



Fellowship report

Report by:	Haroon Rehman
Date of the fellowship:	20/02/23 - 03/03/23
Visited institutions:	Golden Jubilee, Glasgow University College London Hospitals Princess Grace Hospital, London

I am delighted to have had the incredible opportunity to embark on the prestigious EFORT traveling fellowship. Throughout my career, I have developed a profound interest in the field of robotic hip and knee arthroplasty, and I was eager to expand my knowledge by visiting renowned high-volume centres.

During a span of two weeks, from February 20th, 2023, to March 3rd, 2023, I had the privilege of visiting three esteemed centres. Regrettably, one further centre had to cancel my visit due to limited bed availability for cases. Nonetheless, I visited prominent MAKO users in both Scotland and England, providing ample opportunities to engage in insightful discussions about this cutting-edge technology.

I completed my medical studies at the University of Aberdeen, followed by rigorous training in a specialised orthopaedic training program in North Scotland. Additionally, I undertook a fellowship focused on revision arthroplasty at Wrightington Hospital.

My interest in robotic-assisted arthroplasty began during my final year of training when the MAKO system was introduced at a local private hospital. Shortly after, I witnessed its implementation at Woodend Elective Orthopaedics Hospital in Aberdeen, NHS Grampian. Since then, I have become a strong advocate for orthopaedic innovation, firmly believing that it is our duty as surgeons to explore any tools or technologies that can enhance clinical practices.

Golden Jubilee

The first limb of the fellowship was supervised by Mr Nick Ohly, Consultant Orthopaedic Surgeon at the Golden Jubilee. I was immersed in a week-long intensive program focused on the three applications of the MAKO system: Total Knee Replacement, Unicompartmental Knee Replacement, and Total Hip Replacement.

The Golden Jubilee was the pioneering unit in Scotland to acquire the MAKO system, building on their extensive experience with navigation technology. Currently, they possess two MAKO robots, both of which are used daily. Throughout the entire week, I had the opportunity to witness numerous surgical procedures, with an average of three cases performed per list each day. It was fascinating to observe multiple surgeons and hear their individual perspectives on the utilisation of robotics in their practice.



Regarding knee alignment philosophies, the prevailing approaches at the Golden Jubilee encompassed kinematic and functional principles. While I was able to scrub in for some of these cases, I quickly realised that the presence of additional personnel around the surgical table can pose challenges for the MAKO system. It was intriguing to note that a relatively higher number of unicompartmental knee replacements were being performed at this centre. In certain cases, the surgical team would plan for both unicompartmental and total knee replacements, making the final decision based on intraoperative findings. I have often heard that the MAKO system is particularly effective for unicompartmental knee replacements, and witnessing the procedure first-hand easily substantiates this claim. The use of a small portal allows both the saw and burr to operate with minimal access requirements. The surgeons at the Golden Jubilee also shared their experiences with complex cases, demonstrating innovative uses of the robot.

Furthermore, I had the opportunity to witness several total hip replacements during my time at the Golden Jubilee. The MAKO system was predominantly utilised for cup implantation, with most surgeons opting to use a single reamer. I did not observe any issues with initial fixation throughout the procedures.

In the middle of the week, I was invited for a lunch meeting by the Stryker team, which proved to be an invaluable opportunity to engage with them and seek further clarification. The Stryker representatives were exceptionally accommodating, and their presence added to the overall enjoyment of my experience. I quickly realised that there is much more to learn about the MAKO system beyond its technical aspects. I was particularly interested in understanding how such a system could be effectively integrated into the NHS given the current financial climate and what impact it has on productivity given the long NHS waiting lists. Additionally, navigating the intricate landscape of information and technology governance within the NHS was a significant consideration. As the MAKO system requires the performance of CT scans and subsequent planning processes, I found the guidance provided by both the Stryker team and the experienced surgeons at the Golden Jubilee to be extremely useful.

Overall, my interactions with the Stryker team and the insightful discussions I had throughout the fellowship have deepened my understanding of the MAKO system and its potential implications in the NHS.

UCLH and Princess Grace

The visit was supervised by Professor Haddad and his team. Professor Haddad is widely recognised as one of the leading users of the MAKO system in the United Kingdom, and his ongoing research in this field highlights his dedication. Given his busy schedule, he has assembled a talented team of surgeons working alongside him.

During my visit, I had the opportunity to observe two surgical lists at UCL Hospital and one at Princess Grace, where I continued to witness robotic-assisted surgeries for both hip and knee procedures. There were notable similarities in approach and utilisation of the robot for knee surgeries when compared to the Golden Jubilee.

In addition to the operating theatre experience, Professor Haddad arranged for me to spend a morning in the clinic, observing the consent and planning process for robotic surgeries. I was able to observe the differences in this process compared to conventional manual arthroplasty.



One of the most remarkable aspects of this visit was the opportunity to witness the enhanced workflow for MAKO hip replacement, which Professor Haddad and his entire team employ. The enhanced workflow enables more precise pre-operative planning of component positioning and identification of impingement regions. It also facilitates the accurate restoration of cup and stem version, offset, and leg length. The technology being used to its full potential is truly impressive.

The UCL team exhibited exceptional hospitality. They went above and beyond to ensure I felt welcome and engaged with me on a personal, and professional level throughout the week. As a delightful gesture, Professor Haddad's team treated me to a memorable dinner at an exquisite

London restaurant before my departure, adding the perfect finishing touch to an already remarkable experience.

EFORT Robotics Fellowship

Exposure to robotic-assisted procedures has allowed me to expand my technical knowledge of the system. I have gained a deeper understanding of their potential to optimise patient outcomes in joint replacement surgeries. I gained a comprehensive understanding of the clinical applications and benefits of robotic surgery. From preoperative planning to intraoperative guidance, I have learned to leverage the capabilities of robotic technology to enhance surgical efficiency, implant positioning, and overall patient satisfaction.

Moving forward I am eager to apply these learnings to provide the best possible care to my patients and contribute to the advancement of robotic surgery in hip and knee arthroplasty. With time, I anticipate the establishment of a robotics system in our centre. I strongly believe the integration of robotics across all subspecialties in orthopaedics is the direction of travel.

I wholeheartedly endorse the EFORT Robotics fellowship. Despite the shortened duration of my fellowship, I gained a wealth of knowledge and experiences. The surgeons using robotic technology are continuously pushing the boundaries of innovation, and this fellowship provides a unique opportunity to learn from those at the forefront of the field. I highly recommend this fellowship to anyone seeking valuable exposure to the latest advancements in robotic-assisted orthopaedics.

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