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## ORIGINAL ARTICLE



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## Development of an OCT Certification Program

### INTRODUCTION

Following the release of the third generation of time domain instrumentation in 2002, OCT imaging has rapidly revolutionized the diagnosis and treatment of many retinal disorders. The recent introduction of new SD-OCT instruments from several manufacturers continues that trend with powerful new imaging tools. While OCT imaging provides a unique perspective for evaluating a variety of retinal conditions, OCT scans and analysis are not without fault. One of the shortcomings of OCT technology is that it is very easy to get results by knowing which buttons to push. The danger is that it is also very easy to get poor diagnostic results,

or miss important pathology entirely, even though the scans might appear to be of good quality. Quantitative measurements are very dependent on scan quality, as is detection of subtle pathology or fluid.<sup>1</sup> Poor ocular media, patient compliance and saccadic movement can introduce image artifacts that may masquerade as pathology. Even more problematic are the occasional software algorithm failures or the inappropriate application of certain analysis algorithms by undertrained operators. The explosive growth in utilization of OCT imaging has created a continuing need for education and strong standards to ensure accurate, repeatable results in this rapidly evolving field.

## OCT-C CERTIFICATION PROGRAM

In 2003, less than a year after the introduction of the Stratus OCT, the Ophthalmic Photographers' Society Board of Certification (OPS BOC) recognized a need for OCT imaging standards and began planning for the development of an OCT certification program to promote the delivery of competent, professional optical coherence tomography services. In the absence of formal education programs, certification can provide a diverse curriculum for professional development.

Accreditation standards for credentialing programs require that certification examinations be based on demonstrated job relevancy.<sup>2,3</sup> The OPS BOC conducted a task analysis survey of OCT imagers in 2006 to determine examination content. Based on the results of the survey, the OPS BOC launched the Optical Coherence Tomographer (OCT-C) certification program in July 2007 and administered the first examination in November 2007. The relatively short time from survey to first exam administration was facilitated through the use of web conferences. Subject matter experts gathered weekly via the internet to convert the survey results to an examination content outline and then write, review, and approve test questions.

Like the NCCA accredited Certified Retinal Angiographer (CRA) program, the OCT-C is a credential that is earned by demonstrating competency. OCT-C certification requires submission of work examples that meet established standards and the successful completion of a written examination. The OCT-C designates an individual who has met the OPS BOC standards for competence in optical coherence tomography.<sup>4</sup>

OCT-Cs demonstrate competence by understanding and being able to:

- Apply the principles of the anatomy of the eye
- Apply the concepts of pathology of the eye to OCT findings
- Recognize and identify clinical OCT findings
- Apply the properties of OCT equipment and protocols
- Interpret OCT images and analyses

Eligibility for the written examination is contingent upon submission and acceptance of a satisfactory portfolio and verification of an employment history performing OCT imaging for a minimum of one year. The work experience requirement is meant to allow time for an imager to acquire the knowledge and skills necessary to perform optical coherence tomography through hands-on experience. It typically includes enough patient interaction to allow a candidate to develop the clinical judgment and patient management skills necessary for competent performance as an optical coherence tomographer.

## THE FUTURE OF OCT CERTIFICATION

The OCT-C examination is currently based mostly on time-domain technology as identified in the task analysis of 2006. The OPS BOC assumed from the start however, that OCT technology would change at a fast pace and the certification program would need to respond to these changes as SD-OCT becomes more commonly used. The foundation of the certification program is built in such a way that as technology changes, the certification program will be able to evolve along with it. For example, the test has a significant emphasis on anatomy, clinical pathology, image interpretation and the application of OCT scanning to identify common pathologies. That won't change as SD-OCT instruments gain a stronger place in clinical use. Certification eligibility requirements already include comparable portfolio requirements for most of the SD-OCT instruments in current use.

The OPS BOC has implemented an additional strategy to respond to changes in utilization of new instrumentation. They have been conducting brief online surveys to gauge the variety of OCT instruments in current use. By periodically conducting this survey, they can identify an appropriate time to launch a full task analysis survey to develop new test specifications that reflect spectral domain OCT use in concert with time domain OCT use. The use of online survey instruments and web-conferencing for test development activities provides a cost effective and time efficient model for adjusting a certification program to evolving job requirements.

The field of ophthalmic imaging has witnessed dramatic technology-driven shifts in utilization of diagnostic imaging procedures as new instruments have become available over the last several years. OCT-specific certification is the best way to ensure the breadth of knowledge required to consistently obtain images for clinical trials and critical clinical decisions.

A list of current OCT-Cs can be found at: [www.opsweb.org/Certif/currentOCTCs.html](http://www.opsweb.org/Certif/currentOCTCs.html)

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