kerr, C., Hawker, S., & Powell, J. (2009). Paying clinicians to join clinical trials: A review of guidelines and interview study of trialists. *Trials*, 10, 15. <https://doi.org/10.1186/1745-6215-10-15>

Rahman, S., Majumder, M. A., Shaban, S. F., Rahman, N., Ahmed, M., Abdulrahman, K. B., & D'Souza, U. J. (2011). Physician participation in clinical research and trials: Issues and approaches. *Advances in Medical Education and Practice*, 2, 85-93. <https://doi.org/10.2147/AMEP.S14103>

Scott, R. (2019). The pros + cons of telephone interviews. <https://www.aaronwallis.co.uk/employer/advice/pros-and-cons-of-telephone-interviews.aspx> retrieved 3-10-2020

SurveyMonkey Inc. (2020). www.surveymonkey.com

Suttle, R. (2019, March 5). Advantages & disadvantages of telephone interviews in business research. *Chron*. <https://smallbusiness.chron.com/advantages-disadvantages-telephone-interviews-business-research-24285.html>

Unertl, K. M., Fair, A. M., Favours, J. S., Dolor, R. J., Smoot, D., & Wilkins, C. H. (2018). Clinicians' perspectives on and interest in participating in a clinical data research network across the Southeastern United States. *BMC Health Services Research*, 18(1), 568. <https://doi.org/10.1186/s12913-018-3399-9>

United States Office of Personnel Management. (2020a). Human capital management. <https://www.opm.gov/policy-data-oversight/human-capital-management/hiring-reform/hiring-process-analysis-tool/review-applications-schedule-and-conduct-interviews-check-references-make-selection-and-return-certificate/>

United States Office of Personnel Management. (2020b). USAJOBS updates celebrate 20th anniversary milestone. <https://www.opm.gov/news/releases/2016/09/usajobs-updates-celebrate-20th-anniversary-milestone/>

United States Department of Veteran's Affairs. (2018, December 4). Performance based interviewing (PBI). <https://www.va.gov/pbi>

United States Department of Veterans Affairs. (2020). Veterans Health Administration: About

VHA. <https://www.va.gov/health/aboutvha.asp>

Velarde, K., Romesser, J., Johnson, M. R., Clegg, D. O., Efimova, O. V., Oostema, S. J., Scehnet, J. S., DuVall, S. L., & Huang, G. D. (2018). An initiative using informatics to facilitate clinical research planning and recruitment in the VA Health Care System. *Contemporary Clinical Trials Communications*, 11, 107-112. <https://doi.org/10.1016/j.conctc.2018.07.001>

Wheeler, J. S., Ngo, T., Cecil, J., Borja-Hart, N. (2003). Exploring employer job requirements: An analysis of pharmacy job announcements. *Journal of the American Pharmacists Association*, 57(6), 723-728. <https://doi:10.1016/j.japh.2017.08.012>