Declaration

I Hilde Doris Hendrik declare that this research report is submitted for the MScMed (Bioethics & Health Law) course is my own unaided work except where I have explicitly indicated otherwise. I have followed the required conventions in referencing the thoughts and ideas of others. It is being submitted for the degree of MScMed (Bioethics and Health Law) in the University of Witwatersrand, Johannesburg. It has not been submitted before any degree of examination at this or any other university.

Signature *Hilde*

___1__ day of _____August_____, _____2014_____

Dedication

This thesis is dedicated to Professor CEE Noffke and Professor EJ Raubenheimer.

For their endless support and encouragement.

Abstract:

For centuries, dental practitioners have used radiographs as their primary diagnostic tools. (Lorenzoni *et al*., 2012: 1-10). Cone-beam Computed Tomography (CBCT) was introduced to the dental profession in early 2000's and represented a convenient alternative to the higher radiation dose Medical Computed Tomography (CT) to be used as a dental radiological diagnostic tool (Friedland, 2009: 58). The dental profession accepted this new technology, however the criteria for using CBCT technology is far more complex than that for conventional radiographs (Noffke *et al.*, 2011: 262-266). According to Noffke *et al.*, this complexity is in terms of radiation dosage requirements, clinical indications, and radiological interpretation of the images (2011:263). Dental practitioners are currently faced with a predicament; guiding principles and safety precautions that were once applicable to conventional radiographic imaging techniques are no longer adequate or sufficient in regards this new technology (Holroyd & Gulson, 2009: 1-10). Currently in South Africa, limited guidance and training is available for the dental practitioner regarding CBCT (Noffke *et al*., 2011: 263). Dental practitioners, who may not have received adequate training regarding the safe and effective use of this innovative technology, are presently making use of this diagnostic modality in South Africa (*op cit*). The only training currently available locally is limited to the procedural aspects of CBCT technology offered by the businesses which market the equipment (*op cit*). This research report explores the multitude of ethical and legal issues concerning the use of CBCT technology by South African dental practitioners as a diagnostic tool.

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