Patient-centred Training for Pharmaceutical Good Distribution Practice in Pharmacy of Your Choice (POYC)

A thesis submitted in partial fulfilment
of the requirements for the award of
Doctorate in Pharmacy

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Dedication

To God Almighty, my mother, my siblings, and my family.

Acknowledgement

The researcher is grateful to God for giving her the courage and drive to finish her thesis.

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MFDB

Abstract

The World Health Organization (WHO) advocates for a "responsive" healthcare system that meets people's needs, and patient-centredness in healthcare emphasizes the importance of a patient's values and preferences in the delivery of care. The Ministry of Health's Pharmacy of Your Choice (POYC) is devoted to offering the highest quality pharmaceutical service in Malta while also maintaining a patient-centred service by integrating patient-centered Good Distribution Practice (GDP) training within the POYC workforce. The focus of this research is to address the training needs of POYC's health workforce in terms of pharmaceutical good distribution practices, with an emphasis on a more patient-centred approach. The methodology consists of two phases. Phase 1 tackled the needs assessment. A questionnaire aimed at assessing the core competencies of the services of the POYC workforce was compiled, validated, and disseminated to the respondents. An interview, gathering feedback from stakeholders about the status of the POYC workforce services, was conducted. The study findings from Phase 1 led to Phase 2, which was the development and evaluation of a patient-centred training course on pharmaceutical GDP. A validated questionnaire was prepared and delivered to 27 POYC respondents after a literature review of the research topic. Study findings indicate that the most common training needs highlighted by the participants are good distribution practices (Mean = 4.3), organization and personnel (Mean = 4.1), patient-centred care philosophy (Mean = 4.1), and training and development (Mean = 4.1. Enhancement of pharmaceutical services through improved patient access and comfort; quality assurance; a fully integrated system of medicine prescription from the hospital to community pharmacy; a holistic and community-based patient-centric approach in healthcare service; consistency of medicine delivery; and the preparedness of POYC to handle an emergency like the COVID-19 pandemic, were the five themes that emerged from the interviews.

The mixed methods training needs assessment led to the creation of the "Roadmap to Patient-Centred Care Good Distribution Practice for the Pharmacy of Your Choice Workforce" online training course. The pilot implementation of the online training course was completed by 12 participants. The appropriate training course on pharmaceutical good distribution practice was needed to meet the revised EU GDP guidelines and to ensure a patient-centred approach to the GDP process within POYC.

Key words: Patient-centred training, good distribution practice, pharmacy of your choice

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List of Abbreviations

CPD – Continuing Professional Development

CARE – Centralized Aid of Registered Entitlements

CPSU – Central Procurement and Supply Unit

DDA – Drugs of Dependence and Abuse

EC – European Commission

EAFP – European Association of Faculties of Pharmacy

EMA – European Medicines Agency

EU – European Union

GDP – Good Distribution Practice

GMP – Good Manufacturing Practice

HLHO – Health Literate Healthcare Organizations

IOM – Institute of Medicine

KGH – Karin Grech Hospital

MDH – Mater Dei Hospital

MMA – Malta Medicines Authority

NPB – Named Patient Basis

POYC – Pharmacy of Your Choice

RP – Responsible Person

SOP – Standard Operating Procedures

QA – Quality Assurance

UNESCO – United Nations Educational, Scientific and Cultural Organization

WHO – World Health Organisation

Chapter 1

Introduction

1.1 Health System and Healthcare Organization

A health system is composed of all the organizations, institutions, resources, and individuals whose fundamental purpose is to develop people's quality of life. The expertise and dedication of the health workforce are critical to the success of health systems and services. The World Health Organization (WHO) described the six primary pillars namely: financing, service delivery, medical products and technologies, health care workforce, governance and leadership, and information.[1] Health systems must be financially sustainable, suitable for its purpose, people-centred, and with substantial proof in order to speed up gains in health outcome and eliminate inequalities.

The 2008 WHO European Ministerial Conference on Health Systems in Tallin was a landmark moment in the declaration of European Union (EU) Member States' efforts to improve and be responsible for their health systems' performance.[2] In the end, health care systems should be designed to benefit the people and society. They must strive to add value to people's health not only by caring for them while they are sick or providing support to avoid or mitigate the effects of disease, but also by promising economic security in all times of extreme vulnerability (Sheikh et al., 2014).

The health system is structured into four areas: the patient, the heath care team, the health care organization, and the economic and political settings (Figure 1.1). Infrastructure and other complementary resources are offered by the healthcare organization to facilitate operations and advancement of the care teams (Reid et al., 2005). The healthcare organization through its diverse organizational practices, decision-making

[1] Dal Poz MR, Gupta N, Quain E, Soucat ALB, editors. Handbook on Monitoring and Evaluation of Human Resources for Health: with special applications for low-and middle-income countries. Geneva Switzerland, WHO Press; 2009.

[2] Figueras J, McKee M, Lessof S, Duran A, Menabde N, editors. Health systems, health and wealth: Assessing the case for investing in health systems. European Observatory on Health System and Policies, Denmark WHO Regional Office for Europe: 2008

systems, and operating systems can provide a comprehensive culture for change.[3] Multiple challenges such as patient expectations, concerns and safety, health services compliance issues, and quality parameters confront the healthcare organization. Others are emerging phenomena, while others are significant inconclusive challenges. A healthcare organization workforce is essential for producing effective health outcomes because it must respond proactively to individual requests and expectations while also ensuring fairness and efficiency to achieve the best potential health outcomes.

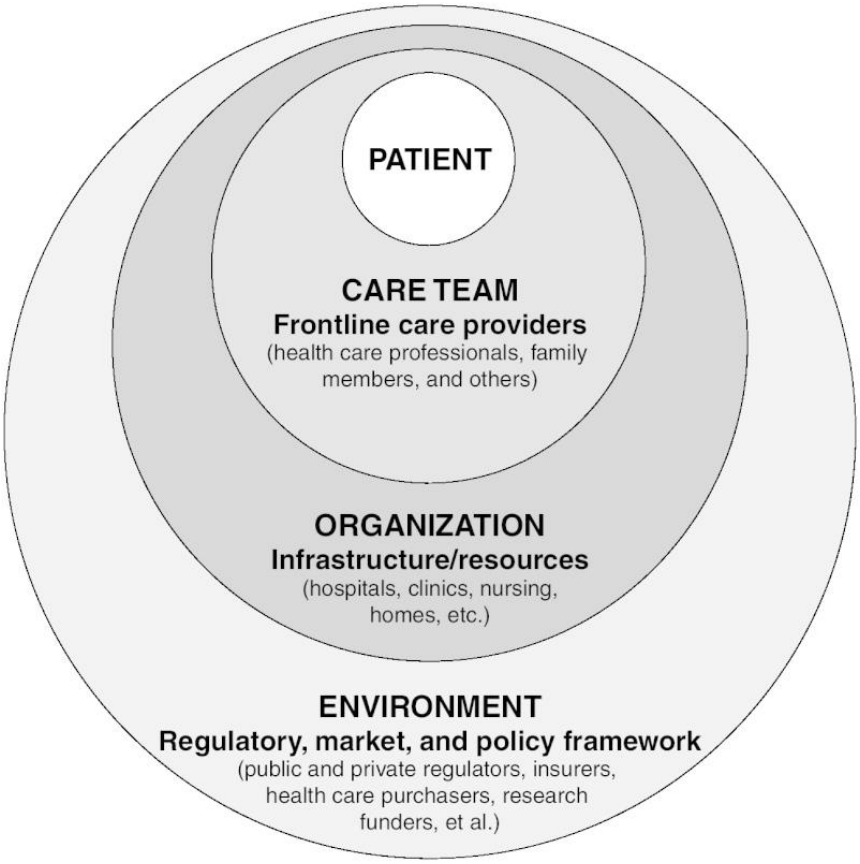

Figure 1.1 A four-tiered healthcare system is depicted in this diagram

(Adapted from Reid PP, Compton WD, Grossman JH, et al., editors. Building a Better Delivery System: A New Engineering/Health Care Partnership. Washington (DC) USA. National Academies Press; 2005.)

[3] Ferlie, E B, and S M Shortell. "Improving the quality of healthcare in the United Kingdom and the United States: a framework for change." The Milbank quarterly vol. 79,2 (2001): 281-315. doi:10.1111/1468-0009.00206

1.2 Good Manufacturing Practice

WHO has been concerned about drug quality since its inception and is unified in its goal to improve health for everyone, everywhere, by working with 194 member states, six regions, and more than 150 offices. Article 2 of the WHO Constitution provides on the organization to "develop, establish, and promote global standards with respect to food, biological, pharmaceutical, and similar products." Any health service is clearly jeopardized without assurance that these drugs are relevant to priority health needs and that they meet acceptable quality, safety, and efficacy requirements. At the International Conference on Primary Healthcare in Alma-Ata in 1978, one of the criteria for the delivery of healthcare was highlighted as the availability of high-quality necessary drugs.[4]

Good Manufacturing Practice (GMP) is a set of principles and practices that, when followed, ensures that medicines are of reliable high standards, appropriates for their intended purpose, and meets the marketing authorization's requirements that must be observed by any manufacturer of pharmaceuticals for the European market. Inspections are overseen by the European Medicines Agency (EMA), which ensures that GMP standards are followed and harmonized across Europe.

1.3 Good Distribution Practice (GDP)

GDP is a critical component of pharmaceutical materials supply chain management, which is characterized by the timely and reliable transportation of pharmaceutical commodities (Kumar & Jha, 2015).

[4] World Health Organization (WHO). Quality Assurance of Pharmaceuticals: a compendium of guidelines and related materials. Vol. 2, Good manufacturing practices and inspection 2nd ed. Geneva: WHO Press; 2007.

It necessitates secured pharmaceutical storage, transportation, and handling. GDP principles should be incorporated into national legislation and guidelines for the storage and distribution of pharmaceutical goods. According to Directive (2013/C343/01 (2013), wholesalers must follow the European Commission's Good Distribution Practice principles and guidelines. The amended guidelines contained long-overdue standard changes to properly reflect supply chain complexity and conform with Directive 2011/62/EU, which forbids counterfeit pharmaceutical items from gaining access to the genuine distribution chain. The Directive 2013/C343/01 guidelines, which were released on November 5, 2013, superseded these criteria.[5]

GDP conformity will provide control of the supply chain and, as a result, the integrity and quality of pharmaceutical goods to prevent harm to public health and allow adequate performance of health systems (Van Assche et al., 2018) will be ensured. Regulatory bodies inspect this compliance on a regular basis. "Manufacturers of medicinal products located in the European Union or in third countries, as well as distribution companies of drug products, shall be subject to periodic inspections by the competent authority of the Member State concerned," as per Directive 2011/62/EU, which amends Directive 2001/83/EC (Stoimenova et al., 2019).

1.4 National Healthcare Services in Malta

Modern health care systems cannot be funded primarily through out-of-pocket spending by patients. Most developed countries fund healthcare through general taxation or social insurance agencies due to the mismatch of individual resources and healthcare requirements (Ellul & Ellul, 2021). Malta's healthcare system has no exception. All

[5] Guidelines of 5 November 2013 on Good Distribution Practice of Medicinal Products for Human Use Text with EEA relevance [Internet]. Luxembourg: OJ C; 2013 [2022 May 05]. Available from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013XC1123%2801%29

residents of Malta have access to a wide range of healthcare services. The state health services and private general practitioners (GPs) provide primary health care on the island.

These two primary healthcare systems are fully independent of one another, but they work together to provide the best health outcomes for patients. The state-run primary care service is provided at no cost and is accessible 24 hours a day, seven days a week at government healthcare clinics. Private doctors practice in their own clinics or in community pharmacies (Pullicino et al., 2015). These clinics can be access directly by the patient.[6]

The healthcare industry is one of the largest employers in Malta. In 2010, wages contributed for 47% of the total expenditures of the Ministry of Health. The civil servants are those who work for the government in the health sector. Support personnel, ranging from auxiliary workers to clerical specialists, fill up the healthcare workforce in addition to health professionals (Azzopardi-Muscat et al., 2017).

1.5 Stakeholders in the National Healthcare Systems

A stakeholder is described as "any group or individual who has the ability to influence or is influenced by the achievement of the organization's goals."[7] In addition, Dunham et al. (2006) asserts that it represents a "group that the organization needs to exist, particularly customers, suppliers, employees, shareholders, and communities." The healthcare professionals, patients, pharmaceutical companies, and governments are all

[6] Rotar Pavlič D, Soler JK, Sammut MR. Malta. In: Kringos DS, Boerma WGW, Hutchinson A, et al., editors. Building primary care in a changing Europe: Case studies [Internet]. Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2015. (Observatory Studies Series, No. 40.) 19. Available from: https://www.ncbi.nlm.nih.gov/books/NBK459005/

[7] Freeman RE. Strategic management: A stakeholder approach. Cambridge University Press; 2010.

key stakeholders in pharmacovigilance. Healthcare providers are the most important of these stakeholders (Jose et al., 2021). Patient groups and public interest organizations can help with the creation of regulatory policies and actions.

The engagement of the stakeholders is essential for understanding their expectations, needs, and concerns.[8] Embedding their opinion and views in strengthening pharmaceutical GDP in Pharmacy of Your Choice (POYC) will create a sustainable health outcome.

1.6 Malta Medicines Authority (MMA) and Pharmacy of Your Choice (POYC)

The Malta Medicines Authority (MMA) is the agency in charge of regulating, monitoring, and inspecting pharmaceutical goods and operations. The authority's function is to maintain the public's health in Malta by regulating pharmaceutical products (Bonnano & Flores, 2011). It guarantees that GDP is followed to ensure the quality of pharmaceutical goods throughout the EU. Pharmaceutical items are distributed through neighborhood pharmacies as well as hospital pharmacies. Patients utilizing the private medical system pay the full price for medications. The nearly 1,300 different medicines on the Government Formulary List are given free of charge to eligible patients in the public sector (Azzopardi-Muscat et al., 2017).

POYC is a national pharmaceutical service that was launched in 2008. The POYC scheme's central objective was to decrease long lines at Health Centre Government Dispensaries (Soler & Zarb, 2012). It is focused on delivering pharmaceutical service in Malta. A centralized logistics and distribution center supplies the pharmacies with

[8] Schalk-Zaitsev S. Engaging Stakeholders in Health System Assessments: A Guide for HAS Teams. Bethesda, MD: Health Systems 20/20 Project, Abt. Associates Inc. 2011.

government-purchased merchandise. Pharmacies are paid on a capitation basis every year. As a result, qualified patients can pick up their free medicines and medical devices from any community pharmacy that participates in the POYC program. In 2013, POYC reached its nationwide coverage goal (Azzopardi-Muscat et al., 2017). The POYC Unit provides the following services:

- POYC Call Center – client support team, 360° One Stop Shop Service Concept
- The POYC National Scheme
- The Domiciliary Delivery Scheme for People Over 70
- The National Scheme for Domiciliary Delivery of Heavy Pharmaceuticals
- The National Scheme for the Treatment of Exceptional and Named Patients
- The National Coeliac Program
- A National Technical Educational Outreach Program
- The Computer-Generated Prescription – Real-Time Update of Patients' Electronic Treatment Records
- The National Outpatients Data Bank is a database of outpatients.

To date the POYC Unit is providing its service to 180,000 patients.[9]

All pharmaceutical products for human use imported into Malta and the EU from non-EU and non-European Economic Area countries, including those intended for export outside the EU but not for the Maltese market, must be prepared in conformity with European Good Manufacturing Practice principles and guidelines (Kingham & Zammit, 2020). MMA inspects POYC and makes recommendations on the

[9] Government of Malta. Pharmacy of Your Choice National Outpatients' Services' Booklet [Internet]. Malta: Ministry of Health; 2017 [cited 2022 April 14]. Available from URL: https://deputyprimeminister.gov.mt/en/poyc/Pages/POYC-Outreach-Service-Programme/POYC-Outreach-Service-Programme.aspx

competencies of POYC workforce. In the supply chain management of pharmaceutical items, good distribution practice is an important activity. To comply with the updated EU GDP requirements, appropriate training of necessary healthcare workers is required. The knowledge and skills of the healthcare professionals are crucial to the success of health systems and services (Farrugia et al., 2018).

1.7 Philosophy of Patient-centred Care

The concept of patient-centred care has been around since the 1950s. Patient-centred care emphasizes the need of putting the patient's values and desires at the center of care delivery, both at the organizational and professional levels (Greene et al., 2012). Considering the absence of a standard definition, building a therapeutic connection, sharing power and responsibility, getting to know the individual, empowering the person, trust and respect, and communication are the common guiding components of patient-centred care found in the current literature (Ogden et al., 2017). According to an Institute of Medicine (IOM) report on the characteristics of health literate healthcare organization (HLHO), this shift can be achieved by encouraging healthcare organizations to integrate components of patient-centered care (Altin & Stock, 2016).

Patient-centred care has the potential to improve care quality and patient satisfaction while also lowering healthcare expenditures. Health policy makers are emphasizing the strategy to make the healthcare system more efficient in meeting the needs of patients at the primary healthcare level (Bogale et al., 2017). Patients want to be heard and seen as individuals with unique medical experiences and responses. In a community pharmacy setting, the pharmacist works with patients to ensure that their medication needs are met and must understand what it means to be patient-centred (de Oliveira & Shoemaker,

2006). The evolution of community pharmacists' clinical activities toward more patient-centred interventions has the potential to improve patient outcomes (Attard, 2018).

1.8 Continuing Professional Development

All healthcare workers must meet high standards, continuously striving to enhance and update their knowledge, skills, and capacities in order to be compliant and effective. To fulfill this demand, the healthcare workforce must continue to study and develop their skills. The implementation of continued professional development was adopted by professional authorities and organizations.[10] The Continuing Professional Development (CPD) is an important aspect of maintaining competence and cognitive value, as it helps to ensure that registered practitioners have up-to-date skills, information, and attributes for safe, current practice (Besson et al., 2020).

While most health professionals are educated in their particular profession's cohorts, there are compelling grounds for designing continuing professional development options in mixed groups. One of the strongest arguments in favor is that these healthcare professionals will almost certainly be forced to operate in interdisciplinary teams. Communication amongst professions, based on a similar language and understanding, is therefore essential for providing high-quality healthcare. Interprofessional education has been shown to be beneficial in establishing successful collaborative practice in healthcare, which leads to improved health outcomes and patient satisfaction[11] (Sabey et al., 2019). CPD is essential to build and maintain a high-quality workforce for any

[10] International Pharmaceutical Federation (FIP). Global Pharmacy Workforce Intelligence: Trends Report 2015. The Hague: International Pharmaceutical Federation; 2015.

[11] World Health Organization. Framework for Action on Interprofessional Education and Collaborative Practice. WHO;2010

organization (Sujon et al., 2022). The CPD process assists the learner in monitoring their own development on a continuous basis and it can be utilized to aid and support healthcare providers in developing their knowledge, skills, and competencies in emergency situations like COVID-19 pandemic to provide more patient-centred care (Kahaleh & Truong, 2021).

1.9 Online Learning and COVID 19

The coronavirus disease (COVID-19) was declared a worldwide pandemic on March 12, 2020, triggering a global emergency in all social realms. The CPD training has been jeopardized because it is heavily reliant on face-to-face interaction (Aabdien et al., 2022). Face-to-face training involves interaction among large group of learners. Participants interact with one another as well as with the trainer/s. By reducing direct interactions between persons, online learning, as recommended by the United Nations Educational, Scientific and Cultural Organization (UNESCO), can contribute to the prevention of the virus' spread. Instruction given on a computer or smartphone to promote learning is known as online learning.[12]

The opportunity to study from anywhere, at any time; the possibility of saving considerable amounts of money; the elimination of commuting on crowded buses or local trains; the flexibility to choose; and the ability to save time have all been emphasized in the literature[13] (Sadeghi, 2019). In these times of global health concerns, online learning is becoming increasingly important for education, since it allows students to stay in touch with classmates and lecturers while still attending lectures. The Institutes of Medicine

[12] United Nations Educational, Scientific and Cultural organization (UNESCO). Distance learning solutions [Internet]. UNESCO; [unknown date] [cited 2022 Feb 21]. Available from: https://en.unesco.org/covid19/educationresponse/solutions

[13] Bijeesh, N.A. Advantages and Disadvantages of Distance Learning. Indiaeducation .net [Internet] 2017. [cited 2022 April 1]. Available from https://www.indiaeducation.net/online-education/articles/advantages-and-disadvantages-of-distance-learning.html

(Kenefick et al., 2014) recommended for public health professionals to engage in continual lifetime learning.

Despite the pandemic, many people have been able to complete their education without interruption based on online learning (Ferri et al., 2020). Online trainings have the potential to remove hurdles that hinder participants from interacting face-to-face. However, some participants may be unable to access the online materials due to a lack of expertise on how to use virtual platforms and internet resources (Hooper et al., 2020, Alobuia et al., 2020; Kenefick et al., 2014).

1.10 Utilization of Google Classroom

Google Apps for Education helps to meet the growing demand for learning management system (LMS). It is a free collaborative toolkit that includes Google Docs, Drive, Emails, Hangouts, Sheets, Slides, Forms, and other features[14]. This ecosystem of applications, which was launched in October 2006 and is free for qualified schools, was designed to integrate with prominent educational institutions' existing mail and user account directory systems, as well as tools to help them migrate to Google Apps. The classroom is streamlined, user-friendly tool that assists teachers in managing coursework. Google Classroom allows teachers to form courses, assign tasks, grade and send feedback, and keep track of everything in one spot (Santos, 2021). It offers an excellent opportunity to promote blended learning and professional development (Iftakhar, 2016). It was created to let learners and training facilitators communicate, collaborate, organize, and generate

[14] Google for Education. [Internet] California USA: To help expand learning for everyone. Working to support education through our products, programs, and philanthropy; 2021 [cited 2022 Mar 25] Available from: https://edu.google.com/?modal_active=none

assessments. It is a digital tool that allows learners to participate in online training without having to meet in person. Training facilitators do have the option to upload learning materials, make announcements, and set assignments and quizzes. It facilitates the learner's learning process without requiring face-to-face contact with the training facilitator (Hussaini et al., 2020).

1.11 Aim of the Study

The study aimed to address the training needs for pharmaceutical good distribution practice of the POYC health workforce by instilling a patient-centred approach.

The objectives of the study are to:

1. determine the demographic characteristics of the POYC workforce such as current age, gender, total years in current position, total years in public service, and level of education;
2. identify the GDP training needs of the POYC workforce;
3. develop a patient-centred pharmaceutical GDP training course for the POYC workforce; and
4. evaluate the patient-centred training course for the POYC workforce.

Chapter 2
Methodology

This chapter outlines the study's research methodology. It includes research setting, research design, and methods required to complete the study.

2.1 Research setting

With long-term client-centric strategic goals that enable equal access to the government's free pharmaceutical services, the POYC Unit has effectively positioned itself as a prominent National Health Service provider.[15] The researcher is a Doctorate in Pharmacy student and a fellow of Malta Medicines Authority assigned to the POYC Unit at St. Luke's Hospital Pietà, where the research was carried out.

2.2. Research Design

The research investigation was divided into two phases (Figure 2.1). Phase 1 utilizes mixed method research design to integrate quantitative and qualitative data in addressing the core competencies and training needs of POYC workforce through a compiled and validated questionnaire.[16] Phase 2 is the development, validation, and pilot implementation of the patient-centred training course on pharmaceutical GDP.

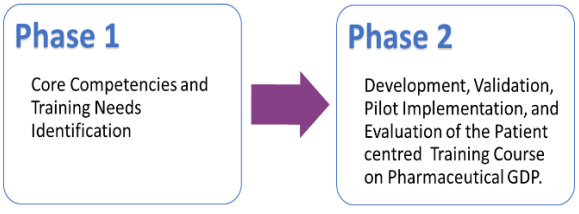

Figure 2.1 Flowchart of the Research Design

[15] Pharmacy of Your Choice (POYC) POYC Home [Internet]. Malta :POYC; [unknown date] [cited 2022 Feb 19]. Available from: https://deputyprimeminister.gov.mt/en/poyc/Pages/About%20Us.aspx

[16] Tong SF, Khoo EM, Tahir, NA, Idris I, Lee PY, Ismail IZ, Lee KR, editors. A step-by-step guide to primary care research. The Academy of Family Physicians of Malaysia, 2015.

2.3. Phase 1: Core Competencies and Training Needs Identification

The goal of this phase is to determine the main competencies and training needs of the POYC workforce. Figure 2.2 depicts the processes carried out during Phase 1.

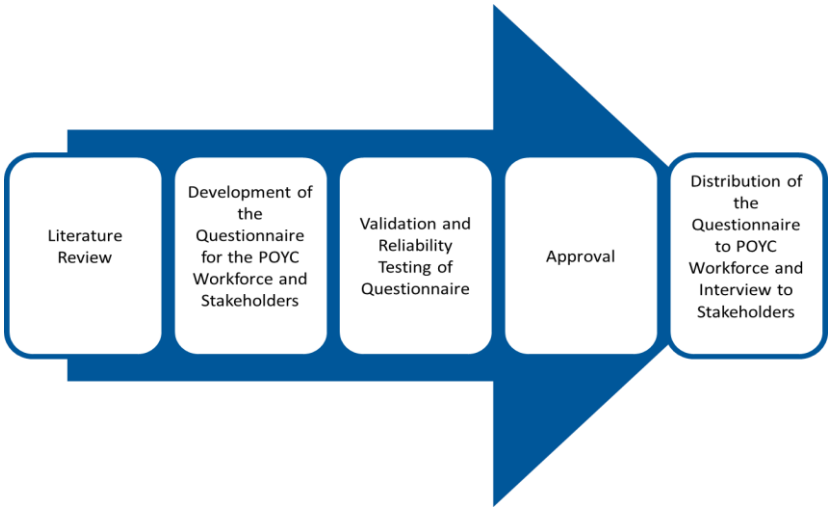

Figure 2.2 Flowchart for the Identification of the Core Competencies and Training Needs

2.3.1 Literature Review

Articles related to the research topic were reviewed to emphasize the key points of patient-centred training for pharmaceutical good distribution. The questionnaires were designed with the goal of capturing and assessing the core competencies of the services of the POYC workforce and the need of patient-centred pharmaceutical GDP training course. Pubmed/MEDLINE, HyDi-Hybrid Discovery, and Google Scholar were used to find articles related to the research topic. Patient-centred approach, good distribution practice for pharmaceutical products, education and training needs, online platforms, and continuous professional development were all used as key terms and phrases. GDP Standard Operating Procedures, as well as related books, dissertation, and reports were read and reviewed.

2.3.2 Development of the Questionnaires for POYC Workforce and Stakeholders

POYC respondents were given a self-administered research instrument called "*Patient-centred Training for Pharmaceutical GDP in POYC for workforce*."(Appendix X) The questionnaire is divided into two parts. The demographic characteristics, which include age range, gender, years in present position, years in public service, and degree of education, constitute the first section. The second section covers topics such as good distribution practice, organization and personnel, patient-centred care philosophy, and training and development.

For the stakeholders, a structured interview research instrument named "*Patient-centred Training for Pharmaceutical GDP in POYC for Stakeholders" (Appendix X)* was developed to capture viewpoints of the stakeholders for needs assessment to assist in designing the online training course. This questionnaire consists of 16 questions targeting the perceived roles of stakeholders and perception on quality of care through POYC services. Open-ended questions were used to prevent possible bias, elicit feedback from stakeholders on POYC workforce services, and to generate suggestions for training topics.

2.3.3 Validation of the Questionnaires

An email was sent to the following experts: POYC manager, community pharmacist, regulatory pharmacist, academic pharmacist, and hospital pharmacist soliciting their expertise for the validation of the "*Patient-centred Training for Pharmaceutical GDP in POYC for workforce* questionnaire (Appendix 2.1). The experts assessed the questionnaire content based on two criteria: relevance and clarity, and were instructed to recommend changes or deletion for any items that they felt were unclear. A Likert scale

was adopted to elicit a variety of responses from them. There are five possible responses: 5 = strongly agree, 1 = strongly disagree, and 3 = neutral. Internal consistency reliability for the questionnaire was determined using Cronbach's alpha coefficient.[17]

For the stakeholder's questionnaire, entitled: "*Patient-centred Training for Pharmaceutical GDP in POYC for Stakeholders"* the same panel of experts provided their professional opinion, knowledge, and appraisal of the questionnaire content and format. The comments, suggestions, and recommendations were taken into consideration, and the questionnaires were modified accordingly.

2.3.4 Approvals of POYC Administration and UREC

The researcher sought the approval to conduct research in POYC from the Chief Executive Officer of POYC (Appendix 2.2) and the University of Malta Research Ethics Committee (Appendix 2.3).

2.3.5 Distribution of the Questionnaire to POYC respondents

The 140 employees at POYC were emailed the final version of the "Patient-Centred Training for Pharmaceutical GDP in POYC for POYC Workforce" questionnaire (Appendix 2.4). In order to deliver the questionnaire to the respected email addresses of the respondents, the researcher enlisted the help of the liaison person in the POYC office of the Chief Executive Officer. The officer followed up the first initial email by sending

[17] Croasmun JT, Ostrom L. Using Likert-Type Scales in the Social Sciences. Journal of Adult Education 2011;40(1):19-22.

2 separate reminder emails in order to gain additional responses from the POYC staff. emails twice.

2.3.6 Distribution of the Questionnaire to Stakeholders

The stakeholders questionnaire entitled “Patient-centred Training for Pharmaceutical GDP in POYC for Stakeholders” (Appendix 2.5) was distributed to four stakeholders: one patient enrolled in POYC scheme, one clinical pharmacist from Karin Grech Hospital (KGH), one hospital pharmacist of Mater Dei Hospital (MDH), one community pharmacist. The questionnaire takes approximately 30 to 45 minutes to complete. The discussion aimed to collect the views of the stakeholders on their perceived roles and perception on the quality of care through POYC services. A thematic analysis was generated from the data collected after the interview.

2.4 Phase 2: Online Training Course Development, Validation, Pilot Implementation, and Evaluation

In Phase 2, the online course material for the POYC workforce was developed, validated, and piloted. As part of the process, the learning objectives, rationale and benefits, course material, quiz, and mode of delivery were all prepared. Following expert content validation, a trial deployment of the online course was carried out. This phase concluded with the participants' evaluation of the online course. Figure 2.3 depicts the Phase 2 procedures.

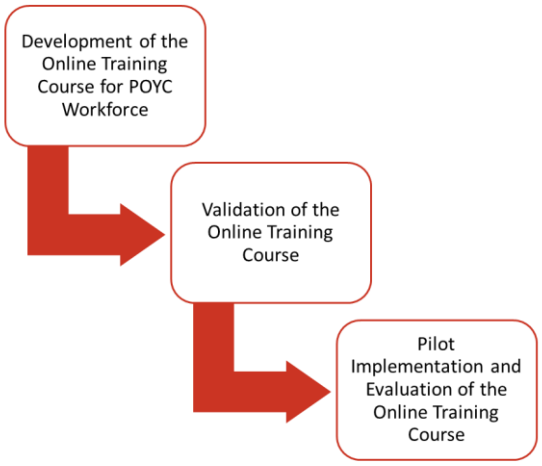

Figure 2.3 Flowchart of the Online Training Course Development, Validation, Pilot Implementation, and Evaluation

2.4.1 Online Training Course Development and Validation

Drawing from the Phase 1 data, the researcher developed the online training course. The training was based on reviews of the literature and recommendations from WHO GDP for Pharmaceutical Products,[18] European Commission (EC) Guidelines on GDP of Medicinal Products for Human Use,[19] and Domains of Health Care Quality.[20] The online training course is *The Roadmap to Patient-centred Care Good Distribution Practice for Pharmacy of Your Choice Workforce.* A timeframe for each topic was included in each content. The course content was uploaded to Google Classroom in PowerPoint pdf format, with short clip videos, assessment, and course evaluation. Google Classroom is an online learning platform. Experts from Central Procurement and Supply Unit (CPSU),

[18] World Health Organization(WHO). TRS 1025 -Annex 7: Good storage and distribution practices for medical products [Internet] GENEVA: WHO; 2020 [cited 2022 Mar 12] Available from https://www.who.int/publications/m/item/trs-1025-annex-7-gdp-medical-products

[19] European Medicines Agency (EMA). Guidelines on principles of GDP of active substance for medicinal products for human use [Internet] The Netherlands: EMA; 2015 [cited 2022 Mar 12] Available from https://www.ema.europa.eu/en/human-regulatory/post-authorisation/compliance/good-distribution-practice

[20] Six Domains of health Care Quality. [Internet] Content last reviewed November 2018. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/talkingquality/measures/six-domains.html

MMA and academia were given the hyperlink to the course site to validate the online training course. An adapted online course design evaluation form was utilized by the experts to analyze the online training course (Appendix 2.6)[21]. Before launching the online training course experts' comments, recommendations, and suggestions were considered and implemented.

2.4.2 Online Training Course Pilot Implementation and Evaluation

Training and development improve efficiency and establish a systematic approach in carrying out responsibilities and tasks. Furthermore, it bridges the gap between work requirement and employees present specification. To implement the online training course, the researcher sought the assistance of the liaison officer of the POYC administration in the dissemination of the Google Classroom hyperlink and class code *(3pfcsyo)* to the 16 POYC workforce who were enrolled in the course site. The learners had one week to complete the four-hour online course. The facilitator established the time limit for each lesson, but the learner's phasing governed the learning duration. Assessments and course evaluation were part of the package. The process of assessing the worth or quality of a training course is referred to as "evaluation." It simply means deciding whether or not the activity being assessed is valuable according to predefined criteria. Training evaluation entails assessing the impact of training on the participants' performance and behaviour.[22] As a result, learners were asked to rate the online training

[21] Guidelines Online Course Design Rubric Based on the Quality Matters 05/06 Rubric NMSU Teaching Academy [Internet] New Mexico: 2016 [cited 2022 Mar 21] Available from: http://hpdr.education.nmsu.edu/files/2013/07/online-course-design-rubric-.pdf

[22] Choudhury GB, Sharma V. Review and comparison of various training effectiveness evaluation models for R & D Organization performance. PM World Journal, VIII (II). Retrieved from https://pmworldlibrary. net/wp-content/uploads/2019/02/pmwj79-Feb2019-Choudhury-Sharma-comparison-of-training-effectiveness-models-for-rd. pdf. 2019.

course (Appendix 2.7). To interpret the results, the total mean of the online training course evaluation was employed.

The following is the interpretation matrix that the researcher used:

Mean Level	Description	Interpretation
4.21 – 5.00	Very High	The online training course participants were always satisfied
3.41 – 4.20	High	The online training course participants were usually satisfied
2.61 – 3.40	Moderate	The participants occasionally expressed satisfaction with the online training course
1.81 – 2.60	Low	The participants were very dissatisfied with the online training course
1.00 – 1.80	Very Low	The online training course participants were never satisfied

Chapter 3

Results

This chapter puts together the information obtained throughout the dissertation. The obtained data were from the following:

- POYC workforce and stakeholder's questionnaires validation
- POYC workforce survey
- stakeholder's survey
- The online training concept
- online training validation
- online training evaluation

3.1 Phase 1: The Results of POYC Workforce and Stakeholder's Research Instruments

Phase 1 outcomes included the validation of the POYC workforce and stakeholder questionnaires, as well as the measure of internal consistency (Cronbach's alpha) of the POYC workforce questionnaire and their implementations.

3.1.1 Validation of the Two Questionnaires

The five experts' perspectives were sought, and the questions were changed in response to their comments and ideas. Questions two through five in Part 1 (Good Distribution Practices) were rewritten based on experts' advice. Question 11 was removed from Part 2 (Organization and Personnel) because it was redundant with question 15. Four questions remained unchanged, while others were rewritten. Eight questions were rewritten from the 15 questions in Part 3 (Philosophy of Patient-centred Care), and six questions were revised from the 11 questions in Part 4 (Training and Development). The experts' recommendations and ideas for the stakeholder questionnaire are listed in Table 3.1. Questions two, three, and four in section A (Perceived Roles of Stakeholders) were

rephrased. Question one has remained unchanged, however question five has been removed. Question one was rewritten, question two was removed, and questions three, four, and five were rewritten in section B (Perception on Quality of Care through POYC Services). Question six was reworded and reintroduced as Question two.

Table 3.1 POYC Stakeholders Questionnaire Validation

Section A: Perceived roles of Stakeholders

Questions	Recommendations	Action Taken
1 Please describe your organization		(Question No. 1)
2 Please mention your field of interest/activities/	Rephrase to "What is your specialization or area of expertise within your organization?"	Suggestion was carried out (Question No. 2)
3 What is your role in the provision of healthcare services in Malta?	Rephrase to "What is your function in the provision of healthcare services in Malta?	Suggestion was carried out (Question No. 3)
4 What enables you in carrying out your role/s	Rephrase to "What is your perspective regarding the learning need of the following areas: Good Distribution Practice within POYC Organization and Personnel of POYC Philosophy of Patient-centred Care within POYC Training and Development of POYC Workforce	Suggestion was carried out (Question No.4)
5 What major challenges are you facing/carrying in your role/s?	Delete	Suggestion was carried out
Section B: Perception on quality of care through POYC services		
Questions	Recommendations	Actions
1 What do you think about the quality of healthcare services in Malta	Rephrase to "How do you see POYC scheme in relation to the delivery of pharmaceutical services in Malta?"	Suggestion was carried out (Question No. 1)
2 Where do you think people turn for trusted health information	Delete	
3 What do you think about the healthcare services offered by the POYC workforce?	Questions 3 and 4 are put together and rephrase to "How relevant is the POYC scheme in terms of the delivery of services to its intended customers?"	Suggestion was carried out (Question No.3)
4 How essentials is POYC for you or your organization?		Suggestion was carried out
5 How do you view POYC's healthcare services during COVID-19 pandemic?	Rephrase the question to "How did the POYC scheme perform relative to the COVID 19 pandemic?"	Suggestion was carried out (Question No. 4
6 How do you rate the way in which POYC communicate its public health services in terms of: accuracy, usefulness, timeliness accessibility/technology friendly, in a language you can use/understand	Put forward to no.2 and rephrase to" Discuss the performance of your organization in relation to POYC scheme in terms of the following: Safety/Reliability (Provisions ensuring the safety of the pharmaceutical products for source to consumer Effectiveness/Usefulness (POYC services giving the most effective pharmaceutical needs, ensure availability and effective handling of medicines) Patient-centredness (POYC scheme's policies that improves patient's experience) Timeliness of delivery of services (Efficiency of the provision of the services)	Suggestion was carried out (Question No. 2)

3.1.2 Result of Cronbach's Alpha

The correlation was done between the responses of different items of the POYC workforce questionnaire measuring the same concept from the respondents and the results are analysed using Cronbach alpha coefficient. The finding shows that Cronbach's alpha is equal to 0.923 which is greater than the limit of 0.7, suggesting that the workforce questionnaire has internal reliability.

3.1.3 Demographic Profile of the POYC Respondents

"The Patient-centred training for Pharmaceutical GDP in POYC for Workforce" questionnaire was sent to a total of 115 employees. Twenty-seven POYC employees, including four from the Client Support team, five from the Drugs of Dependence and Abuse and Named Patient Basis department, six from the Order section, seven from the Audit office, and five from the Responsible Person's office, responded to the email and completed the questionnaire. Twenty-two respondents were female and five were male, as shown in Table 3.3, which describes the respondents in terms of their demographic characteristics. The majority of the comments, according to the age range, were made by those between the ages of 36 and 40. The data also showed that most POYC respondents had been in their current positions for 0–5 years, with 6–10 years following. Seven of them had worked in the public sector for 0–5 years, while the other seven had done so for 11–15 years.

Table 3.2 Description of Respondents According to Demographic Characteristics

		Number
Gender	Male	5
	Female	22
Age Range	20-25	1
	26-30	2
	31-35	3
	36-40	7
	41-45	3
	46-50	5
	51-55	4
	56-60	1
	60-65	1
Years in Current Position		
	0-5	12
	6-10	10
	11-15	3
	16-20	1
	21-25	0
	26-30	0
	31-34	0
	35-40	1
Years in Public Service		
	0-5	7
	6-10	5
	11-15	7
	16-20	1
	21-25	0
	26-30	5
	31-34	0
	35-40	2
Level of Education		
	Undergraduate diploma	5
	Matriculation certificate	4
	General education	1
	Bachelor’s degree	7
	Master’s degree	7
	Doctoral degree	2
	Other	1

3.1.4 POYC Workforce on GDP Training

This sections describes the results obtained regarding the training needs identified from the *"The Patient-centred training for Pharmaceutical GDP in POYC for Workforce*" questionnaire. Figure 6 demonstrates that GDP training (Mean=4.304, Std Dev=0.318) is the most important of the four variables, followed by Organization and Personnel (M=4.143, Std Dev=0.223). The demand for Patient-centred Care Philosophy (M=4.116, Std Dev=0.158), followed by Training and Development (M=4.111, Std Dev=0.123) is the last. This finding assists the researcher in establishing the content of the online training course (Appendix 2.9).

Figure 3.1 The four variables in the POYC Workforce Section Two Survey do not significantly differ from one another.

3.1.5 Stakeholder Questionnaire

Study findings from the Put in the name of the stakeholders questionnaire, uncovered five key essential themes: improving pharmaceutical services through efficient patient access and comfort, quality performance, a fully integrated system of medicine prescription from

hospital to community pharmacy, a holistic and community-based patient-centric approach in healthcare services, consistency of medicine delivery, and preparedness to handle emergency situations such as COVID-19. Table 3.4 summarizes the main themes and concepts gathered from the interview.

Table 3.3 Themes and Core Ideas Extracted from Key Informant Interview

Core Ideas from Stakeholders	Codes	Essential Themes
"POYC facilitates the delivery pharmaceutical services, easier for the patients to access his medication, ensure all patient access to the pharmacy, and that the pharmacy is closer to where they live"	Improved delivery of pharmaceutical services	Enhance pharmaceutical services through efficient patient access and comfort
"Patients queue to collect their medicines before but at now, patients have a choice where to collect their medications from their preferred community pharmacy"	Improved turnaround time of pharmaceutical services	
"Safety storage of medicines, daily temperature monitoring, stock rotation to prevent expiry"	Improved quality assurance of medicines	Quality assurance
"When we discharge patient, we direct them to the community pharmacist to ensure seamless care." ***"Patients were issued with discharged letter from doctors with prescription and application for schedule V to ensure safe use of medication and access to their medicines, everything is sorted out for the patient"***	Efficient transition of patient care	A fully integrated system of medicine prescription from hospital to community pharmacy
"It is more comfortable to collect the pills in the community pharmacy (POYC scheme) it builds relationship with community pharmacist." ***"I get the best possible care."*** ***"Pharmacist give counselling and help in the effective use of medicines, most of the patient during discharge we always refer to the community pharmacist to continue the healthcare service."***	Holistic approach in dispensing medicines to the patients	Holistic and community-based patient centric approach in healthcare service
"Deliveries are done weekly. There are times when medicine is requested, they are received before due but sometimes we don't."	A system to serve the patients on time	Consistency of medicine delivery and preparedness to handle emergency situation like COVID-19 pandemic
"We don't have to queue to get our medicines during this COVID. We phone the pharmacy, and they prepare the medicine."		

3.2 Phase 2: Development, Validation, Pilot Implementation, and Evaluation of the Online Training Course

Phase 2 outcomes include the development of an online training course, validation, pilot implementation of the online training course, and evaluation.

3.2.1 Online Training Course Development and Validation

Figure 3.2 shows the online training course "Roadmap to Patient-Centred Care Good Distribution Practice for Pharmacy of Your Choice Workshop Course", which is available in Google Classroom. The topics covered include Introduction to Good Distribution Practices, Quality Management, Dimensions of Healthcare Quality, Patient-Centred Care, Personnel, Premises, and Equipment, Documentation, Operations, Transportation and Logistics, Containers, Packaging, and Labeling, Complaints, Returns, and Recalls.

Figure 3.2 Online Training Course Topics

3.2.2 Result of the Online Training Course Validation

Three experts from CPSU, MMA, and academia validated the Google Classroom course site, as indicated in Table 3.5. Design and Delivery of Training, participant learning assessment and evaluation, organization and design, facilitators leveraging learner feedback, and innovative course delivery using technology are among the validation standards for the online training course. The experts gave their approval to all the criteria. Their suggestions and recommendations were collated and taken into consideration (Appendix 2.10).

Table 3.4 Online Training Course Validation

Adapted from: Guidelines Online Course Design Rubric
New Mexico State University

Organization and Design	Validator 1	Validator 2	Validator 3	Total Yes	%
The course is well-organized and simple to follow. Learners can clearly grasp all course components and organization.	Yes	Yes	Yes	3	100%
The aesthetic design clearly conveys and communicates course information throughout the course.	Yes	Yes	Yes	3	100%
The course addresses accessibility difficulties throughout.	Yes	Yes	Yes	3	100%
Design and Delivery of Training					
The course provides several possibilities for interaction and communication between learners, between learners & content, and between facilitators.	Yes	Yes	Yes	3	100%
The learning objectives have been specified, and the learning activities have been explicitly integrated.	Yes	Yes	Yes	3	100%
To improve learning and accessibility, the course includes a variety of visual, textual, and kinesthetic exercises.	Yes	Yes	Yes	3	100%
Participant Learning Assessment and Evaluation					
The instructional activities, learning objectives, and assessment activities are all highly correlated.	Yes	Yes	Yes	3	100%
The course includes a variety of timely and effective tasks designed to measure learner readiness for course material and style of delivery.	Yes	Yes	Yes	3	100%
Innovative Course Delivery Using Technology					
The course optimizes internet connectivity and efficiently involves participants in the learning process in several ways.	Yes	Yes	Yes	3	100%
The course makes use of a number of digital tools to enhance communication and learning.	Yes	Yes	Yes	3	100%
Facilitators Use Learners Feedback					
The facilitator provides numerous options for learners to provide comments on the usability of online technologies and course accessibility.	Yes	Yes	Yes	3	100%
The facilitator provides numerous opportunities for learners to provide comments on course material.	Yes	Yes	Yes	3	100%

3.2.3 Result of Online Training Course Pilot Implementation

Sixteen people were chosen to participate in the online training course's pilot testing. Seventy percent of respondents (n=12) were able to complete the pilot deployment of the online training course, whereas 25% (n=4) were unable to access the course site due to personal or technical issues.

3.2.4 Result of Online Training Course Evaluation

All 12 respondents completed the online training course evaluation forms. The overall mean is 4.45 with a "Very High" description.

Chapter 4

Discussion

This chapter contains the major findings, recommendations, and conclusion of the current research.

4.1 Addressing Patient-centred Needs

People with a variety of skill sets, both professionals and non-professionals, make up POYC's workforce. Effective pharmaceutical services might be offered at POYC owing to the workforce that has been built via strong continuous professional development. The POYC workforce had to assume new roles as a result of their changing responsibilities and emphasis on patient-centred care (Amar, 2020).

4.1.1 Prioritizing GDP with patient-centred care philosophy

The result of the POYC workforce section two survey shows that Good Distribution Practice training received the highest mean score (M=4.304) among the four variables. And per the researcher's interpretation matrix, this score falls between 4.20 and 5.00 of the Mean level, indicating that it is extremely important to learn. As a result, POYC respondents were particularly interested in learning more about GDP. In the supply chain management of pharmaceutical ingredients, Good Distribution Practice is extremely important (Kumar & Jha, 2015). From the manufacturer's facilities to the person dispensing or delivering medicines directly to the patient or his/her agent, the GDP requirements are designed to be applicable in any aspect of medicine storage and delivery. At every stage of the supply chain, Personnel should be thoroughly aware and instructed in their duties and responsibilities. The training should be guided by written SOPs. Employees should receive job-specific training at the start and throughout their careers. Every component of the GDP system is crucial in maintaining the quality of the distribution chain and adhering to GDP will ensure that the distribution chain is regulated,

resulting in the quality and integrity of the pharmaceutical goods, and preventing public health harm.[23]

Organization and Personnel are the second component that respondents had a moderate need to learn. The degree to which an employee feels loyal to the company is referred to as organizational commitment (Currivan 1999; Kose, 2017). Employees' commitment indicates a stronger attachment to organizational objectives, identification, integration with organization, acceptance of organizational aims and principles, and extraordinary efforts for the benefit of the organization (Allen & Meyer, 1990; Kose, 2017).

The third variable that respondents somewhat needed to understand was Philosophy of Patient-centred Care. Even though this parameter is ranked third, the researcher places considerable emphasis on it, as indicated in the online training course, because patient-centred care ideas have permeated and been integrated into healthcare systems. Furthermore, patient-centred care has been broadened to include a culture transformation in healthcare delivery (Fix et al., 2018). "It's all about relationship in healthcare" (Paris, 2015). POYC must manage patient expectations and bridge the gap between the workforce and patients in order to improve patient's experiences with quality healthcare. As a result, *The Roadmap to Patient-centred Care Good Distribution Practice for Pharmacy of Your Choice* online training course was developed.

Even though training and development were the least significant of the four variables, the researcher would like to highlight that it allows organizations to meet their objectives and

[23] Guidelines on principles of Good Distribution Practice of active substances for medicinal products for human use [Internet]. Luxembourg: OJ C 2015 [2022 April 24] Available from https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:52015XC0321(01)

improve their services (Salas, 2012). It will assist the organization in maintaining a competitive advantage by educating their personnel on a regular basis (Salas, 2012).

4.1.2 Community-based patient centric approach in drug distribution

The essential themes identified in the key informant interviews include: quality assurance, improving pharmaceutical services through improved patient access and comfort, a fully integrated system of medicine prescription from the hospital to community pharmacy, a holistic and community-based patient-centric approach in healthcare service, and a comprehensive and community-based patient-centric approach in healthcare service.

4.1.2.1 Quality assurance

We must consider quality assurance to be essential. It is a prerequisite that encapsulates our commitment and duty as a society, and specifically as healthcare practitioners (Donabedian, 1986). A safe and healthy workplace is something that POYC is committed to providing.[24] Workforce members at POYC are accountable and responsible for adhering to GDP principles that are pertinent to their job responsibilities as doing so ensures that quality assurance standards were met.

4.1.2.2 Enhance pharmaceutical services through improved patient access and comfort

In a study published in 2020 by Rasheed et al., the participants stated that community pharmacies are more convenient for healthcare consumers than primary healthcare clinic since they do not require an appointment or a long wait. The study of Cassar (2020) reiterated that POYC scheme allows patients to pick up their free medication in their

[24] Pharmacy of Your Choice (POYC) POYC Home [Internet]. Malta :POYC; [unknown date] [cited 2022 Feb 19]. Available from: https://deputyprimeminister.gov.mt/en/poyc/Pages/Corporate%20Social%20Responsibility/Workplace-Health-Safety.aspx

chosen community pharmacy, reducing long lines and waiting times and providing patients with direct access to their medications. Soler and Zarb (2012) also pointed out that the major goal of the POYC initiative was to minimize long lines at health centre government dispensaries.

4.1.2.3 A fully integrated system of medicine prescription from the hospital to community pharmacy

The national Information and Communication Technology strategic plan for the years 2014-2020 is known as Digital Malta 2020. The approach will improve citizens' digital capabilities, allowing them to access healthcare and social services more effectively and efficiently.[25] The Computer-Generated Prescriptions is an electronic application created by the POYC Unit and implemented in primary healthcare prescribing clinics to allow for electronic access to the most up-to-date patient prescription information at the point of care.[26] The CARE system in POYC made the approval process easier by allowing prescribers to submit Schedule V electronically (Ayran, 2021), ensuring and maintaining a consistent transfer of patient care.

4.1.2.4 Holistic and community-based patient centric approach in healthcare service

The POYC scheme is an example of a universal health coverage that allows community pharmacy pharmacists to provide comprehensive medication management, health education, and drug information to patients while also improving system efficiencies

[25] Bezzina F, Camilleri E, Marmarà V. Public Service Reforms in a Small Island State. Springer International Publishing; 2021.

[26] Government of Malta. Pharmacy of Your Choice National Outpatients' Services' Booklet [Internet]. Malta: Ministry of Health; 2017 [cited 2022 April 27]. Available from URL: https://deputyprimeminister.gov.mt/en/poyc/Pages/POYC-Outreach-Service-Programme/POYC-Outreach-Service-Programme.aspx

through quality use of medicine (Hermansyah et al., 2018). This approach also permits the community pharmacist to play a larger role in primary healthcare (Magno, 2021).

4.1.2.5 Consistency of medicine delivery and preparedness to handle emergency situation like COVID-19 pandemic

The POYC scheme is one of the Ministry of Health's most visible services which guarantees that everyone has equal access to free pharmaceutical services provided by the government and are carried out rapidly and effectively in accordance with GDP standards.

Patients were able to pick up their medicine on time owing to a shift in the POYC medicines approval procedure (Ayran, 2021) and prompt delivery of the medicine in the community pharmacy during the COVID-19 crisis.

4.1.3 Implementation of an online platform for training

Because of the COVID-19 crisis, the researcher was inspired to use the Google Classroom online platform and sought the POYC liaison officer's assistance in disseminating the Google Classroom hyperlink to the 16 respondents in the deployment of the online training course "The Roadmap to Patient-centred Care Good Distribution Practice for Pharmacy of Your Choice Workforce." Only 70% (n=12) of those who received the hyperlink were able to access the course site; the remaining four were unable to do so for a variety of reasons, including the usage of an email that was incompatible with Google Classroom. The task was completed in one week by the responders.

4.1.4 A feasible training and development evaluation option

Twelve respondents completed the evaluation of the online training course. The total average rating is 4.45, which is considered "Very High." The responders appeared to be impressed by the online training course. Their satisfaction was influenced by the creative

course design, the well-organized flow of the instructional materials with interactive links to other resources, and the precise and succinct course objectives. These results demonstrate that the online training course "Roadmap to Patient-Centred Care Good Distribution Practice for Pharmacy of Your Choice Workforce" is specifically designed to meet the workforce training and development requirements of POYC.

4.2 Limitations of the Study

The General Data Protection Regulation (GDPR) prevented the researcher from sending the questionnaire directly to the email addresses of the POYC employees, which led to a low response rate from the workforce. This is just one of the research's limitations. Another is the small number of POYC workforce respondents to the research instrument for the POYC Workforce. The questionnaire was given to the POYC liaison officer, who distributed it to the POYC workforce's email addresses, and a follow-up was done to get more responses. However, it turned out that fewer questionnaire responses were gathered because numerous staff members had to work from home due to COVID-19 crisis constraints. The tiny sample size of the online training course trial rollout was another drawback. Because fewer people had responded to the email and given URL, the researcher was unable to adequately follow-up with those who had been asked to engage in the online training due to COVID-19 limitations. During the execution and evaluation of the training course, only 12 out of the 16 POYC responders finished it, while four of them were unable to do so due to technical reasons.

4.3 Recommendations of the Study

Provide a greater emphasis on patient-centred care themes and develop case studies to assist participants in strengthening patient-centred abilities.

Improve the course site by adding a discussion forum where participants can discuss any interaction and communication issues that may arise during the course and considering that online participants may feel lost in the online environment, formative feedback on their progress should be offered in the course site.

For the *"Roadmap to Patient-centred Care Good Distribution Practice for Pharmacy of Your Choice Workforce"* online training course to have employment and academic relevance, it needs to be accredited.

4.4 Conclusion

This research output offers opportunities for POYC health workforce to improve the quality of patient care with conformance to GDP guidelines. According to the research of Vijn et al. (2018), one popular way to fostering patient-centred care is to teach care providers in patient-centred attitudes and competencies.

A GDP training embedded with patient-centered philosophy may improve the responsiveness of POYC workforce to the interpersonal, psychosocial and cultural aspects of health care.

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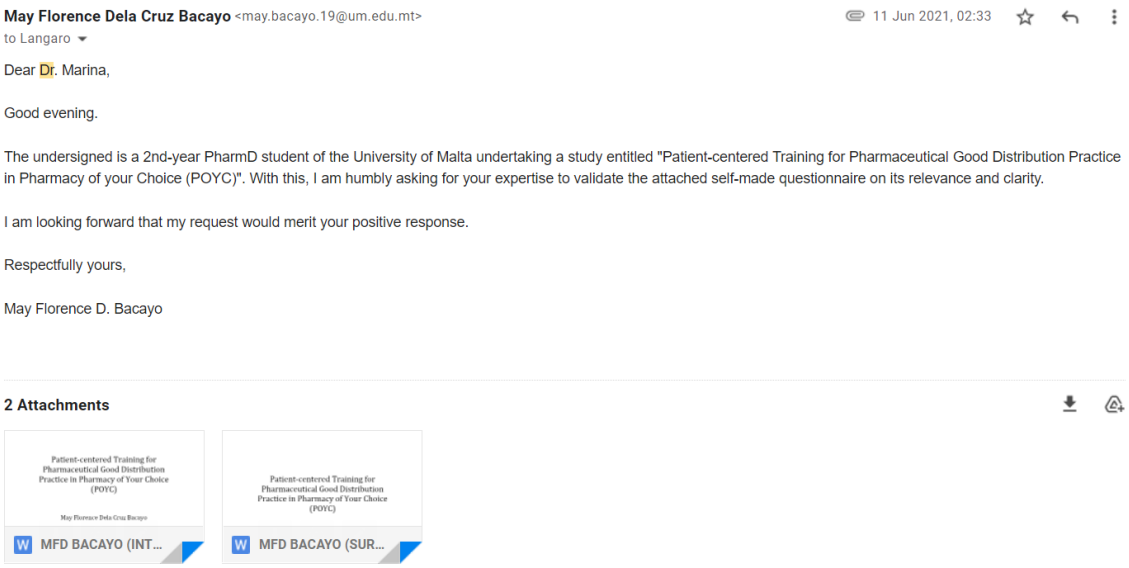
APPENDICES

Appendix 2.1 Sample Letter for the Questionnaire Validation



May Florence Dela Cruz Bacayo <may.bacayo.19@um.edu.mt> 11 Jun 2021, 02:33

to Langaro

Dear Dr. Marina,

Good evening.

The undersigned is a 2nd-year PharmD student of the University of Malta undertaking a study entitled "Patient-centered Training for Pharmaceutical Good Distribution Practice in Pharmacy of your Choice (POYC)". With this, I am humbly asking for your expertise to validate the attached self-made questionnaire on its relevance and clarity.

I am looking forward that my request would merit your positive response.

Respectfully yours,

May Florence D. Bacayo

2 Attachments

Patient-centered Training for Pharmaceutical Good Distribution Practice in Pharmacy of Your Choice (POYC)

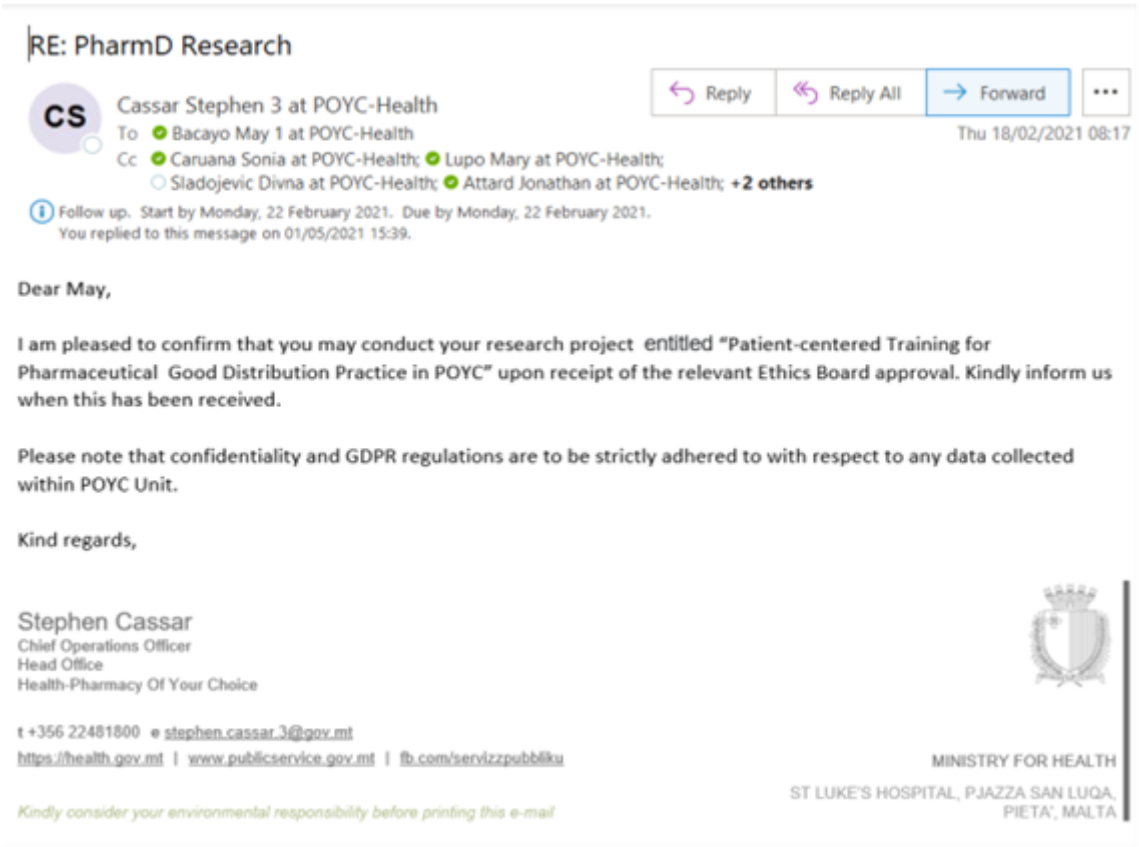
May Florence Dela Cruz Bacayo

MFD BACAYO (INT...

Patient-centered Training for Pharmaceutical Good Distribution Practice in Pharmacy of Your Choice (POYC)

MFD BACAYO (SUR...

Appendix 2.2: Pharmacy of Your Choice (POYC) Approval



RE: PharmD Research

Reply | Reply All | Forward | ...

CS Cassar Stephen 3 at POYC-Health

To Bacayo May 1 at POYC-Health

Cc Caruana Sonia at POYC-Health; Lupo Mary at POYC-Health; Sladojevic Divna at POYC-Health; Attard Jonathan at POYC-Health; **+2 others**

Thu 18/02/2021 08:17

Follow up. Start by Monday, 22 February 2021. Due by Monday, 22 February 2021.
You replied to this message on 01/05/2021 15:39.

Dear May,

I am pleased to confirm that you may conduct your research project entitled "Patient-centered Training for Pharmaceutical Good Distribution Practice in POYC" upon receipt of the relevant Ethics Board approval. Kindly inform us when this has been received.

Please note that confidentiality and GDPR regulations are to be strictly adhered to with respect to any data collected within POYC Unit.

Kind regards,

Stephen Cassar
Chief Operations Officer
Head Office
Health-Pharmacy Of Your Choice

t +356 22481800 e stephen.cassar.3@gov.mt
https://health.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku

Kindly consider your environmental responsibility before printing this e-mail

MINISTRY FOR HEALTH
ST LUKE'S HOSPITAL, PJAZZA SAN LUQA, PIETA', MALTA

Appendix 2.3: University Research Ethics Committee (UREC) Approval

FRECMDS_2021_147 - ID: 9070_09062021_May Florence Dela Cruz Bacayo - may.bacayo.19@um.edu.mt

FACULTY RESEARCH ETHICS COMMITTEE Tue, 15 Jun, 21:41 (23 hours ago)

to me, Louise, Anthony

Dear May,

Since your self-assessment resulted in no issues being identified, FREC will file your application for record and audit purposes but will not review it.

Any ethical and legal issues including data protection issues are your responsibility.

Kindly **confirm** that you sent all the documents which you attached to the UREC form together with other documents related to your study.

Kindly note that these documents are also requested for audit purposes.

Thanks and regards,
Annalise

L-Università ta' Malta

Annalise Mallia Duca | Secretary

Faculty Research Ethics Committee
Faculty of Medicine and Surgery
Medical School, Mater Dei Hospital
+356 2340 1803

Appendix 2.4: Pharmacy of Your Choice Workforce Questionnaire

TITLE: Patient-centered Training for Pharmaceutical GDP in POYC for POYC Workforce

Date: _____

Dear Participant,

Good day.

I would like to invite you to be my respondent in my dissertation study entitled: "Patient-centered Training for Pharmaceutical Good Distribution Practice in Pharmacy of Your Choice (POYC)". I am currently enrolled in the Doctorate in Pharmacy at University of Malta and I'm in the process of writing my dissertation. The aim of the research is to address the training needs for pharmaceutical good distribution practice of Pharmacy of your Choice health workforce instilling an enhanced patient centered approach. This research project is under the supervision of Dr. Louise Grech and Prof. Anthony Serracino-Inglott and has been approved by the Faculty of Medicine and Surgery Research Ethics Committee.

Your participation in this dissertation research project is completely voluntary. There are no known risks to participation beyond those encountered in everyday life. Your responses will remain confidential and anonymous. Data will be processed in accordance with the General Data Protection Regulations (GDPR) of the *Data Protection Act*, Chapter 586 of the Laws of Malta. Data from this research will be treated with confidentiality and reported as a collective combined total data. No one other than the researcher will know your individual answers to this questionnaire. If you agree to participate in this research project, please answer the questions on the questionnaire as best you can. If you have any questions, feel free to contact me **at may.bacayo.19@um.edu.mt** and my mobile number is **+356 79230107**.

Thank you so much for your assistance in this important endeavor.

Respectfully yours,

May Florence Dela Cruz Bacayo

Section 1: Demographics (Tick the corresponding answer)

Age Range:

20 – 25	_____	41 – 45	_____
26 – 30	_____	46 – 50	_____
31 – 35	_____	51 – 55	_____
36 – 40	_____	56 – 60	_____

Gender : Male _____ Female _____ Other _____

Years in current position :

0 – 5	_____	21 – 25	_____
6 – 10	_____	26 – 30	_____
11 – 15	_____	35 – 40	_____
16 – 20	_____	41 – 45	_____

Years in public service:

0 – 5	_____	21 – 25	_____
6 – 10	_____	26 – 30	_____
11 – 15	_____	31– 35	_____
16 – 20	_____	36 – 40	_____
		41 – 45	_____

Level of education:

General Education	_____
Matriculation Certificate	_____
Undergraduate Diploma	_____
Bachelor's Degree	_____
Master's Degree	_____
Doctoral Degree	_____
Other	

Section 2:

<u>Instructions for Part 1 to Part 4</u>: Please categorize the following duties/task or situations using the Likert scale.

1- **Not at all needed to learn**
2- **Slightly needed to learn**
3- **Somewhat needed to learn**
4- **Moderately needed to learn**
5- **Extremely needed to learn all**

PART 1: Good Distribution Practice	**1**	**2**	**3**	**4**	**5**
i. The transfer of GMP philosophy through the distribution of pharmaceutical materials.					
ii. The level of quality of a pharmaceutical product is maintained throughout the distribution network as a goal of the GDP.					
iii. The movement of medicinal product from the manufacturer to the end user thru GDP.					
iv. The application of GDP rules towards regular distribution chain so the risk of adverse and possible serious effects for patients is minimized.					
v. The rules applicable to all department of POYC that distribute, store, and transport medicinal products thru GDP.					
PART 2: Organization and Personnel	**1**	**2**	**3**	**4**	**5**
i. The qualification of POYC workforce using GDP principles.					
ii. Sufficiency in the number of POYC workforce qualified for GDP operations.					
iii. Workforce (including administrative) involved in handling and distributing pharma grade products has been made aware of the risks for human health.					
iv. POYC role in the monitoring and their responsibilities for key activities in health, safety, environment (HSE) and quality.					
v. The procedures for good hygiene (monitoring of health conditions, wearing of protective clothes, respecting food/drink policy are in place).					
vi. Review and updating of workforce job descriptions.					
vii. POYC uses resources efficiently to maximize performance.					
viii. The active involvement in the development, implementation and ongoing management of the QMS (quality management system) to ensure compliance with GDP.					
ix. Development of procedures to define GDP relevant records and how they should be checked for accuracy and quality.					
x. Communication and coordination as to the link between POYC and customers in any recall operation.					
xi. Ensuring that relevant customer complaints are dealt with effectively.					

xii.	Developing of technical agreements with the client which detail the responsibilities for receiving, investigating, and reporting complaints					
xiii.	Fostering of communication to ensure that team members have a shared mental model.					
xiv.	Uses check-backs to verify information that is communicated.					
xv.	Keeping appropriate records of any delegated duties.					
xvi.	Formal training in auditing skills to help ensure an annual self-inspection program for POYC.					
xvii.	Self-inspection at regular intervals to put corrective measures in place.					
xviii.	Timely and constructive feedback to stakeholders.					
xix.	The systems in place to identify any operational difficulties including lack of resources so that these inadequacies may be addressed and resolved.					
xx.	Procedure ensuring all clients and authorities are informed in case of serious or potentially life-threatening situations.					
xxi.	Coordinating and performing promptly any recall operations of medicinal products.					
xxii.	Procedure for defining the process of deciding about the fate of returned goods.					
xxiii.	A system in place to ensure that returned goods are placed in quarantine					
PART 3: Philosophy of Patient-centered care		**1**	**2**	**3**	**4**	**5**
i.	The vision, mission, and philosophy of care statements reflect the principles of patient-centered care					
ii.	The definition of quality health care include how patients will experience patient-centered care					
iii.	The policies, programs, and staff practices are consistent to patient's health, safety, and well-being					
iv.	Patients role as essential members of the healthcare team.					
v.	Qualifications, knowledge, and skills of the workforce suitable to provide patient-centered care.					
vi.	Effective patient safety and understands that patients are critical component of the health care team.					
vii.	Clear information on the services of POYC.					
viii.	Engaging patients at a service level within the organization					
ix.	Ensuring continuity of pharmaceutical care throughout the patient journey as an integral part of collaborating primary care					
x.	Continuation to integrate innovative, beneficial ICT and digital health solutions in practice.					
xi.	Consultation of end-users (community pharmacist) on the pragmatic development, integration and user-friendliness of new ICT solutions in healthcare.					
xii.	Health care users to help progress the safe digitalization of healthcare as trusted sources for health information and daily ICT users while maintaining their invaluable personal connection with patients.					
xiii.	Patients can access treatment close to their home or					

	place by offering their full range of medicines in community pharmacies, care homes, and patient's homes through POYC.					
xiv.	Medical devices to community pharmacies and patients.					
xv.	POYC grants access to community pharmacists to patients' relevant health information and the list of medication to guarantee the continuity of pharmaceutical care.					
PART 4: Training and Development		**1**	**2**	**3**	**4**	**5**
i.	The culture of POYC is supportive of change and open to learning					
ii.	Preparedness for a new and changing roles and responsibilities					
iii.	Participation in the training and development opportunities to perform task effectively.					
iv.	Participation towards education programs prepare the staff for patient-centered values and practices**.**					
v.	Appropriate training courses of workforce to ensure continued current knowledge of GDP requirements and regulatory authority expectations.					
vi.	Maintaining competence in GDP through regular training.					
vii.	Continuous training programme for all personnel involved in distribution activities					
viii.	Training sessions as it is a good way to receive feedback on various aspects of the QMS.					
ix.	Training records reviews during the self-inspections.					
x.	Evaluation of all activities to identify training needs or gaps.					
xi.	Internal and external training courses documentation.					

Appendix 2.5: POYC Stakeholder's Questionnaire

TITLE: Patient-centred Training for Pharmaceutical GDP in POYC for Stakeholders

Date:

Dear _____,

I'm May Florence Dela Cruz Bacayo, a Doctorate in Pharmacy student from the University of Malta. As part of my degree I'm conducting a study entitled "Patient-centred Training for Pharmaceutical Good Distribution Practice in Pharmacy of Your Choice (POYC)" under the supervision of Dr Louise Grech and Prof Anthony Serracino-Inglott.

I would like to obtain your insights/opinions about a patient-centred good distribution practice within POYC through the attached questionnaire which takes approximately 40-45 minutes to complete.

I will invite you for a zoom interview to produce a general data of your opinions as a stakeholder utilizing the services of POYC and its workforce. The information obtained in these interviews will be for the direct use of the principal investigator on the data analysis and will be presented as a general result without identifying individual opinions. The collected information will remain confidential, and it will only be used for scientific purposes. Data will be processed in accordance with the General Data Protection Regulations (GDPR) of the *Data Protection Act*, Chapter 586 of the Laws of Malta.

Thank you for your participation.

Respectfully yours,
May Florence D. Bacayo
PharmD student
Email add: may.bacayo.19@um.edu.mt
Mobile no. 79230107

Section A: Perceived roles of stakeholders.

1. Please describe your organization.
2. What is your specialization/area of expertise within your organization
3. What is your function in the provision of healthcare services in Malta?
4. What is your perspective regarding the learning need of the following areas:
    - 4.1 Good Distribution Practice within POYC
    - 4.2 Organization and Personnel of POYC
    - 4.3 Philosophy of Patient-centred Care within POYC
    - 4.4 Training and Development of POYC workforce

Section B: Perception on quality of care through POYC services

1. How do you see POYC program in relation to the delivery of pharmaceutical services in Malta?
2. Discuss the performance of your organization in relation to POYC scheme in terms of the following:
    - 2.1 Safety/Reliability (Provisions ensuring the safety of the pharmaceutical products from source to consumer)
    - 2.2. Effectiveness/Usefulness (POYC services giving the most effective pharmaceutical needs, ensure availability and effective handling of medicines)
    - 2.3 Patient-centredness (POYC scheme's policies that improves patient's experience)
    - 2.4 Timeliness of delivery (Efficiency of the provision of the services)
3. How relevant is POYC scheme is in terms of the delivery of services to its intended customers?
4. How did the POYC scheme perform relative to the COVID-19 pandemic?

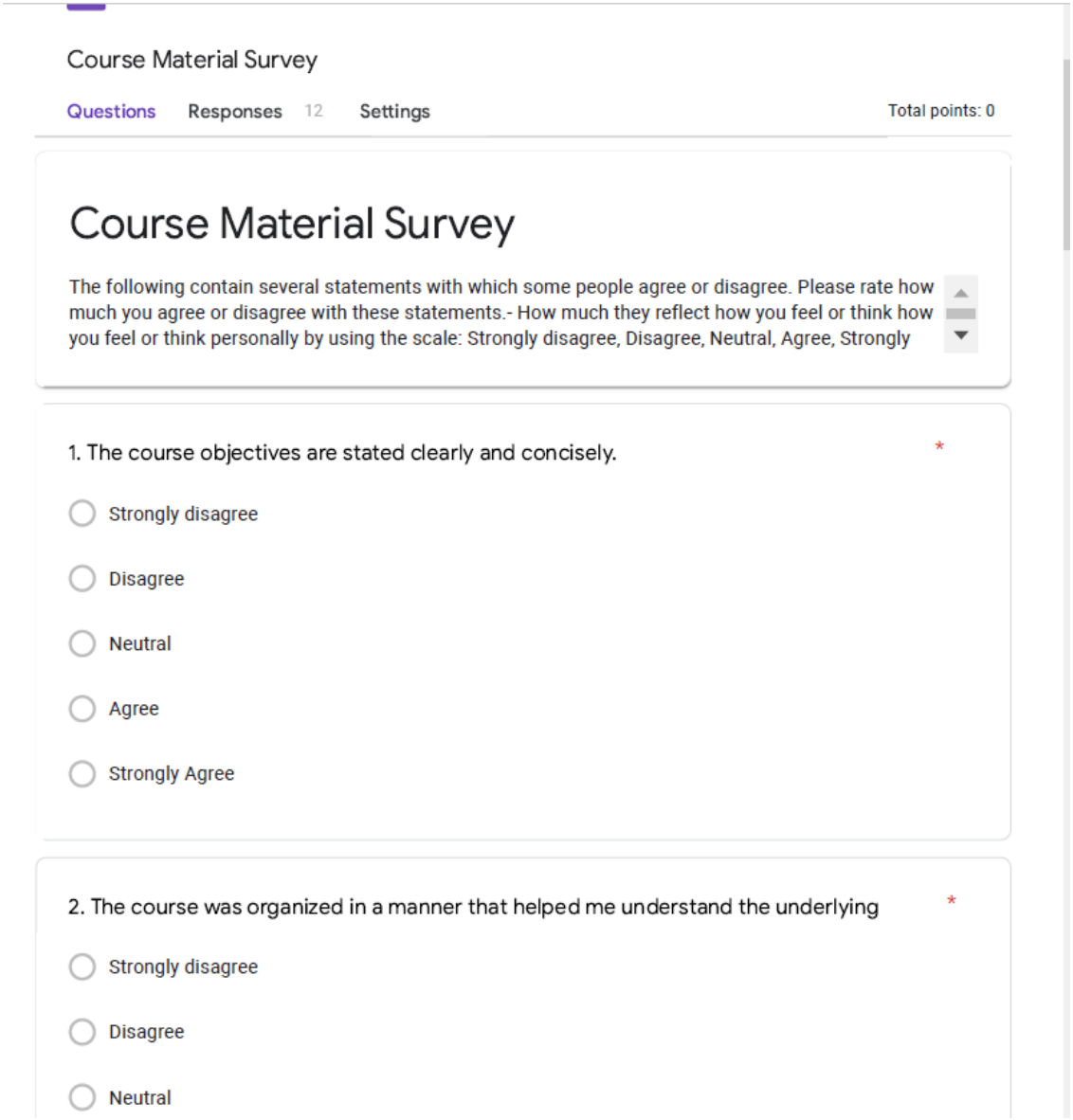
Appendix 2.6: Online Course Design Evaluation Form

Adapted from: Guidelines Online Course Design Rubric
New Mexico State University

STANDARDS	YES	NO	Comments
Organization & Design			
The course is well-organized and simple to follow. Learners can clearly grasp all course components and organization.			Strengths: Areas to improve:
The aesthetic design clearly conveys and communicates course information throughout the course			Strengths: Areas to improve:
The course addresses accessibility difficulties throughout			Strengths: Areas to improve:
Design and Delivery of Training			
The course provides several possibilities for interaction and communication between learners, between learners & content, and between facilitator/s.			Strengths: Areas to improve:
The learning objectives have been specified, and the learning activities have been explicitly integrated.			Strengths: Areas to improve:
To improve learning and accessibility, the course includes a variety of visual, textual, and kinesthetic exercises.			Strengths: Areas to improve:
Participant Learning Assessment and Evaluation			
The instructional activities, learning objectives, and assessment activities are all highly correlated			Strengths: Quiz to assess Areas to improve:
The course includes a variety of timely and effective tasks designed to measure learner readiness for course material and style of delivery.			Strengths: Areas to improve:
Innovative Course Delivery Using Technology			
The course optimizes internet connectivity and efficiently involves participants in the learning process in a several ways.			Strengths: Areas to improve:
The course makes use of a number of digital tools to enhance communication and learning			Strengths: Areas to improve:

Facilitator Use Learners Feedback			
The facilitator provides numerous options for learners to provide comments on the usability of online technologies and course accessibility.			Strengths: Areas to improve:
The facilitator provides numerous opportunities for learners to provide comments on course material.			Strengths: Areas to improve:

Appendix 2.7: Online Training Course Evaluation Form



Course Material Survey

Questions Responses 12 Settings Total points: 0

Course Material Survey

The following contain several statements with which some people agree or disagree. Please rate how much you agree or disagree with these statements.- How much they reflect how you feel or think how you feel or think personally by using the scale: Strongly disagree, Disagree, Neutral, Agree, Strongly

1. The course objectives are stated clearly and concisely. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

2. The course was organized in a manner that helped me understand the underlying *

- Strongly disagree
- Disagree
- Neutral

Appendix 2.8: Mean and Standard Deviation Result of the POYC Workforce Research Instrument

Likert Scale

4.21 – 5.00	Extremely needed to learn
3.41 – 4.21	Moderately needed to learn
2.61 – 3.41	Somewhat needed to learn
1.81 – 2.61	Slightly needed to learn
1.00 – 1.81	Not at all needed to learn

Good Distribution Practices	Question Nos.	Mean	Std. Deviation	Description
	i	3.741	0.903	Moderately needed to learn
	ii	4.444	0.577	Extremely needed to learn
	iii	4.370	0.742	Extremely needed to learn
	iv	4.482	0.643	Extremely needed to learn
	v	4.482	0.643	Extremely needed to learn
		4.304	**0.318**	**Extremely needed to learn**
Organization and Personnel	**Question Nos.**	**Mean**	**Std. Deviation**	**Description**
	i	4.259	0.656	Extremely needed to learn
	ii	3.778	1.086	Moderately needed to learn
	iii	4.148	0.907	Moderately needed to learn
	iv	4.185	0.622	Moderately needed to learn
	v	3.852	1.167	Moderately needed to learn
	vi	3.889	0.892	Moderately needed to learn
	vii	3.926	0.997	Moderately needed to learn
	viii	4.000	0.784	Moderately needed to learn
	ix	4.074	0.829	Moderately needed to learn
	x	4.444	0.698	Extremely needed to learn
	xi	4.444	0.751	Extremely needed to learn
	xii	4.037	0.898	Moderately needed to learn
	xiii	4.185	0.786	Moderately needed to learn
	xiv	4.037	0.854	Moderately needed to learn
	xv	4.111	0.847	Moderately needed to learn
	xvi	4.074	0.997	Moderately needed to learn
	xvii	4.111	0.974	Moderately needed to learn
	xviii	4.222	0.892	Extremely needed to learn
	xix	4.037	0.898	Moderately needed to learn

	xx	4.630	0.492	Extremely needed to learn
	xxi	4.593	0.636	Extremely needed to learn
	xxii	3.963	1.160	Moderately needed to learn
	xxiii	4.296	0.953	Extremely needed to learn
		4.143	**0.223**	**Moderately needed to learn**
Philosophy of Patient-centered Care	**Question Nos.**	**Mean**	**Std. Deviation**	**Description**
	i	4.185	0.834	Moderately needed to learn
	ii	4.259	0.712	Extremely needed to learn
	iii	4.333	0.679	Extremely needed to learn
	iv	3.963	1.018	Moderately needed to learn
	v	4.407	0.797	Extremely needed to learn
	vi	4.444	0.698	Extremely needed to learn
	vii	4.333	0.620	Extremely needed to learn
	viii	3.778	0.892	Moderately needed to learn
	ix	4.074	0.997	Moderately needed to learn
	x	4.185	0.834	Moderately needed to learn
	xi	3.778	1.086	Moderately needed to learn
	xii	4.111	0.974	Moderately needed to learn
	xiii	4.074	1.174	Moderately needed to learn
	xiv	3.926	0.874	Moderately needed to learn
	xv	3.889	0.892	Moderately needed to learn
		4.116	**0.158**	**Moderately needed to learn**
Training and Development	**Question Nos.**	**Mean**	**Std. Deviation**	**Description**
	i	4.037	0.898	Moderately needed to learn
	ii	3.963	0.898	Moderately needed to learn
	iii	3.889	0.892	Moderately needed to learn
	iv	4.000	0.877	Moderately needed to learn
	v	4.148	0.818	Moderately needed to learn
	vi	4.222	0.934	Extremely needed to learn
	vii	4.222	0.801	Extremely needed to learn
	viii	4.111	0.801	Moderately needed to learn
	ix	4.259	0.813	Extremely needed to learn
	x	4.222	0.751	Extremely needed to learn
	xi	4.148	0.818	Moderately needed to learn
		4.111	**0.123**	**Moderately needed to learn**

Appendix 2.9: Summary of Course Validation by the Experts

Suggested Modifications by the Validation Panels and Action Taken			
Standards	**Strengths**	**Comments (Areas to Improve**	**Action Taken**
Organization and Design			
The course is well-organized and simple to follow. Learners can clearly grasp all course components and organization.	**V1:** Course is well-explained and well-organised. **V2:** Detailed **V3**: It's a good initiative and it will assist the operators to harmonize tasks	**V1:** At first it was not easy to access the portal and identify where the course material was accessible from. You may consider providing more instructions or a link to the material. **V2:** Produce less busy slides **V3:** I have used the google tool to send you comments for amendments and I am also sending you the ppt with comments on the first slide	Sending the link to the liaison officer of POYC and she will send it to the respondents Suggestions are noted and amendments will be done. Meeting with RP tomorrow (11/02/2022) to find out more about the SOPs (recall of medicine reporting – RP POYC reports to RP CPSU)
The aesthetic design clearly conveys and communicates course information throughout the course.	**V1:** The course is overall well-presented. **V2:** No Comment **V3:** They are appealing and simple re GDP. The one on the patients is too complex	**V1** I would suggest that modules are listed in order on the portal (1 followed by 2 etc.) to help accessibility and flow of information. **V2:** At times, font size is too small **V3:** Too much text – you need to spoon-feed these levels yes, but I would reduce text on ppt and then give extra notes	The modules are already listed in order The suggestion will be included in the recommendation

The course addresses accessibility difficulties throughout	**V1:** Providing an online course gives the participant freedom to access the course at any time and in any desired place. **V2:** No comment **V3: No comment**	**V1:** Depending on the purpose and the needs of the participant, this may impact the finalization of the training: the participant never finds time for the course. Could giving a reasonable timeline or material available for only a period acceptable? Or maybe it is best to leave the material available 'forever' and propose some initiatives that may incentive the completion of the course- A certification recognized in the country for example. **V2:** No comment **V3:** Yes but you need to define them acc to POYC operations in some instances	To leave the material to the Responsible Persons in POYC with the approval of my research supervisors It is define according to POYC operations
Design and Delivery of Training			
The course provides several possibilities for interaction and communication between learners, between learners & content, and between facilitator.	**V1:** The participant can contact the trainer online/ via email even though I would specify availability of the trainer for further discussion and invite participants to do so. **V2:** No comment **V3:** The fact that it is interactive and that it can be accessed at any point in time it facilitates learning.	**V1:** I would consider the use of live chats or set virtual meetings with the trainer to enhance communication between the participant and the trainer. **V2:** No comment **V3:** To keep same level all throughout for the decided audience…	The suggestion is noted. The researcher will send the google meet link to the participants on the first meeting and google chat will help the participant communicate with the researcher Noted

The learning objectives have been specified, and the learning activities have been explicitly integrated.	**V1**: The program is comprehensive on GDP and includes insights related to clinical applicability and patients which I believe to be good to remember even in an environment where the patient is not directly involved. **V2:** No Comment **V3:** Well set-up and I think they are holistic	**V1:** : Make sure that links work properly (there was one video not available- n 2 of Documentation practice). You may consider downloading the videos (if possible) to make sure that videos are always available, and link are not disrupted. **V2:** No Comment **V3:** Some objectives cannot be left generic but specific to operations or else the audience will be lost	The suggestion will be carried out. Changes will be done according to the suggestions.

To improve learning and accessibility, the course includes a variety of visual, textual, and kinesthetic exercises.	**V1:** Videos help catching the attention of the participant and are complemented by presentations. I think this was a smart choice to direct the course and tailor it to POYC while at the same time seeing the principles in broader areas. Lengths of video and presentations is appropriate and enhances feasibility of the course. **V2**: No comment **V3:** Yes	**V1:** Make sure that you have approval for the videos you are including. Some videos have inaccurate subtitles. **V2:** No comment **V3:** Try to harmonize everything for uniformity	A disclaimer was included in the course site The suggestion will be carried out.
The instructional activities, learning objectives, and assessment activities are all highly correlated	**V1:** The content of the questions is appropriate. **V2:** No comment **V3:** Good questions	**V1:** Not Applicable **V2:** No comment **V3:** Certain wording to make it understood e.g. avoid using enumeration and use the 4 Likert scale since they cannot be neutral once they are learning and the assessment would be fairer.	The suggestion will be carried out.
The course includes a variety of timely and effective tasks designed to measure learner readiness for course material and style of delivery.	**V1:** The questions are clear, not long and not too many. **V2:** No comment **V3:** Different learning objectives, with questions to summarise take home messages	**V1:** Have you considered multiple assessments? One after each module? **V2:** No comment **V3**: What about scoring?	Multiple assessments might be difficult. It would be tedious to the part of the participant (attention span of the learner may hinder them to finish the course)

Innovative Course Delivery Using Technology			
The course optimizes internet connectivity and efficiently involves participants in the learning process in several ways.	**V1**: Internet is a common tool for the delivery of courses and work **V2**: No comment **V3:** User friendly	**V1:** Through videos the attention of the participant is captured and maintained. **V2:** No comment **V3:** Nil but you need to find ways to engage the different age groups eg adding further technical assistance. As even though we are in the remote era most of them are not involved in such meetings	I will personally assist them how to navigate the course site
The course makes use of a number of digital tools to enhance communication and learning	**V1:** Agreed **V2:** No comment **V3:** Good choice of portal	**V1:** N/A **V2:** No comment **V3:** No comment	
Facilitator Use Learners Feedback			
The facilitator provides numerous options for learners to provide comments on the usability of online technologies and course accessibility.	**V1**: No comment **V2:** No comment **V3:** Yes, but to accommodate this kind of audience you might need to have a contingency plan – like a demo on ppt on how to manage the access to course etc. Also, since it is on google if they for example enter one sheet you need to spell out how to get back etc.	**V1:** No comment **V2:** No comment **V3**: No comment	
The facilitator provides numerous opportunities for learners to provide comments on course material.	**V1:** No comment **V2:** No comment **V3:** Totally agreed	V1: No comment V2: No comment V3: No comment	

Appendix 3.0: EAFP Conference Abstract

IDENTIFYING PATIENT-CENTRED TRAINING NEEDS FOR PHARMACEUTICAL GOOD DISTRIBUTION PRACTICE

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Introduction:

Patient-centeredness in healthcare delivery recognizes that a patient's values and preferences must be central in the delivery of pharmaceutical services. Within the Ministry of Health, the Pharmacy of Your Choice (POYC) unit is responsible for providing access to medicines within the national health service scheme through private community pharmacies. The service includes distribution of medicines, which are centrally procured, to the community pharmacies in Malta and Gozo. The study is aimed to address the training needs for pharmaceutical good distribution practice of Pharmacy of your Choice health workforce instilling an enhanced patient-centered approach.

Method: A questionnaire aimed at assessing the core competencies of the services of the POYC workforce was compiled and validated by 4 pharmacists each coming from academia, hospital, community, and regulatory sectors respectively. The validated questionnaire was disseminated electronically to POYC workforce. The questionnaire consisted of open and closed ended questionnaires with a Likert scale (1 to 5, 5 being strongly agree).

Results:

All members of the validation panel (n=4) agreed that that the questionnaire was feasible, practical to complete taking not more than 10 minutes to complete. The questions were concise and clear. Study findings from the distribution of the questionnaire: 27 POYC workforce indicate that the highest training need focuses on Good Distribution Practices (Mean = 4.3). The second priority is Organization and Personnel (Mean = 4.1) followed by Philosophy of Patient-Centered Care (Mean = 4.1) where the participants will capacitate themselves in building more responsive patient care.

Conclusion: An online self-paced training course focusing on the themes highlighted by the POYC workforce is designed based on an interactive participant approach.