Comprehensive Educational Needs Assessment Plan for Non-Muscle Invasive Bladder Cancer (NMIBC) Patient Care and Treatment among Relevant Healthcare Professionals

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Abstract

The primary objective of this study is to conduct a comprehensive educational needs assessment in the realm of non-muscle invasive bladder cancer (NMIBC). This assessment aims to identify gaps in knowledge, understanding, and patient care practices among healthcare professionals, focusing particularly on the impact of Bacillus Calmette Guerin (BCG) shortage and the role of immunotherapy (IO) treatment. The study will be employing a mixed-methods approach, combining qualitative and quantitative research methods to gather holistic data. Ethical considerations will be prioritized, with approval from an institutional review board (IRB) and informed consent for participants. A diverse group of healthcare professionals, including urologists, oncologists, nurses, and community health workers, will be recruited. Data collection involves quantitative surveys distributed through various online platforms and in-depth interviews and focus groups for deeper insights. The sample size calculation ensures statistical validity, and questionnaires are developed through thorough literature review and expert validation. Validity and reliability will be ensured through Content Validity Ratio (CVR) and Content Validity Index (CVI) assessments, along with Cronbach's alpha coefficient for internal consistency. Pre- and post-training knowledge tests will be done to gauge participants' learning outcomes. For the interviews and focus groups, thematic content analysis will be employed to identify areas such as patient journey, impact of BCG shortage, understanding of IO treatment, collaboration among healthcare professionals, barriers to IO therapy, and the role of nurses and community health workers. The study's impact will be assessed by comparing pre- and post-training knowledge test scores and analyzing data using qualitative and quantitative methods. Findings will be presented in a comprehensive report, emphasizing key insights and recommendations for enhancing NMIBC patient care and treatment. The study's rigorous design and multifaceted approach contribute to advancing knowledge, improving practices, and fostering collaboration among healthcare professionals in the field of NMIBC.

Introduction

One of the most significant health dilemmas globally is cancer (El-Siddig et al., 2017) (1). The International Agency for Research on Cancer reported that the incidence and prevalence of cancers worldwide are 14.1 million and 32.6 million, respectively (El-Siddig et al., 2017., Ferlay et al. 2019, Bray, 2013) . Still, more than 50% of these cancers prevail in less developed regions. Furthermore, this number is presumed to increase to 22 million annually within the next two decades (El-Siddig et al., 2017, Stewart, 2014). Bladder cancer encompasses 5% of new cancer diagnoses in the United States and it is the sixth most prevalent malignancy (DeGeorge et al 2017, American Cancer Society 2016). According to the American Cancer Society report published in 2016, 90% of patients older than 55 years are usually affected, with a mean age of diagnosis of 73 years. As per the GLOBOCAN 2018, bladder cancer was estimated to have 549,000 new cases and 200,000 deaths per year and was ranked 10th among all cancers in the world; it contributed 3.4% to the total cancer burden worldwide. In India, there were 18,921 new cases and 10,231 deaths with an incidence rate (per 105) of 2.4 and 0.7 in males and females, respectively, and mortality rates (per 105) as 1.3 and 0.3 in males and females, respectively; it is ranked 17th in incidence and 19th in mortality. The frequencies of bladder cancer in different hospital registries across India shows that among males, Mumbai recorded the highest number of cases, followed by Chandigarh and Thiruvananthapuram, and among females, the highest was in Mumbai followed by Chandigarh and Thiruvananthapuram, indicating a male preponderance (Mishra & Balasubramaniam 2021, National Centre for Disease Informatics and Research 2016). A study showed that high mortality incidents of bladder cancer might link to a lack of public awareness about it and its related risk factors; thus, patients arrive later, have higher treatment morbidity, and have lower survival rates (Souaid & Hindy, 2018., Rouprêt et al (2021), Mahendra & Rita, 2014). Unidentified knowledge gaps of the health care professionals also may be an important contributing factor.

Non-muscle invasive bladder cancer (NMIBC) is often the focus of research and clinical attention for several reasons:Prevalence and Incidence: NMIBC accounts for the majority of diagnosed bladder cancer cases. It is estimated that around 75-85% of bladder cancers are initially diagnosed as non-muscle invasive. Due to its prevalence, NMIBC has a significant impact on healthcare systems and patient populations.

Early Detection and Treatment: NMIBC is typically diagnosed at an earlier stage compared to muscle-invasive bladder cancer (MIBC). Early detection allows for less aggressive treatment approaches and better outcomes. Additionally, NMIBC offers an opportunity for surveillance and preventive interventions to prevent disease progression.

Patient Quality of Life: NMIBC, being confined to the inner lining of the bladder, often presents with fewer symptoms and a less invasive treatment approach. This can lead to better preservation of bladder function and overall quality of life for patients.

Treatment Options: The treatment landscape for NMIBC is evolving rapidly, with various therapeutic options available, including transurethral resection, intravesical therapy (e.g., BCG immunotherapy), and newer immunotherapies and targeted therapies. Research in NMIBC aims to further optimize these treatments.

Disease Progression: If left untreated or inadequately managed, NMIBC can progress to muscle-invasive or metastatic disease, which is associated with higher morbidity and mortality. Focusing on NMIBC allows for interventions that could potentially prevent disease progression.

Clinical Trials and Research Opportunities: The relatively indolent nature of NMIBC makes it an ideal candidate for clinical trials aimed at testing new treatments, technologies, and interventions. Research in NMIBC helps advance the understanding of bladder cancer and contributes to the development of novel therapies.

Healthcare Resource Allocation: The economic burden of bladder cancer treatment is significant. Focusing on NMIBC may help allocate healthcare resources more efficiently by addressing the most prevalent form of the disease and reducing the need for aggressive interventions and complex surgeries associated with MIBC.

Public Health Impact: Public health campaigns and educational initiatives often emphasize early detection and prevention of bladder cancer. Given that NMIBC is more likely to be detected early, efforts to improve knowledge, awareness, and screening may be particularly effective in reducing the overall burden of bladder cancer.

It's important to note that while NMIBC receives significant attention, research and clinical efforts also continue to address muscle-invasive and metastatic bladder cancers. Both types of bladder cancer are important and warrant ongoing investigation to improve patient outcomes across the entire disease spectrum.

There is a scarcity of the published data on the educational needs of healthcare professionals regarding NMIBC in India to the best of our knowledge.

Overall Goal

The overall goal of this study is to conduct a comprehensive educational needs assessment in the area of non-muscle invasive bladder cancer (NMIBC) to identify gaps in knowledge, understanding, and patient care practices among healthcare professionals, with a focus on the impact of Bacillus Calmette Guerin (BCG) shortage and the role of immunotherapy (IO) treatment.

Objectives

The objectives of the proposed medical education program is to assess the knowledge gap regarding NMIBC among healthcare professionals and train them on the following focus areas:

Accurately Describe a Typical Patient Journey and Current Treatment Approaches of High-Risk Non-Muscle-Invasive Bladder Cancer (NMIBC): Understand and outline the steps a patient with high-risk NMIBC goes through from diagnosis to treatment and follow-up. Provide an overview of the current treatment options, including surgery, intravesical therapy (such as Bacillus Calmette Guerin - BCG), and emerging approaches like immunotherapy.

Highlight the challenges and decisions patients and healthcare providers face at each stage of the patient journey. Assess the Impact of BCG Shortage on Patient Care and Management Strategies: Analyze how the shortage of Bacillus Calmette Guerin (BCG) has affected the treatment landscape for NMIBC patients. Examine how healthcare professionals are adapting and managing patient care in light of the BCG shortage, including alternative therapies and treatment regimens.

Evaluate Physician Understanding of Immunotherapy (IO) Mechanism of Action in Early Bladder Cancer: Investigate the current level of understanding among physicians about how immunotherapy (IO) works as a treatment for early bladder cancer. Explore the relevance of immunotherapy's mechanism of action in disease progression and patient outcomes.

Define the Current Role of Urologists in NMIBC Treatment: Describe the responsibilities and contributions of urologists in the comprehensive treatment of NMIBC patients. Highlight urologists' involvement in diagnosis, treatment planning, surgery, and ongoing surveillance. Explore Collaboration Between Oncologists and Urologists in NMIBC Treatment Decision-Making: Investigate the potential collaborative efforts between oncologists and urologists in determining the most appropriate treatment for NMIBC patients. Envision the coordination of care between the two specialties, especially in light of new subcutaneous IO formulations.

Anticipate Barriers to Adoption of New IO Agents and Resources Needed for Healthcare Professionals: Identify potential challenges and obstacles that might arise with the introduction of new

professionals' confidence and familiarity with IO therapy.

Define the Roles of Nurses and Community Health Workers in NMIBC Care and IO-Related Adverse Event Management:

Explore the contributions of nurses and community health workers in supporting urologists and patients throughout the NMIBC treatment journey.

Outline the specific roles of nurses in managing immunotherapy-related adverse events and providing immunotherapy (IO) agents for NMIBC treatment.

Discuss the resources, training, and education needed to enhance urologists' and other healthcare patient education.

Overall, these objectives aim to provide a comprehensive understanding of the patient journey, treatment options, collaborative decision-making, and support mechanisms for individuals with High-Risk Non-Muscle-Invasive Bladder Cancer (NMIBC).

This comprehensive educational needs assessment in the area of non-muscle invasive bladder cancer (NMIBC) serves as a foundational step to address gaps in knowledge, improve patient care practices, and enhance the overall quality of healthcare provided by professionals. Here's why this study is important:

Patient Care Enhancement: The study will directly contribute to improving patient outcomes and experiences. By identifying gaps in healthcare professionals' understanding of NMIBC, including the impact of Bacillus Calmette Guerin (BCG) shortage and the role of immunotherapy (IO) treatment, the institution can tailor educational interventions to bridge these knowledge gaps. This will ultimately lead to more informed and effective patient care, better treatment decisions, and improved patient satisfaction.

Optimized Treatment Approaches: The study will provide insights into the specific challenges healthcare professionals face in managing NMIBC patients, especially in the context of BCG shortage and emerging IO treatments. Understanding these challenges will allow our institution to design targeted training programs that focus on these critical areas, enabling healthcare professionals to adopt optimal treatment approaches and stay updated with the latest advancements.

Response to Healthcare Trends: The evolving landscape of NMIBC treatment, such as the shortage of BCG and the emergence of IO therapies, demands that healthcare professionals stay current with the latest developments. Conducting this study will enable our institution to proactively address these trends, ensuring that healthcare professionals are well-prepared to adapt to changes and deliver state-of-the-art care.

Interdisciplinary Collaboration: The study's focus on collaboration between urologists and oncologists highlights the need for a multidisciplinary approach to NMIBC treatment. By assessing how these two specialties collaborate in decision-making and patient care, our institution can foster better teamwork and communication, leading to more holistic and patient-centred treatment plans.

Resource Allocation and Investment: Understanding the educational needs of healthcare professionals allows our institution to allocate resources more effectively. By identifying the specific areas where additional training is needed, our institution can prioritize investments in educational programs, workshops, seminars, and materials that will have the greatest impact on improving patient care and outcomes.

Patient Safety and Adverse Event Management: A comprehensive educational needs assessment can also address the management of immunotherapy-related adverse events. By ensuring that healthcare professionals are well-informed about potential adverse effects and their appropriate management, the study contributes to patient safety and reduces the risks associated with new treatments.

Professional Development and Job Satisfaction: Providing targeted educational opportunities enhances the skills and knowledge of healthcare professionals, leading to increased job satisfaction and career growth. Addressing their educational needs demonstrates the institution's commitment to supporting its staff's professional development, which can lead to a more motivated and engaged workforce.

Material and Methods

Study Design: The study will employ a mixed-methods approach, combining qualitative and quantitative research methods to gather comprehensive data.

Ethical Considerations: Ethical approval will be obtained from an appropriate institutional review board (IRB) prior to conducting the study. Participants will be informed about the purpose of the study, their voluntary participation, and confidentiality of their responses.

Target Audience (Participant Recruitment): A diverse group of healthcare professionals including urologists, oncologists, nurses, community health workers, and relevant stakeholders will be recruited.

Data Collection: Surveys- Quantitative surveys will be distributed to a wide range of healthcare professionals to assess their current knowledge, practices, and understanding of NMIBC patient care, including the impact of BCG shortage and IO treatment.

Interviews and Focus Groups: In-depth interviews and focus group discussions will be conducted with a subset of participants to delve deeper into their perspectives on patient journey, treatment approaches, collaboration, and educational needs.

The proposed questionnaires of the study will be distributed across online social media channels such as Facebook, twitter, Instagram, Snapchat, WhatsApp and demonstrated using self-managed, structured surveys which will focus on South India. The institutional ethical approval will be obtained. The survey will follow the principles of the declaration of Helsinki. The calculated sample size depends on Stat Calc of Open Epi software of Rollin School of Public Health, Emory University, USA (Sullivan & Dean, 2009). After the calculations, the smallest sample size to achieve an accuracy of $\pm 5\%$ with a 97% confidence interval was 471.

The questionnaires will be written in English and will be anonymous structured with the help of Heads of the Departments Oncology, Urology and validated by the epidemiologist of the study institution. The questionnaire will begin by collecting educational and demographic information of the participants and will follow to gather general information about bladder cancer, its characteristics, and risk factors according to a previously published article in addition to the main focus areas as mentioned in the objective.

Questionnaire development: The questionnaire will be developed through a comprehensive search of various databases, including PubMed, Scopus, ISI, and Google Scholar. Basic questions pertaining to bladder cancer will be extracted from the literature. After a thorough review and approval by three oncologists, the flow chart will be constructed, and the initial questionnaire will be designed.

Face validity: The evaluation of face validity, encompassing factors such as reasonableness, appropriateness, attractiveness, and logical sequence of questionnaire items, will be undertaken by a group of five oncologists and urologists.

Content Validity: The content validity of the questionnaire will be assessed using the Content Validity Ratio (CVR) and the Content Validity Index (CVI). An expert panel, consisting of two oncologists, two urologists, and one epidemiologist, will be engaged in evaluating the content validity.

For the calculation of CVR, the experts will be asked to determine the necessity of each questionnaire item. Subsequently, each item will be scored on a 3-point scale ranging from 1 to 3, reflecting the degrees of necessity (not necessary, useful but not essential, and essential).

The CVR will then be computed utilizing Lawshe's CVR formula, where $CVR = (Ne - N/2)/(N/2)$, with Ne representing the count of panelists indicating "essential," and N representing the total number of panelists. During the questionnaire validation process, the CVR value will be calculated for each individual item, applying the following formula:

CVR = (Number of experts indicating "essential" - Total number of experts)/ (Total number of experts/2)

To assess the CVI, each of the questions will be rated by panel members based on their specificity, simplicity, clarity, or transparency. This will be done using a 4-point Likert scale ranging from 1 to 4 (I disagree, I have no opinion, I agree, and I agree very much). The CVI will be calculated using the formula:

CVI = ni / n

Where ni represents the number of experts who have given a score of 3 and 4, and n is the total number of panel members. The minimum acceptable CVI will be set at 79%. If the calculated CVI falls below 79%, the respective item will be considered for deletion from the questionnaire.

Reliability: To gauge the questionnaire's internal consistency, Cronbach's alpha coefficient will be computed. This coefficient measures the degree of relationship among different items on the scale. This analysis will be conducted on a sample of 50 participants.

For evaluating the reproducibility over time, the questionnaires will be administered to 50 participants twice within a span of one week. The intraclass correlation coefficient (ICC) will subsequently be measured to assess the consistency of responses between the two administrations.

Participants' knowledge scores will be classified using a modified Bloom's cutoff value of 75% (Duduyemi et al (2020)., Wildani et al (2021) (13,14). Therefore, overall scores below 75% will be considered indicative of poor knowledge, while scores above 75% will be regarded as demonstrating good knowledge. Each accurate answer will receive one point, while incorrect and "did not know" responses will receive 0 points. These points will then be aggregated.

Participants who choose not to participate voluntarily in the survey will be excluded from the study. The survey will be distributed to participants from November 2023 to August 2024. The collected information will be entered into Microsoft Excel spreadsheets. After ensuring completeness and addressing minor typographical errors, the data will be transferred to a Statistical Package for the Social Sciences (SPSS) 23 spreadsheet (IBM, Armonk, NY). Descriptive statistics will be expressed as percentages for categorical variables, while mean and standard deviation will be used for continuous variables. A significance level of $P \leq 5\%$ will be considered statistically significant. The analysis of categorical variables will be conducted using the Chi-square test.

Part B: In-depth interviews And Focused Group Discussion

Participants will then be scheduled for either an IDI or FGD, depending on their preference. Using semi-structured topic guides, individual IDIs and 5 FGD swill be conducted. at the Dept of Urology. Interviews will be carried out in English.To promote candid responses and discussions, participants will be assured of anonymity and confidentiality.

Interesting themes that emerged in earlier interviews will be explored further in subsequent interviews and discussions until saturation is achieved and no new information would be emerging from the interviews and FGDs. Interviews/FGDs may last for about 1-1.5 hours. Participants will be given transport reimbursement.

Both the IDIs and FGDs will be audio-recorded, translated and transcribed into English.Manual field notes will be taken. Data from the IDIs and FGDs will be analyzed using content analysis approach, an approach widely used in qualitative research. Components of IDI and FGD include the following;

Areas of Focus

a. Patient Journey and Treatment Approaches
b. Impact of BCG Shortage
c. Understanding of Immunotherapy (IO) Treatment
d. Role of Urologists and Collaboration with Oncologists
e. Barriers and Resources for IO Therapy
f. Role of Nurses and Community Health Workers in supporting urologists, managing IO-related adverse events, and patient care

Training

The training course on focus areas as mentioned above will be conducted by the Inhouse urologists along with the leading urologists of the South India.

Teaching methods: interactive lectures, group work, workshop

Pre- and post- training knowledge test

Participants' knowledge on the addressed topics will be carried out by administering validated pre- and post- tests.

Data Analysis

Data from surveys, interviews, and focus groups will be analysed using a combination of quantitative and qualitative analysis methods to identify key themes, trends, and educational gaps.

Analysis and Reporting: Data collected from surveys, interviews, and discussions will be analyzed using qualitative and quantitative methods. Findings will be summarized in a comprehensive report, highlighting key insights, challenges, and recommendations for addressing educational needs and improving NMIBC patient care and treatment.

Innovation

The innovation and novelty of the proposed study lie in its comprehensive approach to addressing gaps in knowledge, understanding, and patient care practices among healthcare professionals in the context of non-muscle invasive bladder cancer (NMIBC). Several key aspects of innovation and novelty can be highlighted:

Mixed-Methods Approach: The study employs a mixed-methods research design that combines qualitative and quantitative data collection techniques. This approach allows for a more holistic understanding of the subject

matter by capturing both numerical data from surveys and rich qualitative insights from interviews and focus groups.

Diverse Participant Recruitment: The study aims to recruit a diverse group of healthcare professionals, including urologists, oncologists, nurses, community health workers, and other stakeholders. This broad spectrum of participants ensures a comprehensive representation of perspectives and experiences, contributing to a well-rounded analysis.

Focus on Emerging Issues: The study focuses on two contemporary and impactful issues in NMIBC treatment: the impact of Bacillus Calmette Guerin (BCG) shortage and the role of immunotherapy (IO) treatment. This emphasis on current challenges and new treatment modalities adds a forward-looking dimension to the study's findings.

Utilization of Social Media Channels for Data Collection: The study proposes using online social media channels like Facebook, Twitter, Instagram, Snapchat, and WhatsApp for distributing the survey. This approach leverages modern communication platforms to reach a wide audience, potentially enhancing participant engagement and data collection.

Validation and Expert Involvement: The study demonstrates a rigorous approach to questionnaire development, validation, and content assessment. The involvement of experts from various specialties and the application of established methodologies such as Content Validity Ratio (CVR) and Content Validity Index (CVI) enhance the robustness of the study's instruments.

Modified Bloom's Cutoff for Knowledge Assessment: The study introduces a modified Bloom's cutoff value of 75% for classifying participants' knowledge scores. This tailored approach to knowledge assessment ensures a relevant and context-specific benchmark for evaluating participants' understanding of NMIBC.

Qualitative Data Analysis: The study's qualitative analysis, employing a content analysis approach, adds depth to the investigation by exploring nuanced themes and perspectives. This methodological choice allows for a more comprehensive exploration of participants' views on patient journey, treatment approaches, collaboration, barriers, and resources.

Focus on Interdisciplinary Collaboration and Training: The study not only examines collaboration between urologists and oncologists but also includes a training component. The training course, led by in-house urologists and prominent experts, underscores the study's practical orientation and its potential for real-world impact.

Pre- and Post-Training Knowledge Assessment: The inclusion of pre- and post-training knowledge tests offers a novel approach to evaluating the effectiveness of the training program. This assessment provides insights into participants' learning outcomes and underscores the study's focus on enhancing healthcare professionals' knowledge and practices.

Participant- Centered Approach: Throughout the study, there is an emphasis on participants' perspectives and experiences, from questionnaire development to in-depth interviews and focus groups. This participant-centered approach aligns with a patient-centric healthcare model and ensures that findings are grounded in the reality of healthcare practice.

In conclusion, the proposed study's innovation and novelty lie in its comprehensive, multidimensional approach to addressing gaps in knowledge and patient care practices within the context of NMIBC. By combining various research methods, focusing on emerging issues, and integrating modern communication channels, the study aims to provide valuable insights for improving healthcare professionals' understanding and practices in NMIBC management.

Evaluation and outcomes

Based on the following, the organization will determine if the gap in knowledge and practices among the target group has been addressed,

Metrics for Needs Assessment: The organization will measure the effectiveness of addressing the knowledge gap through several key metrics, including: Pre- and Post-Training Knowledge Test Scores: A comparison of participants' scores on the pre-training and post-training knowledge tests will be used to assess the change in knowledge. This quantifiable measure will indicate how much participants' understanding has improved after the training.

Qualitative Feedback and Insights: In-depth interviews and focus group discussions will provide qualitative insights into participants' perceptions, perspectives, and attitudes before and after the training. Themes and trends emerging from these discussions will contribute to a comprehensive understanding of changes in knowledge and awareness.

Sources of Data and Data Collection: The organization anticipates using multiple sources of data to determine if the gap was addressed:

Pre- and Post-Training Knowledge Tests: Data from the administered pre- and post-training knowledge tests will provide quantifiable evidence of improvement in participants' understanding.

Qualitative Interviews and Focus Groups: Transcripts from interviews and focus groups will be analyzed for changes in participants' responses, depth of understanding, and engagement levels.

Data Analysis: The organization will analyze the collected data using the following methods:

Quantitative Analysis: Pre- and post-training knowledge test scores will be statistically compared to assess the level of improvement. Descriptive statistics and inferential tests (e.g., paired t-tests) will be used to analyze changes in scores.

Qualitative Content Analysis: Qualitative data from interviews and focus groups will undergo thematic analysis. Emerging themes related to improved understanding, attitude changes, and engagement will be identified and categorized.

Controlling for Other Factors: To control for other factors outside the project, a comparison with baseline data will be employed. Baseline data collected before the intervention will serve as a reference point for evaluating the impact of the project. Any changes observed in post-intervention data can be attributed to the training program.

Quantifying Expected Change: The expected change from this project will be quantified in terms of the improvement in participants' knowledge scores. For instance, if the pre-training knowledge test yields an average score of 50%, and the post-training test yields an average score of 75%, the project can be said to have achieved a 25% improvement in participants' understanding.

Determining Target Audience Engagement: The organization will assess target audience engagement by:

Attendance and Participation Rates: The level of participation and attendance in training sessions, interviews, and focus groups will be measured. High participation rates indicate strong engagement.

Qualitative Feedback: Participant statements during interviews and focus groups about the usefulness, relevance, and impact of the training will provide insights into their level of engagement.

Feedback and Interaction: Any feedback, questions, or interactions during the training sessions will be indicative of participant engagement and interest.

In conclusion, the organization will use a combination of quantitative and qualitative metrics, pre- and post-training assessments, and participant engagement indicators to determine if the knowledge gap has been addressed and if the target audience was fully engaged in the project. Comparisons with baseline data will help control for external factors, and the quantification of changes will provide a clear understanding of the project's impact.

Dissemination Plan

The below dissemination plan outlines how the findings, insights, and outcomes of the study will be effectively communicated and shared with relevant stakeholders, both within the organization and in the broader healthcare community. The goal of the dissemination plan is to ensure that the knowledge gained from the study contributes to informed decision-making, improved patient care practices, and advancements in the field of non-muscle invasive bladder cancer (NMIBC) management.

Internal Communication: Stakeholder Meetings: Organizing meetings with key stakeholders within the organization, including urologists, oncologists, nurses, and community health workers, to present the study's findings. This can be done through presentations, workshops, and discussions. Departmental Seminars: Conducting seminars or workshops within relevant departments to share the study's outcomes. Encouraging open dialogue and feedback among healthcare professionals.

Research Reports: Comprehensive Report: Developing a detailed research report summarizing the study's objectives, methods, findings, and implications. This report will be accessible to all relevant stakeholders within the organization. Executive Summary: Creating an executive summary of the research report that highlights key findings, recommendations, and actionable insights. This condensed version will be distributed widely to decision-makers and other interested parties.

Publications: Peer-Reviewed Journals: Preparing manuscripts for submission to reputable medical and healthcare journals. Publishing in peer-reviewed journals will contribute to the broader scientific community's understanding of the study's outcomes.

Conference Presentations: Presenting the study's findings at relevant medical conferences, symposia, and workshops. This platform allows for direct interaction with peers and experts in the field.

Online Platforms: Institutional Website: Creating a dedicated section on the institution's website to showcase the study's objectives, progress, and outcomes. Provide downloadable resources such as the research report, executive summary, and presentation materials.

Social Media: Utilizing social media platforms to share key findings, updates, and relevant insights. Engage with online healthcare communities to foster discussions and knowledge exchange.

Continuing Education Programs: Professional Development Workshops: Development and offering workshops, webinars, or training sessions based on the study's findings. These programs can be tailored for healthcare professionals to enhance their knowledge and practices in NMIBC management.

Collaboration and Partnerships: Collaborative Initiatives: Collaboration with other healthcare institutions, organizations, or academic centres to jointly disseminate the study's findings. This can involve co-hosting seminars, webinars, or workshops. Media Partnerships: Partner with medical media outlets or publications to feature articles or interviews discussing the study's outcomes and implications.

Patient Engagement: Patient Education Materials: Developing patient-friendly educational materials based on the study's findings. These materials can be distributed in clinics, hospitals, and online platforms to empower patients with accurate information.

Policy Recommendations: Policy Briefs: Creating concise policy briefs summarizing the study's relevance to healthcare policy and practice. Sharing these briefs with policymakers, regulatory bodies, and advocacy groups to influence decision-making.

Long-Term Follow-Up: Longitudinal Studies: Considering conducting follow-up studies to assess the sustained impact of the educational interventions on healthcare professionals' knowledge and practices over time.

By strategically disseminating the study's findings through a variety of channels, the organization aims to ensure that the knowledge gained from the research contributes to positive changes in NMIBC management, healthcare practices, and patient outcomes. The dissemination plan fosters a culture of continuous learning and improvement within the organization and supports the broader healthcare community in staying informed about advancements in the field.

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