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Robot Revolution: Impacting Adoption of the Technology

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Robot Revolution: Impacting Adoption of the Technology

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Contents

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Executive Summary

From manufacturing, to commerce, to healthcare, robots have taken root in many industries that impact our daily lives. Their application has increased rapidly in the surgical setting since first becoming available in 2000, and with use increasing as much as 10% each year (Sheetz et al., 2020), their presence is almost unavoidable for clinicians. The success of new technology is dependent on many factors, adequate training and clinical support among the most important. Because robotics changes and advances so rapidly, it is important to continually evaluate training methods for efficacy and scale. When a need for change is recognized, it's important to consider all the options, implement the most appropriate, and have an assessment and feedback loop built in to address outcomes. The focus of this change project was the successful implementation and evaluation of a new training initiative in support of increasing Medtronic's medical device representatives' (reps) knowledge and comfort with a robotic guidance platform for spine surgery. This initiative was a new educational course offered electively to Medtronic reps with a focus on advanced clinical topics to help them better understand and support the technology. Reps who better understand the technology are more adept at selling it, therefore increasing Medtronic's market share in the spine market, a more than $90 billion industry (Greene, 2018). The author seeks to secure approval and funding form Executive Leadership to continue offering this valuable course to our sales partners in the field.

Robot Revolution: Impacting Adoption of the Technology

A clinical topic that should be a priority for clinicians is how to advance and improve the standard of care, particularly in the surgical setting. How do clinicians determine that new surgical techniques, devices, and technology are positively impacting patients, improving their outcomes, and therefore advancing the standard of care?

There is a significant amount of research being done on how the application of robotics in varying surgical applications is improving the standard of care. There are currently a wide variety of surgical robots commercially available that serve a multitude of specialties: DaVinci for soft tissue, Mako for joint replacements, and Mazor and Globus ExcelsiusGPS for spine procedures. As with other technological and clinical advancements in the surgical setting, the aim for robotic platforms is to improve patient outcomes while simultaneously making them more reproducible and predictable. To examine and evaluate the value of robotics applied to spine surgery, the following PICOT question was formulated: in patients receiving spinal fusion surgery (P), how does the use of robotic guidance (I) compared to traditional techniques (C) affect implant accuracy (O)? The applicable studies examined relevant variables in addition to implant accuracy (surgical time, fluoroscopy exposure, blood loss, length of stay, and rate of revisions), so those were also reviewed. The research into the value of robotics applied to spine surgery was used as the rationale to implement a change project that would result in improved understanding and adoption of the technology by the individuals tasked with selling and supporting it in the clinical setting (medical device representatives).

Rationale for the Project

When considering the potential impact of robotics on the standard of care for spine surgery, one can consider the impact laparoscopic technique had on different types of procedures. For many routine surgical procedures, such as appendectomies, cholecystectomies, colectomies, and many gynecologic and urologic procedures, the minimally invasive laparoscopic approach is presently widely considered to be the standard of care. But at some point, in the not-too-distant past, those were all open procedures requiring large incisions, lengthy hospital stays, and often complicated recoveries. The development of laparoscopic technique improved care and outcomes for these patients by reducing blood loss, infection risk, and operative and recovery times (Cleveland Clinic, 2022). As laparoscopic technique developed it became more widely accepted and practiced, and it was requested directly by patients due to the proven benefits, eventually becoming the accepted standard of care. In reference specifically to laparoscopic appendectomies, this happened rapidly, with the first procedure being executed in 1982, to being “commonplace by the early 1990s” (Kelley, 2008).

Elective spine surgery has some of the most variable patient outcomes in elective surgeries. One study estimated the failure rate of spine surgery to be between 10-46% (Thomson, 2013). Failed spine surgery requiring revision procedures is a costly scenario for both patients and healthcare facilities. A patient’s outcomes can even be affected by whether their spine surgeon is an orthopedic spine surgeon versus a neurosurgeon (Seicean et al., 2014). The implementation of robotic guidance systems brings the potential to neutralize many of the variables that contribute to inconsistent outcomes and bring improved reproducibility, predictability, and consistency to spine surgery. If the introduction of robotic platforms can achieve these goals, they will undoubtedly become the standard of care in spine surgery.

However, robotics in the surgical setting will not become the standard of care without successful adoption by the stakeholders. For new technology introduced in the surgical setting, its successful adoption is greatly dependent upon proper training and utilization, not only for the surgeon, but for the clinical support team as well. Focusing specifically on the Mazor X platform, the learning curve for both surgeons and clinical support can be steep, and the risk of failure to adopt and integrate the technology is high if proper training protocols aren't enforced and followed. At present, the clinical support team consists of medical device representatives or 'reps.' While the surgeon training and adoption success rate is high, the training and adoption by reps has not been as successful. This phenomenon can, in turn, have a negative impact on long-term surgeon utilization. If the clinical support team can't meet surgeon demands or expectations, the likelihood that the surgeon will grow frustrated and abandon the technology is high. The focus of this change project was to evaluate a change in the training protocols and methods of training reps to support the technology successfully.

Literature Synthesis

The available literature examining the application of robotic guidance systems in spine surgery confirms value. Using the PICOT question (in patients receiving spinal fusion surgery (P), how does the use of robotic guidance (I) compared to traditional techniques (C) affect implant accuracy (O)?) to generate keywords and terms, a search was completed of available literature in relevant databases, as well as in a general internet search, and is represented in Appendix A: Synthesis Table. After the keeper studies were identified, critical appraisal of the information was completed. Rapid critical appraisal checklists, general appraisal overviews, and synthesis tables were created with the levels of evidence and intervention descriptions for each of the studies. All the applicable keeper studies identified were quantitative in nature. Of the keeper studies that addressed implant accuracy, all favored robotic guidance for improved accuracy over traditional freehand technique. Additionally, several of the studies identified other clinically relevant variables: fluoroscopy time, blood loss, surgical time, and revision surgeries. Three studies included a comparison of fluoroscopy exposure, length of stay, and blood loss between the robotic-assisted and freehand groups, and all favored robotic guidance. One of the major benefits of robotic-assisted surgery is the ease of executing a minimally invasive approach. A decrease in intraoperative blood loss and post-operative length of stay are anticipated and desirable outcomes of minimally invasive surgery. Schröder & Staartjes (2017) examined the rate of revision surgery following placement of implants using robotic guidance, and found a decrease compared to the freehand group. This would be of high relevance to both clinicians and patients due to the high cost associated with revision surgeries, and the negative impact on the patient's recovery and quality of life. When reviewing the body of evidence found in the research process, the clinician could begin to answer questions about the positive impact of robotics on clinical outcomes, especially when considering that the studies have similar findings regarding improved accuracy, decreased blood loss, fluoroscopy time, length of stay, and surgery revision rates. These positive outcomes were used as evidence to support a change project that will help increase adoption of the technology. All of the studies mention the relative infancy of robotics and the need for additional research.

Robotics is a rapidly evolving technology; therefore, it would be of extreme importance to search for the most recent research that is relevant to the clinical question or scenario.

Project Stakeholders

The stakeholders affected by this change are the reps and their direct managers, the internal training team, training and education leaders, senior leaders, and the surgeons and their teams and patients. The gatekeepers who have already recognized the need for change and provided approval for this initiative are the Medtronic executive level leaders down through the regional and district managers, as well as the training and education leaders. The two biggest barriers to success are financial (FY23 and FY24 budget), and lack of 'buy-in' for the technology by the reps. For the financial barrier, a quarterly budget has been determined for the entirety of FY24 supporting 2 courses/quarter ($40k/quarter or $20k/course). This was communicated to the team responsible for the planning and execution of the courses. For the buy-in barrier, the course content was created by taking reps' specific feedback and requests for advanced Mazor training into account. The topics were chosen based off the most requested continued education. By taking these requests into consideration, it was expected that demand and attendance would be high. Impact to rep buy-in was evaluated via the results of a post-course survey (see 'Data Collection Methods and Evaluation').

Evidence-Based Practice Change Model

The preferred EBP Change Model for this change implementation project was the Iowa Model of Evidence-Based Practice. This model was preferred because it is used to aid in "decisions about clinical and administrative practices that affect healthcare outcomes," (Dang et al., 2019, p.389). The aim of this project was to improve the outcome of rep training and thereby have a positive impact on the adoption and utilization of the technology by spine surgeons. Because the model is based on the Rogers's Diffusion of Innovations theory (2003), which applies the cycle of adoption to a bell curve and is consistently referenced in the adoption of robotics, it was the most appropriate model to apply. The steps of the model are transferrable to the approach taken to develop and implement this project, starting with identifying the issue and stating the purpose. The priority of the topic was identified to be high by senior leadership, and a team was formed to discuss the issue and develop a strategy. Once a strategy was determined, the framework and metrics of the advanced courses were created. Following the steps of the Iowa Model, the program was implemented first as a pilot program, evaluated, and then integrated on a larger scale with continued evaluation.

Implementation Plan

This change project focused on the implementation of advanced training courses for a robotic spine surgery platform intended for internal Medtronic reps. The courses' impact on rep knowledge and comfort level with the technology were evaluated. The current process to train reps requires them to attend Mazor 101, an in-person hands-on training course that lasts three days. However, the majority of reps self-report that they do not feel confident in their ability to independently support robotic cases upon completion of the course, and only a small number of the reps who have completed formal training on the technology are successfully supporting robotic surgeries independently. Additionally, many reps self-report an interest or desire for continued and advanced education regarding the clinical support of the Mazor X platform. To meet this demand, a series of advanced courses were developed called Advanced

Mazor 201. The courses were open for any internal employee to register and attend, however, basic Mazor 101 training was strongly recommended as a prerequisite (though not required). The series encompassed the following advanced Mazor topics: Scan & Plan, single position surgery (SPS), trouble shooting, adoption and utilization, advanced techniques/deformity, and competitive technology (see Appendix E for a sample course agenda). Each topic was presented in a one-day course offered twice per quarter (piloted one course in Q3FY24 and extended into Q4FY23 and Q1FY24, 2 courses each) for an eventual total of eight courses per year. The maximum number of attendees per course was fifteen. Impact was evaluated using a post-course survey to assess reps' comfort level with the material pre- and post-course.

Timetable/Flowchart

The conceptualization and planning for this change took place over two quarters (Q2FY23 and Q3FY23), with implementation taking place in the form of a pilot course held at the end of Q3FY23. To plan the initiation of the Mazor 201 courses, the following process, as outlined by Melnyk and Fineout-Overholt (2019), was implemented:

- Step 1: Identification of problem – Reps responsible for the clinical support of the Mazor X platform self-report discomfort with the technology following basic Mazor 101 training, as well as a desire for continued and advanced Mazor training and education.
- Step 2: Identify stakeholders – Stakeholders are identified as field reps, the Mazor training and education team, organization leadership and senior education managers, surgeons utilizing Mazor and their surgical teams and patients.

- Step 3: Identify a practice change – The change implemented was the creation of advanced Mazor 201 courses focusing on Scan & Plan, single position surgery, trouble shooting, sales utilization, advanced techniques/deformity, and competitive technology. Each topic was presented in a one-day course offered twice per quarter, for an eventual total of eight courses per year.
- Step 4: Identify and address barriers – Barriers to implementation are identified as financial and rep buy-in. Financially, budget has been identified and approved for FY24 to execute the courses as mentioned above. Addressing rep buy-in, these courses were designed by taking reps' specific feedback and requests for advanced Mazor training into account. The topics were chosen based off the most requested continued education. By taking these requests into consideration, it was expected that demand and attendance would be high.
- Step 5: Use effective strategies to communicate the change – These new courses were promoted internally through email blasts, marketing zoom calls, and via an informational text all targeting the intended audience, field reps tasked with clinically supporting Mazor.
- Step 6: Implement the change process – see Appendix B: Mazor 201 Course Execution for detailed instructions to execute a Mazor 201 course.
- Step 7: Evaluate the impact – The efficacy of these courses and their intended outcome were assessed via a post-course survey.
- Step 8: Identify activities that will help sustain the change – Report course details (cost, attendance, attendee feedback, survey results) to leadership to maintain

their support and ensure future budget approval. Continue to promote the course internally to drive awareness and attendance.

Once the practice change was conceptualized, a detailed timeline framework for planning and executing an Advanced Mazor 201 course was created (see Appendix C). This timeline was used by the training team members as a clear step-by-step process guide for executing the courses.

Data Collection Methods and Evaluation

Evaluation is a vital component of improvement projects, as it gives us visibility to quality and effectiveness of our practice (Melnyk & Fineout-Overholt, 2019). When considering the four types of evaluation (process, impact, outcome, summation), this project was evaluated for impact. Impact evaluation is described as measuring the "immediate effect of a program" and how well its objectives have been met (WACHPR, 2010). Evaluation of this initiative was measured via anonymous post-course participant survey. Success was determined by an increase in the participants' comfort level with the platform and/or the specific topic presented. The survey was created and executed via Microsoft Forms and distributed via email link to course participants. The survey addressed:

- Role within Medtronic (clinical consultant, spine rep, distributor, capital manager, program development consultant, other)
- Participant's previous training (if they completed Mazor 101 or not – yes or no)
- Identify which Mazor 201 course they attended (Scan and Plan, SPS, Troubleshooting, Advanced Techniques, Sales Utilization, Competitive Technology, Other)

- Previous comfort level with the platform (visual analog scale or VAS)
- Post-course comfort level with the platform (VAS)
- Previous comfort level with the specific 201 topic presented (VAS)
- Post-course comfort level with the specific 201 topic presented (VAS)
- Would they attend another 201 course (yes or no)?
- Would they recommend this course to a colleague (yes or no)?

This survey allowed us to differentiate between participants who have completed basic Mazor 101 training versus those who have not, with the expectation being that those who have would have a higher pre- and post-course comfort level with both the platform and the topic presented. We can then use this data to promote and drive basic Mazor 101 attendance. The data collected in this survey will be aggregated both by course/topic and overall, and presented to stakeholders (training team, Education leadership, Sales leadership) in a monthly report out call. The evaluation was executed through the following steps:

- Step one: obtain participant registration list from Microsoft Teams and confirm attendees with lead trainer for the course.
- Step two: draft an email to participants explaining the survey purpose, estimated time to complete (<5 minutes), and link.
- Step three: review survey responses for each course in Teams via generated Microsoft Excel dashboard.
- Step four: interpret and present data to stakeholders on monthly call.

Cost/Benefit Discussion

As with most employee training initiatives, there are costs associated with the implementation of the Mazor 201 courses. The associated financial costs are identified as lab expenditures, content creation, and employee travel (training team and attendees). The associated non-financial cost is the necessity for the attendees to be absent from their normal job functions in the field. A sample cost summary is provided in Appendix D and details the total cost of one Mazor 201 course to the organization based on fifteen attendees (maximum). The approved budget for implementing Mazor 201 courses was $40k/quarter with a course target of 2/quarter, resulting in a maximum course budget of $20k/course (not inclusive of training team or attendee travel, which was the responsibility of their cost center and was budgeted separately). The goal for those tasked with planning and executing the courses was to be within +/- 10% of target budget. Several considerations were made to make these courses as cost-effective as possible:

- The Mazor 201 courses were held at Medtronic-owned labs. The average cost to rent these facilities is $10k, compared to $20k+ for third-party facilities.
- When possible, the Mazor 201 courses were added to the end of existing Mazor 101 courses to take advantage of combined shipping costs, training team travel, and lab and specimen fees.
- Mazor 201 courses were taught using synthetic cadavers, or 'sawbones', rather than real human cadavers. Synthetic cadavers cost between $800-$2k, whereas human cadavers usually start at $5k.

The anticipated benefits of successful implementation of Mazor 201 courses were better rep understanding, support, and buy-in of the technology. This is crucial to the success of the platform, which is an essential component of Medtronic's spine portfolio and revenue. In 2018, Medtronic spent $1.7 billion for the acquisition of Mazor Robotics in their effort to pioneer the field of robotics in spine surgery and increase their minimally invasive portfolio (Clifford, 2020). Due to the many benefits of minimally invasive surgery to both patients and surgeons, its growth was projected over $10 billion in FY23, from $8.5 billion in FY22 (Clifford, 2020).

Discussion of Results

Of the five Advanced Mazor 201 courses that have taken place since the pilot in Q3FY23, the post-course evaluation survey was sent via email to 46 attendees out of 52 total. For the 6 participants who were not emailed the survey, this was attributed to 4 individuals no longer being employed in Medtronic's CST organization, and 2 individuals being on a leave of absence. Of the 46 email links that were sent, 19 responses were received from attendees. Overall, survey respondents indicated a positive reaction to their experience at the Mazor 201 course they attended. 53% reported improved knowledge of the Mazor platform overall, and 74% reported improved knowledge of the Mazor 201 topic presented. 42% reported no change in their knowledge of the Mazor platform overall, and 26% reported no change in their knowledge of the Mazor 201 topic presented. 5% reported decreased knowledge of the Mazor platform overall, and 0% reported decreased knowledge of the Mazor 201 topic presented. 84% of respondents said they would attend another Mazor 201 course, and 89% of respondents said they would recommend the Mazor 201 course to a colleague. Please see Appendix F for detailed survey results.

Conclusions/Recommendations

The results of the post-course survey will be presented to Medtronic CST Sales leadership on a biweekly call. Due to the overall positive experience of the respondents and because budget has already been allocated, the Advanced Mazor 201 courses will continue throughout the entirety of FY24 (May 2023 – April 2024). Attendees will continue to receive the post-course evaluation survey, which will eventually be replaced by a five-star rating system (not available during project execution) used uniformly for Medtronic education offerings. At the end of FY24, the cumulative results of the evaluations will be reviewed, an impact assessment will be made and presented to leadership, and a decision will be made to terminate the course or continue it into FY25.

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Appendix A

Synthesis Table

Studies/Outcomes in comparison to FH technique	1	2	3	4	5	6	Synthesis
Accuracy	NIR	Increased	Increased	Increased	NIR	Increased	All studies showed data supporting increased accuracy with robotic guidance.
FT	NIR	Decreased	NIR	Decreased	NIR	NIR	Of the two studies that measured fluoro time, both showed a decrease.
BL	NIR	Decreased	Decreased	NIR	NIR	NIR	Of the two studies that measured intra or post-op blood loss, both showed a decrease.
LOS	NIR	Decreased	NIR	NIR	NIR	NIR	One study measured length of stay and showed a decrease.
ST	NIR	Increased	Increased	No difference	NIR	NIR	Of the three studies that measured surgical time, two found that the robot increased time, and one found no significant difference.
RS	NIR	NIR	NIR	NIR	NIR	Decreased	One study measured revision surgeries for malpositioned screws and found a decrease.

Studies: 1, Cresswell; 2, Fan; 3, Kim; 4, Marcus; 5, Narain; 6, Schroder 7, Lieberman; 8, Sawires; 9, Joseph; 10, Rho; 11, Vo; 12, McKenzie.
FH, freehand; FT, fluoro time; BL, blood loss; LOS, length of stay; NIR, not in report; ST, surgical time; RS, revision surgery.

Studies/Outcomes in comparison to FH technique	7	8	9	10	11	12	Synthesis
Accuracy	Increased	Increased	Increased	NIR	Increased	Increased	All studies except one (a single procedure case study) showed data supporting increased accuracy with robotic guidance.
FT	Decreased	NIR	Inconclusive	NIR	Decreased	Decreased	Of the four studies that measured fluoro time, three showed a decrease. One study found it variable between which robotic system was used.
BL	NIR	NIR	NIR	Minimal (robotic)	NIR	NIR	None of these studies compared bloodloss, but one did mention it as minimal in the robotic case study.
LOS	NIR	NIR	NIR	Decreased	NIR	NIR	One study measured length of stay and showed a decrease.
ST	Decreased	NIR	NIR	NIR	NIR	NIR	One study reviewed surgical time and found that the robot decreased time.
RS	NIR	Decreased	NIR	NIR	NIR	NIR	One study measured revision surgeries for malpositioned screws and found a decrease.

Studies: 1, Cresswell; 2, Fan; 3, Kim; 4, Marcus; 5, Narain; 6, Schroder 7, Lieberman; 8, Sawires; 9, Joseph; 10, Rho; 11, Vo; 12, McKenzie.
FH, freehand; FT, fluoro time; BL, blood loss; LOS, length of stay; NIR, not in report; ST, surgical time; RS, revision surgery.

Appendix B

Mazor 201 Course Execution

1) **Three months - Following confirmation of budget approval ($20k/course limit), identify a target site and date and book.**
   - Most of the content can be executed without necessitating a cadaveric lab, which will save on costs drastically (approximately $5k).
   - The lab site should be similar to an operating room set-up with operating tables, x-ray capabilities, conference or class room, support staff, and loading dock capable of receiving large crates.
   - If budget and lab site allow, two courses can be held over two days. Most lab sites will require a non-refundable deposit ($500-1k) to hold the date(s).
   - Confirm shipping logistics.
2) **Three months - Determine course content, size, and agenda based on needs/requests.**
   - Current options for Mazor 201 content: Scan & Plan (half day), single position surgery(half day), trouble shooting (full day), sales utilization (full day), advanced techniques/deformity (prework required; full day), and competitive technology (half day).
   - Course size will be determined by the size of the lab site and number of robots available for shipping (8 attendees/robot, up to three robots depending on site size).
   - Determine start and end time for course based on content. For example, two half day courses could be offered back-to-back on one day. Select the appropriate agenda (example provided in Appendix B) and modify with selected times.
   - Determine needs for Training Team support and hold a planning call so they can plan their schedules and travel accordingly.
3) **Two months - Provide course details and registration information to communication channels to drive awareness and attendance.**
   - Communication channels currently available: Cranial and Spinal Technologies (CST) at a Glance monthly email; CST sharepoint calendar (with registration links); education awareness text (reps text 'Mazor' to 73737); monthly marketing awareness call (Mazor Monday).
   - Include travel and accommodation information for out-of-town attendees.
   - Track registration on Training and Education Teams channel.
4) **One month - Arrange and finalize shipping and lab logistics.**
   - Provide lab and trainers with tracking numbers and ETAs for robot crates.
   - Order any necessary disposable or samples and have shipped directly to the lab (instruments, implants, anatomy models, robot accessories).
5) **Three weeks - Send out any required pre-work to attendees.**
   - To drive engagement, pre-work should be minimal (no more than 1 hour online module or Zoom call).
6) **One week - Confirm final attendee list with lab site.**
   - Adjust for cancellations and add-ons (due to clinical obligations, reps schedules and availability changes frequently).
   - Arrange for meal catering needs.

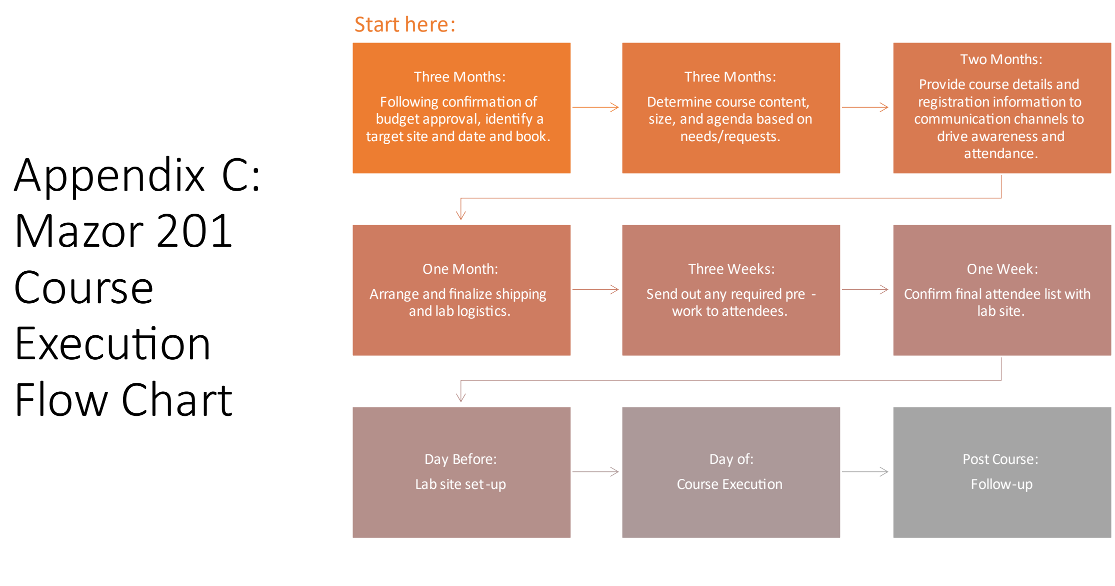
7) **Day before – Lab site set-up.**
   - Receive shipping crates and totes, unpack, and inventory.
   - Verify robot functionality.
   - Print any materials necessary (sign-in sheet, handouts, agendas, etc.)

8) **Day of – Course Execution.**
   - Follow agenda per content for the course (example provided in Appendix B)
   - Following course completion, distribute evaluation survey.

9) **Post course - Follow-up.**
   - Address any attendee questions, needs, or requests not met during the course.
   - Collect and report survey results.

Appendix C

Timetable/Flowchart



Appendix D

Sample Cost Summary for One Advanced Mazor 201 Course

Lab Expenditures	Quantity	Amount
Lab space rental	1	$10,000
Specimen Sample	1	$2,000
Radiation Technologist	1	$6,000
Total Lab Expenditures		$18,000
Travel*		
Attendee ($1500)	15	$22,500
Training Team ($1500)	2	$3,000
Total Course Cost to Org.		$43,500

*Travel is not included in the quarterly course budget ($20k/course) but is shown here to represent the total cost of a Mazor 201 course to the organization. Travel is a separate budget item planned for annually in each individual's cost center.

Appendix E

Sample Advanced Mazor 201 Course Agenda

Mazor Scan & Plan

This course is designed to give clinical field personnel the information and skills needed to execute Mazor™ Scan and Plan procedures

Workflow steps will include:

- Navigating the O-arm
- System setup & mounting
- O-arm Workflow for Mazor
- Multiple registrations

Time	Topic	Objectives
12:00-12:15	Welcome & Introductions	Overview of agenda & expectations for day
12:15-1:15	Introduction to Mazor™ Scan & Plan Procedures	Understanding the functions of the O-arm and radiology procedures Platform review and Reference frame options Understanding how Mazor works with the O-arm to produce scans
1:15-1:30	Break	
1:30-3:30	Lab	Hands-on practice • Multiple registrations • Various Reference frame options
3:30-4:00	Wrap-up	Q&A

Appendix F

Advanced Mazor 201 Post-Course Evaluation Responses

Have you previously completed basic Mazor clinical support training?	Previous (pre-201 course) comfort level with the Mazor platform (1 being very little or no comfort, 10 being extremely comfortable):	Previous (pre-201 course) comfort level with the Mazor 201 topic presented (1 being very little or no comfort, 10 being extremely comfortable):	Post-201 course comfort level with the Mazor platform (1 being very little or no comfort, 10 being extremely comfortable):	Post-201 course comfort level with the Mazor 201 topic presented (1 being very little or no comfort, 10 being extremely comfortable):
Yes	8	8	8	8
Yes	8	2	6	6
Yes	7	7	8	8
Yes	9	9	9	9
Yes	7	2	7	6
Yes	8	8	8	8
Yes	8	6	9	9
Yes	4	4	8	8
Yes	8	8	8	8
Yes	8	3	8	7
Yes	6	4	9	9
Yes	7	4	8	8
Yes	9	6	9	9
Yes	5	5	6	6
Yes	7	5	7	7
Yes	4	4	7	7
Yes	3	3	8	8
Not sure	4	5	6	5
No	3	3	4	4

Would you attend another Mazor 201 course (of a different topic)?	Would you recommend this Mazor 201 course to a colleague?	Please indicate which Mazor 201 course you attended:	What is your role within Medtronic?
No	No	Single Position (Mazor/OLIF SPS)	Spine Rep
Yes	Yes	Both Scan and Plan & Single Position	Clinical Consultant or Mazor Consultant
Yes	Yes	Single Position (Mazor/OLIF SPS)	Spine Rep
Yes	Yes	San and plan/ single position	Spine Rep
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Advanced Techniques (Deformity, Planning, and Registration)	Capital Manager
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Single Position (Mazor/OLIF SPS)	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Spine Rep
Yes	Yes	Scan and Plan	Spine Rep
Maybe	No	Scan and Plan	Spine Rep
Yes	Yes	Advanced Techniques (Deformity, Planning, and Registration)	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Spine Rep
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Yes	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant
Maybe	Yes	Scan and Plan	Clinical Consultant or Mazor Consultant