

On the Road to Continuous Improvement (CI)

**Screening and Early
Detection of Breast
Cancer Infrastructure
and
Application of
International Quality
Standards**

Written by

Dr. Naseem Begum and Khadija Khan



Horizon Research Publishing, USA

**On the Road to Continuous Improvement
(CI) Screening and Early Detection of
Breast Cancer Infrastructure and
Application of International
Quality Standards**

Written by

Dr. Naseem Begum

Independent Consultant Oncologist, Pakistan

and

Khadija Khan

Independent Consultant Development Evaluation and Human Rights,
Austria

Horizon Research Publishing, USA

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Authors: Dr. Naseem Begum and Khadija Khan

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Preface

Promotion of breast cancer screening and early detection is not a favour to female population. It is a duty of the whole nation to ensure that half the population of the country is safe health-wise and contributing productively to the society. It should not be taken lightly.

In this context, this publication is an effort to put forward some of the critical issues for us to think about seriously.

Since breast cancer screening and early detection is a major impediment in providing timely treatment to patients and enhancing their chances of survival, it needs to be widely publicized through public campaigns and professional education of medical professionals across the country. Further, in case population-based screening is not possible due to resource constraints, at least community-based screening has to be established in distant areas to ensure that female population benefits from screening facilities. There is evidence across all age groups that, organized population based breast cancer screening programmes (PBBCS) can reduce breast cancer mortality by 20%¹.

In Pakistan, luckily, there is no dearth of competent and dedicated medical and technical professionals who are engaged in providing these services, among them are breast surgeons, medical physicists, radiologists, nurses, technicians and technologists. The low volume of patients presenting for screening is meant to under-utilize their services and undermine their motivation.

Establishment of dedicated breast cancer centres with one-stop shop is one of the feasible options that would save women and their families from unnecessary commuting, financial burden and mental stress to receive screening and early detection services.

The second most important issue is the introduction of international quality standards in the mammography imaging and allied tests and services for screening and early detection. Aligning and implementing protocols and procedures according to the guidelines developed by prestigious institutions such as the IAEA, ICRP, ACR (USA), RCR (UK), EUREF, EUSOMA and European Commission as well as WHO, IPEM and AAPM needs no second thoughts. At this stage, we do not have to develop the standards from the

¹ M G Marmot, D G Altman, D A Cameron, J A Dewar, S G Thompson, M Wilcox. The benefits and harms of breast cancer screening: an independent review. A report jointly commissioned by Cancer Research UK and the Department of Health (England) October 2012. British J Cancer. www.bjcancer.com | DOI:10.1038/bjc.2013.177

Preface

scratch or reinvent what is already available.

Third most important issue is the political willingness to take this matter seriously and include the subject of breast screening and early detection in health policy in bold and as an integral part of national cancer control programme.

This collaborative work by two dedicated professionals from medical and social disciplines makes us think of the situation in a different perspective, a perspective leading to an urgent action in 3D:

Cancer Policy and National Cancer Control Programme development;

Building national capacities and ensuring optimal utilization of both technical and human resources;

Wide awareness campaigns to engage public in this action-oriented discourse.

On my own behalf and on behalf of my colleagues, I offer our brains and bodies to contribute to the above action whole-heartedly. The time is ripe.

Thank you.

Dr. Najamuddin

MBBS, FRCR

Consultant Radiologist and CEO

Aznostrics-The Diagnostic Centre, Lahore;

Chairman Education Committee

Radiological Society of Pakistan

Acronyms

Acronyms

AAPM	American Association of Physicists in Medicine
ACR	American College of Radiology
ASIR	Age Standardized Incidence Rate
ASMR	Age Standardized Mortality Rate
BC	Breast Cancer
B.Sc.	Bachelor of Science
CBE	Clinical Breast Examination
CI	Continuous Improvement
EUREF	European Reference Organisation for Quality Assured Breast Screening and Diagnostic Services.
IAEA	International Atomic Energy Agency
ICRP	International Commission on Radiological Protection
INMOL	Institute for Nuclear Medicine and Oncology, Lahore
IPEM	Institute of Physics and Engineering in Medicine
ISO	International Standards Organization
LMIC	Low and middle income countries
M. Sc.	Master of Science
MRI	Magnetic Resonance Imaging
MTB	Multi-disciplinary Tumour Board
OJT	On Job Training
PAEC	Pakistan Atomic Energy Commission
PKR	Pak (Pakistani) Rupee
PNRA	Pakistan Nuclear Regulatory Authority
QA	Quality Assurance
QC	Quality Control
RCR	Royal College of Radiologists, UK
RPO	Radiation Protection Officer
SKMCH	Shukat Khanam Memorial Cancer Hospital
WHO	World Health Organization

Acronyms

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Chapter 1. Introduction, Context and Objective of the Study

- **Introduction**
- **Context**
- **Objective of the Study**

1.1. Introduction

The importance of quality management in the medical field of mammography and other screening and early detection techniques cannot be overemphasised enough as it deals with the life and well-being of people, particularly women. The science of mammography is at an advance stage and continuously developing, thanks to the attention paid to it by inter alia research scientists, academics, medical practitioners and nuclear/ biomedical engineers. Whereas the health sector is equipping itself with latest 2D and 3D imaging technology to improve the quality of imaging, the utilization and maintenance of these machines and availability of trained staff for quality assurance is still lacking in low and middle income countries (LMICs) like Pakistan.

Quality management in health care is defined as, ‘any evaluation of services provided and the results achieved as compared with accepted standards’². Any shortcomings revealed by the evaluation are taken into account to devise an improvement plan including a timeline to implement these recommendations. The scope of evaluation includes many levels of medical services and infrastructure within the health care system. At institutional level it takes into consideration programmes that ‘improve patient care, patient safety, resource utilization and ancillary services’³. At medical professional and staff level, it focuses on individual qualifications, competencies, social skills, training, level of responsibility, and most of all the understanding and attitude towards quality management.

The commonly used breast screening technology includes Mammography, Ultrasound and MRI. Most breast screening programmes such as the one introduced in UK in 1988 use Mammography as ‘the examination of choice for routine breast cancer screening’⁴ whereas the ‘Ultrasound and MRI are used extensively for symptomatic disease and, in some situations, such as in younger women with dense breast’⁵. Medical experts consider quality assurance ‘as an essential element’⁶ in any national health programme, it is ‘particularly important in mammography because the examination is so technically

² Mosby's Medical Dictionary, 9th edition. © 2009, Elsevier.

³ Medical Dictionary, © 2009 Farlex and Partners

⁴ A C Moore et al, The Commissioning and Routine Testing of Mammographic X-ray Systems, Institute of Physics and Engineering in Medicine, York, UK, 2005, page 2.

⁵ A C Moore et al, The Commissioning and Routine Testing of Mammographic X-ray Systems, Institute of Physics and Engineering in Medicine, York, UK, 2005, page 2.

⁶ A C Moore et al, The Commissioning and Routine Testing of Mammographic X-ray Systems, Institute of Physics and Engineering in Medicine, York, UK, 2005, page 3.

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We are grateful to Dr. Najamuddin for his support during the research and for his passionate message in the Preface, highlighting major hurdles in the course of quality assurance in breast screening and early detection.

We also acknowledge valuable advice received from Dr. Walter Schicho, Institute for African Studies, Vienna University, Vienna, Austria, to improve our earlier drafts. We extend our gratitude to him.

Many thanks to our colleagues at the International Atomic Energy Agency (IAEA) library in Vienna, colleagues at PAEC's Institute of Radiotherapy and Nuclear Medicine (IRNUM), Peshawar, and at Rahman Medical Institute (RMI), Peshawar, for facilitating access to books and material to help conduct the literature review.

Dedication

We dedicate this humble effort to Breast Cancer Survivors who opted for timely screening and early detection, and underwent treatment with courage, positivity and passion for life.

Authors' Biographies



Dr. Naseem Begum has a degree in MBBS from Khyber Medical College, Peshawar (Pakistan), Post Grad specialization in clinical oncology from the College of Physicians and Surgeons (Pakistan) and an Executive MBA in Health Management from Preston University (Pakistan). She is a consultant oncologist and a researcher with a special focus on breast cancer. She has served both at national and international organizations including as a consultant at the International Atomic Energy Agency (IAEA). She has retired as Deputy Chief Medical Officer from PAEC's Institute of Radiotherapy and Nuclear Medicine and is currently working as freelance consultant. She is the founding president of Radiation Oncology Society of Pakistan and ex President Radiological Society of Pakistan. She has authored many scientific papers on issues cutting across sociology, economy and medical science in collaboration with colleagues. She is a recipient of many national awards and the winner of prestigious "honorary membership award of European Society of Radiotherapy and Oncology (ESTRO)" for performance in her professional field of oncology. naseembm@gmail.com



Khadija Khan is a social researcher, a development evaluator and an advocate of Human Rights. She has served in various executive positions at national and international/UN organizations addressing critical issues including child labour, gender, poverty, rural development, education, health and post disaster humanitarian assistance and rehabilitation as well as technical cooperation in the peaceful use of nuclear energy. She has completed her last assignment in 12/2015 as Quality Management Specialist in the Technical Cooperation Department; International Atomic Energy Agency (IAEA) Vienna, Austria, and is currently working as an Independent Consultant on Development and Human Rights. Khadija has served as Secretary Board, International Development Evaluation Association (IDEAS) from 2006-2009 and is the lifelong President of Pakistan Evaluation Network (PEN) since its foundation in 2005. She is also a member of Society for Risk Analysis (USA) and Society for Risk Analysis (Europe). She has to her credit both published and unpublished work including 3 books and numerous articles, evaluation reports and research papers on critical social and management issues. She is based in Vienna. Kkhan01.kjk@gmail.com

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