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Trends that have influenced the Swedish radiography profession over the last four decades

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ABSTRACT

Introduction: The expansion of the radiography profession in recent decades has widened the scope of radiographic practice. This has raised questions about which trends have had an impact on the profession over the years. The study aim was to explore trends that have influenced the radiography profession over the last four decades.

Methods: A qualitative design was used. Eleven focus group interviews inspired by the Scenario Planning Method were conducted at 11 diagnostic radiology departments in public hospitals in Sweden. The target group consisted of 48 registered radiographers. To analyse the data, qualitative content analysis was used.

Results: Thematic data analysis revealed three broad categories; technological development and radiation doses, current status of the radiography profession and specialisation leading to expert knowledge. Each category derived from two or three sub-categories.

Conclusion: The results demonstrate significant trends of influences on the radiography profession in Sweden over the last four decades. New methods and technology and control of radiation doses have had a favourable effect on the development of the radiography profession. Nevertheless, current status such as shortage of radiographers has had an adverse way. Specialisation leading to expert knowledge has an influence on career advancement and a specialist education regulated by the law, might be a prerequisite for the development of the radiography profession.

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Introduction

The significant growth and expansion of the radiography profession in recent decades has raised questions about what has influenced the profession over the years and where it is heading.¹ Members of the radiography profession need to explore its present status and outline a vision of the future by generating scenarios that could be described as a roadmap to the future.² Scenario Planning is a tool that enables long-term planning, especially in cases when the circumstances are uncertain.³ The method provides an opportunity to plan for the future by presenting an overall picture of the current situation as well as the background that might elucidate the underlying conditions and driving forces. Identifying trends by tracking changes and discovering patterns, threats and opportunities in the current situation is involved in the

Scenario Planning Method. When tracking trends, one must start with the historical context in order to explore the changes that have influenced the profession over the years.³ Tracking trends may create an awareness of the status of the radiography profession and radiographers as well as promote the ability to formulate different strategies, thereby enabling the profession to be guided in the desired direction.²

Due to the shortage of radiologists, which has been reported since at least the 1970s, radiographers now perform tasks and assume roles that were previously preserve of radiologists.⁴ Development of the professional role and the subsequent emergence of new duties can be considered an expansion of practice and has cleared the way for new positions such as advanced practitioner and consultant radiographer, common in countries in Europa but not yet established in Sweden.^{5,6} Studies have shown that these positions may result in a higher level of practice with increased responsibility and personal development opportunities.^{7–9}

There is a lack of knowledge about trends that previously shaped the profession and might influence it in the future. Such

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trends need to be explored. Present study is the first part of a project consisting of two studies. The overall aim was to explore trends that have influenced the profession over the years and to predict what the Swedish radiography profession will be like in 2025.

Aim

The aim was to explore trends that have influenced the radiography profession over the last four decades.

Design

The study design was qualitative with an inductive approach based on focus group interviews.¹⁰ In order to explore the trends that radiographers are exposed to or experience in their everyday work, the interviews adhered to a process inspired by the Scenario Planning Method.¹¹ Data collection by means of focus groups is deemed a fruitful research method that benefits from group dynamics, thus allowing researchers to access rich information in an effective manner, especially when studying previously unexplored issues.¹² The method facilitates a natural conversation and social interaction in the group when discussing the issue at hand.¹⁰

Participants

The target group consisted of radiographers working in diagnostic radiology departments in public hospitals in Sweden. Participating departments were selected on a geographical basis from the southern to the northern part of the country and included urban, regional and rural areas. After obtaining approval from the radiology department administrators, the head nurse at the diagnostic radiology department informed the staff about the study and radiographers were invited to participate (Table 1). Written information including the aim and objectives of the study was distributed to the participants. Those who volunteered to take part in the study had different positions and qualifications. The majority of the participants were employed in general areas ($n = 21$), 17 had management positions or modality responsibilities, while five had educational positions and another five were studying at master or doctoral level. The interviews were performed during spring 2016.

Data collection

Eleven focus groups were formed, each comprising four to five radiographers. The three authors, all of whom have a PhD and are

clinical researchers and radiographers, were involved in the interviews. Nine of the eleven focus groups were chaired by one of the authors, assisted by an observer, who made notes and helped to capture and summarise points of particular relevance to the aim of the study. One of the authors, without any assisted observer, chaired the remaining two groups. However, there was no impact on the data collecting or the quality of the interviews. The initial open-ended question was “*What trends have influenced the radiography profession over the years?*” A semi-structured interview guide based on the steps of the Scenario Planning Method was employed.^{3,13} The interviews were audio recorded and conducted in the participants' work place during working hours or immediately before or after work.

Data analysis

Inductive thematic analysis was used to identify and categorise the findings. This is a systematic method that makes the analysis a visual and tangible process.¹⁴ The audio-recorded interviews were transcribed verbatim by the authors. Nevertheless, when a conversation is translated into text, some changes are inevitable to ensure confidentiality, such as the paraphrasing of local expressions.¹² The first five steps of the Scenario Planning Method³ were performed to describe the trends that influence the radiography profession today (Table 2).

Initially, the authors read the interviews several times to gain a general sense of the whole, followed by a reading to identify meaning units guided by the aim of the study. The text units were condensed, compared and organised into trends according to content. Seven subcategories (contemporary trends) were condensed into three categories. Each step of the analysis was discussed by the authors until consensus was achieved.

Ethical aspects

Swedish legislation requires no formal approval from an ethics committee when the study participants are staff members. However, ethical aspects were taken into consideration with reference to the Helsinki Declaration¹⁵ as well as the principles of autonomy, justice, non-maleficence and beneficence.¹⁶ At the start of each focus group interview, the participants were given detailed information about the study and informed consent was obtained. The voluntary nature of participation, the right to withdraw at any time and the anonymous reporting of the result were underlined. Confidentiality was maintained by restricted, secure access to the data.

Trustworthiness

The credibility of the study was enhanced by a detailed description of the data collection and analysis process.¹⁷ All authors independently analysed and categorised the interview transcripts, which ensured confirmability. The final interpretation of the data was based on the views of all authors which, together with ensuring that the findings were grounded in the text and illustrated by quotations from the original interviews, strengthens trustworthiness. The inclusion of rich descriptions in the findings allows the reader to evaluate and transfer the findings to similar contexts.

Findings

Analysis of the interview texts revealed three categories and seven subcategories (Table 3).

Table 1
Socio-demographic characteristics of participants ($n = 48$).

Work experience	
Max	41 years
Min	9 month
Mean	14.6 years
Gender	
Female	34
Male	14
Total	48
Working areas (n)	
General	21
MRI, CT, Nuclear	17
Clinical teacher	5
Master-/PhD student	5
Interview duration (min)	
Max	112
Min	74
Average	95

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