Content available at: https://www.ipinnovative.com/open-access-journals

Indian Journal of Orthopaedics Surgery

Journal homepage: https://www.ijos.co.in/

Case Report

Orthopaedic practice in Indian secondary care - Exploring the notion of 'integrated care' from the perspectives of healthcare professionals and patients, with strategies for implementation

Akshat Sinha[1]*, Narendra Narain Rai[2]

[1] *University of Birmingham, Birmingham, England*
[2] *Loknayak Jai Prakash Narayan Hospital, Patna, Bihar, India*

ARTICLE INFO

Article history:
Received 23-11-2023
Accepted 30-01-2023
Available online 04-03-2024

Keywords:
Orthopaedics
Integrated care
Multidisciplinary team
Public health
Health technology

ABSTRACT

For the duration of my medical elective, I was placed in a government hospital by the name of Loknayak Jai Prakash Narayan Hospital. It specialises in trauma and orthopaedics, and is one of four government hospitals in Patna- the state capital of Bihar. My supervisor subspecialises in the hip and knee joint. Most patients belong to the lower socioeconomic classes and therefore rely on free delivery of care. During this essay I will reflect upon my firsthand experiences, as well as explore the existing literature, to highlight the importance of integrated care. Orthopaedics is a speciality that brings together many diverse groups of healthcare professionals. The NHS has always placed a strong emphasis on continuity of care by designing standardised frameworks. Coming from an alternative perspective, I seek to observe whether patients and healthcare professionals in Bihar also understand the concept of integrated care. Using examples I will look back to see how various teams work together within the Indian secondary care context.

This is an Open Access (OA) journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

Integrated care and the multidisciplinary approach are epitomised by the speciality of orthopaedics. This was clear to see during my placement at the Royal Orthopaedic Hospital, where the sheer number of people in different specialities was a remarkable sight. Involving various teams in collaboration has been shown to reduce inpatient stays.[1,2] Even in the UK further research is needed to broaden the evidence base, so I was intrigued to see what work has been carried out in India.[3] Nonetheless, integrated care appears to be pivotal for managing patients, especially those with complex orthopaedic problems.[4]

However, in newly industrialising countries such as India these approaches have only started to become more frequent recently. Although like the UK the healthcare industry is comprised of both a public and private sector; primary care does not hold as much responsibility for continuous patient management. Due to this factor health inequalities are more common, as many do not have regular access to a doctor.[5] Often in those that are not highly educated, cases tend to be more complex because of not presenting to the hospital earlier. Patients commonly tend to choose traditional treatment methods such as bone-setting and osteopaths.[6] Consequently, later stages of disease that are not routinely seen in the UK are more prevalent, adding another layer of sophistication to potential management plans.

2. Current State

In addition, many articles have alluded to the fact that Indian institutions should develop protocols to optimise

* *Corresponding author*.
E-mail address: axs1745@student.bham.ac.uk (A. Sinha).

https://doi.org/10.18231/j.ijos.2024.010
2395-1354/© 2024 Author(s), Published by Innovative Publication.

patient pathways in acute trauma and emergency cases.[7,8] But since the pandemic, COVID-19 has further exacerbated overcrowding coupled with the fact most state-funded hospitals are resource-poor.[9] Still pathways are being developed, and are adhered to especially in corporate hospitals e.g. Medanta, Apollo, Fortis. Overall though there is a discrepancy in the rates of admission and surgery, compared to the UK for reasons which are unclear at the moment.[10]

Either way the onset of integrated systems in these hospitals will be a good thing for patients and doctors. I aim to speak informally about this with patients and healthcare staff. The conversations will consist of general discussions about the aspects of patient care moving from admission to discharge. I attended departmental meetings to gauge what kind of systems are already in place. Along with this I enquired about pitfalls and improvements that could be made, including barriers to implementing positive change. In terms of reflective methodology- the Gibbs reflective cycle offers a robust way of transferring the knowledge gained into an analytical format.[11] The insights gained are critical to forming new healthcare systems in the future.

3. Examples in Existing Literature

Subsequently, it goes without saying wherever you are in the world, medicine consists of teamwork and excellent communication. Therefore, it is important to first define what we mean by “integrated care.” Integrated care is the act of forming pathways that facilitate the multidisciplinary approach.[12] As we will see in my cases there are a large variety of professionals caring for patients in India too. But integration also allows coordination of care, enabling a coherent approach. A few studies albeit limited have been carried out in the field of Indian orthopaedics regarding the presence of integrated care, or lack thereof.

One area of orthopaedics requiring the highest standards of care is that of hip fractures. Many elements can confer advantages for reducing mortality when dealing with these patients. In a pathology where the one-year mortality is already up to 30%, having care pathways is of utmost importance. A lot of the hospitals follow international guidelines including NICE. All of them advise early surgery within 24-48 hours to reduce delay.[13] Following this evidence is fine given the recommendations are adhered to. But in developing countries it fails to account for the cultural differences and prehospital delays in transfer.

Only around a third of patients received surgery without delay. Statistically these numbers are almost the same in large tertiary care centres as well. The most common reason for this was pre-existing comorbidities at the time of admission.[14] Since most government hospitals are overburdened regional standards of care should be established, considering the added problems faced. Even with delay in getting to a hospital, the most delay occurred after being admitted. Protocols can help provide a concrete structure when it comes to knowing what is needed for patients with multiple medical problems.[15]

Specifically in Bihar, a prospective study was published as an article comparing arthroplasty before and after the pandemic. It stressed the need to follow infection control guidance rigorously. Also, how planning and communication play an essential part in the patient journey.[16] This is both to ensure patient and surgeon safety by sticking to protocols, while continually re-evaluating them. Fostering this culture helps to improve systems and learn how to prevent previous shortcomings

Furthermore, research conducted by the Department of Public Health for India said that, in Bihar the lack of funding and high population density all affects the ability to deliver trauma care.[17] There is a distinct lack of organisation between the different faculties. Examples are the government, police, private and public healthcare sectors. Consequently, the government organised a plan to implement training to link the services together. This was done at the AIIMS Hospital in Patna where participants were taught basic skills for management of emergency incidents. After all this was done it was found that those attending emergencies were not always those who had done the relevant training. Referencing this it is obvious that the work needs to continue until all the departments are able to liaise with each other smoothly.

Another key area of diagnosis is paediatrics. A plethora of orthopaedic pathologies can manifest in the early stages of child development. Many of these problems if not identified and treated, will have long-lasting implications downstream.[18] Otherwise, the burden is likely to increase on a system caring for tens of millions of people. Here several specialists have a role, and integrated care means the chances of missing disease is less. One of the most common orthopaedic screening tests in infants is developmental dysplasia of hip (DDH). Since there is a lot of variability in the provision of care pathways many centres have diagnosed late cases of DDH.[19] Likewise, malignancies such as sarcomas mainly present in the paediatric population. Several specialists are needed for correct management. Similarly, this is a problem in the UK as well because of the rarity and limited knowledge on this particular subject.[20] Having integrated care frameworks means that there are always multiple people involved in decision making.[21] Hopefully this aids treatment and prevents complications of erroneous surgery- “whoops procedure.”

All in all the evidence base is strengthening, which is a good sign. Along with the research there are many case reports reinforcing the criticalness of the MDT approach and integration of care. Having this promotes a culture of clinical excellence, increasing positive patient outcomes.

4. Interactions with Healthcare Professionals

Moving on to my interactions with members of the healthcare teams, I will first detail some of the activities I engaged in with them. I attended theatres, OPD and emergencies while completing the placement. As well as this I observed joint meetings, journal club; and took part in ward rounds and bedside teaching. On first glance the joint meetings seemed to fit the idea of "integrated care" I was investigating. However, at LNJP it had a very different structure to multidisciplinary meetings back home. Here the meetings consisted of two departments namely: orthopaedics and radiology. Cases were discussed with interpretation of imaging and scans carried out on patients. It was somewhat similar to the UK, but different at the same time as there were no other staff apart from doctors.

In contrast in the UK a lot of professionals were present: surgeons, juniors, physiotherapists, radiologists nurses and CNS to name a few. What is more is that there are also specialised MDTs depending on the joint or cancer MDTs for example. In these there will be even more specialists like histopathologists, microbiologists and sarcoma surgeons. From this I started asking members of the team what they understood by integrated care. Many of them had not heard of the concept of MDT meetings before. Those that had done some form of training in the UK such as MRCS/FRCS. This was understandable considering this concept was pioneered in the UK. For the people unsure they managed to discuss things like "tumour board" meetings. More common in the US but basically analogous to MDTs, I saw how elements of teamwork were evident in the hospital. All agreed that the utilisation of more specialists would be very helpful for improving management and follow-up.

With regards to advantages of the approach, the medical staff felt it was better to discuss complex patients so everyone is on the same page. Moreover, talking through things with peers means that the decision is not all on one person reducing stress. As well as this it means no individual can do as they please, and guidelines are more likely to be followed in line with protocol. Whilst in theatres, I saw the abundance of staff present for the operation. Everyone understood their roles and responsibilities. Here when asking the staff, they spoke of the clear format which has been laid out to follow. The number of staff in theatre and people supervising were all requirements set. At the end of the operation the team undertaking the transfer to the ward were also meant to come and finalise a plan with the operating surgeon. Having this in place was a safety net to ensure that any changes because of the nature of the operation could be acknowledged.[22]

By analysing the different perspectives, I could see the nuances in understanding of integrated care. This was due to the different training individuals had, and variability in the daily work in which they were involved. Most had a good understanding of integrated care even if not mentioning the phrase itself. Standardised dosages were prescribed with correspondence to pharmacies post-consultation. Collaboration and communication were evident with referrals made if patients did not necessarily have an orthopaedic problem. Though this was a specialised orthopaedic hospital, and workers said that identical care pathways might not be present in other surrounding hospitals.

5. Engagement with Patients

Next, I had a lot of time to speak with patients too. I spoke with them about whether the integrated approach had helped them to get the best care possible. If not, how did this affect them both medically and psychologically? A lot of the patients understood the different members of the team but seemed to be very doctor-focused on their knowledge. Some of them did not realise how the delivery of care was structured. They had undergone various tests and investigations which were unnecessary. A number had tried traditional methods and only presented once their condition had worsened considerably. It came as a shock to me as most had travelled long distances, when simple measures could have treated them in smaller local hospitals.

Patients told me about how initial treatments had failed and are now requiring extra treatment. Occasionally these cases needed fairly extensive surgery to correct the malformations. A byproduct of the local district hospitals being poorly equipped, was more people waiting in line for scans such as X-rays and ultrasound. Many patients lamented the fact that although their care in hospital was of a high standard, there was no clear process for admission in an emergency. Especially with the high population density, delays occurred in getting treated. In OPD lots of people were waiting in line hoping to get seen, and if not they would come back the next day. All this time various people who were breadwinners for their family were losing income.

What is more is that most patients had trouble in receiving adequate care prior to transfer to hospital. Patients said they lacked awareness of the seriousness of their situations, amidst a stoic personality to carry on working. Looking back at distance travelled, it is also tough to get ambulances into small villages rapidly meaning there is hinderance to everyone involved.

I learned from this that even if several professionals take part in care in a coordinated and organised way it is not enough. We should not just focus on integrated care but foolproof care pathways too. This stems from higher organisations. It involves everyone from booking appointments so people do not waste time attending, to emergency vehicles. Many patients do not have or have misplaced formal care records, so extra time is taken for work-up and evaluation of medical history. Including everyone ranging from hospital porters, paramedics, receptionists is essential for pushing this ethos of integrated

care forwards. Patient education is key ahead of this.

6. Challenges and Implementation Strategies

Nevertheless, in a developing country there are a number of challenges allowing these problems to persist. Speaking to doctors they spoke about the Ayushman scheme complicating factors. The Ayushman Bharat scheme is a method to expand healthcare for all. It provides health cover of up to 5 lakhs (£5K) per family per year.[23] The project is for those most deprived in society. Certain procedures are allocated specific costs. In the case of hip replacements sometimes the price does not even cover the prosthesis, making it difficult for even doctors to earn a decent salary. This is reflected by the dwindling numbers choosing to pursue a surgical career.

On top of this developing clear framework takes time. In the UK luckily due to primary care each GP surgery has a catchment area and population. Therefore, patients are referred to certain hospitals, spreading the workload. Whereas in just one state Bihar the area is smaller, but the population is nearly double than the UK. If the patients were evenly distributed across the public hospitals according to location, there are still issues because only the larger institutions have access to things like MRI scanners. The local district hospitals may have even more primitive devices.

Meanwhile, there is a lot to work with. In the sections above it is obvious to me that people have an understanding and there are early systems in place. They need streamlining so that these pathways and frameworks become second nature. For this multiple departments must collaborate transcending the field of healthcare. A thorough assessment to identify gaps and weaknesses should take place. Nurturing this improvement can only be good, by building on current strengths as well. Also with the existing protocols they should be checked and practiced across all hospitals. Specific procedures should have their own guidelines detailing the sequence of care.

In India the technology industry is booming. Health informatics is an area that should be invested in. Electronic health records make seamless information transfer possible. Utilising telemedicine for stable long-term problems nullifies the need for travel or follow-up appointments.[24] In regions with limited access to the internet, dedicated days of the week can be blocked for visiting doctors to sit in at clinics or district hospitals. The era of modern medicine beckons e-learning for patient education. Regular audits and QI projects can review policies before scaling up to all facilities.

Successful implementation requires commitment, determination and a willingness to embrace change. Slight modifications are acceptable to cater for local needs and resources. National and state governments have aimed to ensure all can share records with healthcare providers. Apps have been developed to aid those on the Ayushman scheme with receiving reports and prescriptions.

7. Conclusion

To conclude I very much enjoyed my placement at LNJP Orthopaedic Hospital. From this I have learnt the significance of integrated care in all healthcare contexts. More to the point I saw the display of teamwork on show, all working towards a common goal- patient safety and positive outcomes. With the myriad of patients concrete frameworks will only improve patient satisfaction. Even with all the barriers, members of the team understood the value of creating and maintaining care pathways for the future. Changes are being implemented for the betterment of society, and I hope this area continues to grow for all specialities in India. Patient education is key to prevent complications allowing for comprehensive assessment at an early stage. Ongoing learning revisiting of current guidelines is needed to bridge the gap between healthcare professionals and patients' perspectives.

8. Source of Funding

None.

9. Conflict of Interest

None.

References

1. Coffey RJ, Richards J, Remmert CS, Leroy SS, Schoville RR, Baldwin PJ. An introduction to critical paths. *Qual Manag Health Care*. 1992;1(1):45–54.
2. Campbell H, Hotchkiss R, Bradshaw N, Porteous M. Integrated care pathways. *BMJ*. 1998;316(7125):133–7.
3. Beazley S, Brady AM. Integrated care pathways in orthopaedics: A literature review. *J Orthop Nurs*. 2006;10(3):171–8.
4. Riemen AHK, Hutchison JD. The multidisciplinary management of hip fractures in older patients. *Orthop Trauma*. 2016;30(2):117–22.
5. Jain AK. Current state of orthopedic education in India. *Indian J Orthop*. 2016;50(4):341–4.
6. Tewari A, Pati S, Nallala S, Webster P, Rath S, Yadav L, et al. Care Seeking Behaviour of Older Adults with Hip Fracture in India: A Qualitative Study. *J Patient Care*. 2017;3(1). doi:10.4172/2573-4598.1000128.
7. George J, Sharma V, Farooque K, Mittal S, Trikha V, Malhotra R. Factors associated with delayed surgery in elderly hip fractures in India. *Arch Osteoporos*. 2021;16(1):7.
8. Rath S, Yadav L, Tewari A, Chantler T, Woodward M, Kotwal P, et al. Management of older adults with hip fractures in India: a mixed methods study of current practice, barriers and facilitators, with recommendations to improve care pathways. *Arch Osteoporos*. 2017;12(1):55.
9. Upadhyaya GK, Iyengar K, Jain VK, Vaishya R. Challenges and strategies in management of osteoporosis and fragility fracture care during COVID-19 pandemic. *J Orthop*. 2020;21:287–90.
10. Falls and Fragility Fracture Audit Programme (FFFAP); 2023. Available from: https://www.nhfd.co.uk/20/hipfracturer.nsf/vwcontent/2014reportPDFs/\protect\T1\textdollarfile/NHFD2014ExtendedReport.pdf?OpenElement.

11. Gibbs G. Learning by doing: A guide to teaching and learning methods. FEU; 1988.
12. Kitchiner D, Davidson C, Bundred P. Integrated care pathways: effective tools for continuous evaluation of clinical practice. *J Eval Clin Pract*. 1996;2(1):65–9.
13. Dash SK, Panigrahi R, Palo N, Priyadarshi A, Biswal M. Fragility Hip Fractures in Elderly Patients in Bhubaneswar, India (2012-2014): A Prospective Multicenter Study of 1031 Elderly Patients. *Geriatr Orthop Surg Rehabil*. 2012;6(1):11–5.
14. Sarang B, Bhandoria G, Patil P, Gadgil A, Bains L, Khajanchi M, et al. Assessing the Rates and Reasons of Elective Surgical Cancellations on the Day of Surgery: A Multicentre Study from Urban Indian Hospitals. *World J Surg*. 2022;46(2):382–90.
15. Yadav L, Tewari A, Jain A, Essue B, Peiris D, Woodward M, et al. Protocol-based management of older adults with hip fractures in Delhi, India: a feasibility study. *Pilot Feasibility Stud*. 2016;2(15). doi:10.1186/s40814-016-0056-0.
16. Bhadani JS, Ahmed W, Kashyap N, Kumar I, Kumar S, Kumar R, et al. Changing Trend in COVID 19 Pandemic, Orthopaedic Care, and Arthroplasty - A Prospective Study Conducted in Indira Gandhi Institute of Medical Sciences, an Apex Tertiary Centre of Bihar. *J Evid Based Med Healthc*. 2021;8(28):2544–50.
17. Verma V, Singh C, Singh G, Kumar S, Kumar A, Dhungana HN. Preparing to manage the injury burden of Bihar. *Indian J Community Health*. 2009;27:247–51.
18. Li J, Aroojis A, Mulpuri K, Shea KG, Schaeffer EK. Development of a DDH Care Pathway for India: A Study Methodology to Guide Similar Efforts in Other Countries and for Other Conditions. *Indian J Orthop*. 2021;55(6):1549–58.
19. Chand S, Aroojis A, Pandey RA, Johari AN. The Incidence, Diagnosis, and Treatment practices of Developmental Dysplasia of Hip (DDH) in India: A Scoping Systematic Review. *Indian J Orthop*. 2021;55(6):1428–39.
20. Sinha R, Jamal I, Kumar A, Kumar A. Ewing sarcoma of proximal tibial epiphysis: An unusual presentation with review of literature. *Indian J Pathol Oncol*. 2020;5(2):308–13.
21. Kundal V. A rare soft tissue sarcoma of leg in a child: A multidisciplinary approach. *J Int Med Sci Acad*. 2020;33(4):251–4.
22. Kumar P, Jindal K, Aggarwal S, Kumar V, Rajnish RK. 30-Day Mortality Rate in Hip Fractures Among the Elderly with Coexistent COVID-19 Infection: A Systematic Review. *Indian J Orthop*. 2021;55(3):571–81.
23. Kamath R, Brand H. A Critical Analysis of the World's Largest Publicly Funded Health Insurance Program: India's Ayushman Bharat. *Int J Prev Med*. 2023;14:20.
24. Chellaiyan VG, Nirupama AY, Taneja N. Telemedicine in India: Where do we stand? *J Fam Med Prim Care*. 2019;8(6):1872–6.

Author biography

Akshat Sinha, Medical Student https://orcid.org/0000-0003-1179-1787

Narendra Narain Rai, Consultant Orthopaedic Surgeon https://orcid.org/0000-0003-0979-2377

Cite this article: Sinha A, Rai NN. Orthopaedic practice in Indian secondary care - Exploring the notion of 'integrated care' from the perspectives of healthcare professionals and patients, with strategies for implementation. *Indian J Orthop Surg* 2024;10(1):55-59.