

WET LAB COURSE OUTLINE: MANUAL SMALL INCISION CATARACT SURGERY (MSICS)

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Introduction

Orbis International is a non-profit organization dedicated to eye care for all through strengthening healthcare systems and building institutional capacity to prevent and treat preventable blindness. Since 1982, Orbis has provided practical hands-on surgical and clinical training for eye care professionals worldwide. Orbis training and education is delivered through:

1. The Orbis Flying Eye Hospital (FEH), a state of the art surgical and training facility accredited through the American Association for Accreditation as an Ambulatory Surgery Facilities International (AAAASFI).
2. Hospital Based Trainings (HBT): Training is conducted for eye care professionals within their own practice setting by global ophthalmic experts.
3. Cybersight®, a patient care consultation and online education program that extends the presence of Volunteer Faculty (VF).

At the core of all Orbis training programs is our comprehensive and diverse global cadre of over 400 Volunteer Faculty, providing ophthalmic education and instruction to increase our partners' skill, service and the quality of patient care. Our global cadre is comprised of experts from all ophthalmic subspecialties and disciplines.

Today, Orbis regularly delivers training in 16 countries where we have established multi-year projects, as well as short training courses through the Flying Eye Hospital and hospital based trainings in Asia, Africa and Latin America.

Course Objective:

This course is designed to provide wet lab training in Manual Small Incision Cataract Surgery (MSICS) for residents and junior ophthalmologists.

MSICS has been recognized worldwide as a viable alternative to phacoemulsification for cataract surgery in resource constrained areas. It also serves as a valuable intermediary step to mastering phacoemulsification surgery.

This course includes the following aims:

1. Knowing and performing all surgical steps of MSICS (Figure 1)
 - Conjunctival peritomy
 - Scleral tunnel
 - Capsulorrhexis (continuous curvilinear, can-opener, and "V")
 - Hydrodissection
 - Nucleus extraction
 - Cortex removal

- Intraocular lens insertion
- Irrigation/aspiration
- 2. Identifying key microsurgical instruments and supplies
- 3. Managing common intraoperative complications
 - Poor wound construction
 - Anterior chamber instability
 - Capsular tears
 - Vitreous loss
- 4. Proper suturing techniques and knots (3-1-1, slip knot, figure of eight)
- 5. Pre-operative cataract evaluation and documentation
- 6. Patient consent process

Wet Lab: Learning MSICS Step by Step

- Preparation of the Eye
 - Use of microscope
 - Proper betadine
 - Lid speculum
 - Traction suture
- Paracentesis & Viscoelastic
- Anterior capsulorhexis, options:
 - Can opener
 - CCC (while not essential for SICS, CCC greatly adds to surgical safety, less PC breaks, and efficacy; and is the pre-requisite for learning Phacoemulsification, so should be included in training)
- Wound construction
 - Conjunctival incision
 - Cauterizing the epi-sclera
 - Scleral tunnel formation
- Anterior Chamber Maintainer (ACM)
- Hydrodissection & expression of the lens out of the capsular bag
- Extracapsular technique: expression of lens out of the eye, options include
 - A glide & hydroexpression
 - Irrigating Vectis technique
 - Simcoe Cannula technique
 - Plain Vectis technique
- Cortical Cleanup
- IOL insertion & implantation
- Wound inspection & closure
 - Includes scleral wound (possible need to suture)
 - Conjunctiva

Figure 1: Steps of MSICS

Course Application and Duration:

This course can be effectively delivered by Orbis International one week onsite, ideally in the context of the Orbis MSICS Training Course which includes continual tele-education and a six-week onsite program.

This course was designed for Orbis projects with any of the following objectives:

1. Strengthening residency training
2. Training secondary or rural eye care professionals in cataract surgery
3. Training ophthalmologists in low resource areas, in which phacoemulsification machines and consumables are not available.

Target Audience:

Intermediate-level and senior resident ophthalmologists who will be participating in MSICS procedures within one year would benefit most from this course. However, should time and space allow, junior residents would also find value in participation. Surgeons who perform conventional extracapsular cataract extraction and wish to learn the skills to perform MSICS are also appropriate course members.

Training Ratios:

Ideally, the course will have one trainee per wet lab station per half day, where a wet lab station includes a surgical microscope and necessary microsurgical instruments. For example, if the host facility has a total of four wet lab stations, the ideal ratio of trainees to trainers will be 8:1 (or 2 trainers, if available). If the host facility has a total of three wet lab stations, the ratio would be 6 trainees to 1-2 trainers, and so on.

To expand the number of trainees, one could consider creating an additional gross knot-tying station or an VR Magic EyeSi surgical simulator training station, if available. The addition of these stations could effectively allow for up to four more trainees.

Format:

All trainees shall receive the “key lectures” as a group. Then, trainees will be split into two groups in order to accommodate twice as many trainees as there are wet lab stations at the host facility. For example, if the host facility has a total of four wet lab stations, up to eight trainees may participate. They will be split into two groups of four. All eight trainees and any other interested ophthalmologists shall attend the key morning lectures. Then, one group of four will have hands-on wet lab training in the morning, and the other group will have their hands-on wet lab training in the afternoon. This allows for each trainee to have their own microscope and wet lab station for a dedicated three hours of hands-on surgical practice per day.

Criteria for Trainer or Mentor:

The ideal main trainer (referred to as *Trainer A* in this course outline):

- ✓ Trainer A is at minimum a fellow, but ideally a staff ophthalmologist with MSICS experience, who is involved in a residency program and can easily articulate technical maneuvers to beginner ophthalmologists.
- ✓ Experience performing MSICS and comfortable with all steps
- ✓ Experience teaching residents and beginners who may have little to no surgical experience
- ✓ Able to provide interactive lectures and hands-on instruction in the wet lab
- ✓ Ability to do simple troubleshooting with wet lab equipment (e.g. microscopes)
- ✓ Flexible and a problem-solver if resources or infrastructure fails (e.g. back-up plans for teaching and practicing if the generator fails and there is a black out).

The ideal supporting trainers (referred to as *Trainer B* in this course outline) doesn't require the same level of experience but should be at least a senior resident, and have sufficient experience to deliver the additional lectures and help out Trainer A in lab.



Please see the following suggested schedule:

Suggested Schedule					
	Day 1	Day 2	Day 3	Day 4	Day 5
8AM-10AM	ALL TRAINEES Lecture I: Overview of MSICS steps and detailed technique/tips for conjunctival peritomy and scleral tunnels	ALL TRAINEES Lecture II: Detailed technique/tips for paracentesis, viscoelastic (including types and purpose), anterior chamber maintainers. (If no second trainer, include Lecture A)	ALL TRAINEES Lecture III: Suture technique, knots, and approaching corneal laceration repair.	ALL TRAINEES Lecture IV: Detailed technique/tips for anterior capsulorrhexis (can opener, continuous curvilinear, "V"), hydrodissection, and nucleus extraction	ALL TRAINEES Lecture V: Detailed technique/tips for cortex removal, IOL insertion, irrigation/aspiration, closure AND Lecture VI: Management of common complications
AM (10AM-1PM)	GROUP 1 Wet Lab: Wound construction	GROUP 1 Clinical duties if no second trainer	GROUP 1 Wet Lab: Suturing	GROUP 1 Clinical duties if no second trainer	GROUP 1 Wet Lab: MSICS start to finish, suturing if time remains
	GROUP 2 Clinical duties if no second trainer	If second trainer, in-clinic observation and teaching of cataract evaluation	GROUP 2 Clinical duties if no second trainer	If second trainer, Lecture C: Patient consent and key documentation items	GROUP 2 Clinical duties if no second trainer
	If second trainer, Lecture A: how to use the surgical microscope and identification/purpose/handling of basic MSICS surgical instruments	GROUP 2 Wet Lab: Paracentesis and viscoelastic OR anterior chamber maintainer depending on host facility's preferred technique; continue practicing wound construction	If second trainer, Lecture B: Biometry with hands-on training and IOL selection	GROUP 2 Wet lab: Capsulorrhexis, hydrodissection, and nucleus extraction. Continue practicing previous steps if time remains.	If second trainer, Lecture D: Management of complex cataracts
LUNCH (1PM-2PM)	ALL TRAINEES	ALL TRAINEES	ALL TRAINEES	ALL TRAINEES	ALL TRAINEES
PM (2PM-5PM)	GROUP 1 Clinical duties if no second trainer	GROUP 1 Wet Lab: Paracentesis and viscoelastic OR anterior chamber maintainer depending on host facility's preferred technique; continue practicing wound construction	GROUP 1 Clinical duties if no second trainer	GROUP 1 Wet lab: Capsulorrhexis, hydrodissection, and nucleus extraction. Continue practicing previous steps if time remains.	GROUP 1 Clinical duties if no second trainer
	If second trainer, Lecture A: how to use the surgical microscope and identification/purpose/handling of basic MSICS surgical instruments	GROUP 2 Clinical duties if no second trainer	If second trainer, If second trainer, Lecture B: Biometry with hands-on training and IOL selection	GROUP 2 Clinical duties if no second trainer	If second trainer, Lecture D: Management of complex cataracts
	GROUP 2 Wet Lab: Wound construction	Clinical duties if no second trainer If second trainer, in-clinic observation and teaching of cataract evaluation	GROUP 2 Wet Lab: Suturing	Clinical duties if no second trainer If second trainer, Lecture C: Patient consent and key documentation items	GROUP 2 Wet Lab: MSICS start to finish, suturing if time remains

Lecture Topics and Objectives:

“Key Lectures” shall be presented to all trainees. The “Additional Lectures” are suggested topics, time permitting or if a second trainer is available.

Lectures on surgical steps and technique should include video for optimal training.

Key Lectures

- Lecture I: Overview of MSICS Steps and Detailed Technique/tips for Conjunctival Peritomy and Scleral Tunnels
 - By the completion of the lecture, trainees should be able to:
 - Name and describe all steps of the MSICS procedure
 - Describe the instruments needed, location, and preferred technique for conjunctival peritomy and creation of the scleral tunnel
 - Describe how to prevent and manage poor hemostasis, premature entry, shallow wounds, and button-holes
- Lecture II: Detailed Technique/Tips for Paracentesis, Entering the Main Wound, Viscoelastic Insertion, and Anterior Chamber Maintainers
 - By the completion of the lecture, trainees should be able to:
 - Describe instruments needed, location, and preferred technique for creation of the paracentesis, entrance of the main wound, viscoelastic insertion, and use of anterior chamber maintainers
 - Be aware of the importance of the angle and location of the paracentesis
 - Describe different types of viscoelastic (cohesive, dispersive, dual) and when they should be used
 - Be aware of the Blumenthal technique and optional use of an anterior chamber maintainer
- Lecture III: Suture technique, Knots, and Approaching Corneal Laceration Repair
 - By the completion of the lecture trainees should be able to:
 - Describe the preferred technique for corneal and scleral suturing with special focus on loading the needle under the microscope, the location of the needle in the forceps, handling of tissue, angle of needle entry and exit, preferred length and depth of sutures
 - Describe the throws and when to use 3-1-1, slip, and figure-of-eight knots
 - Name types of suture (braided vs monofilament, dissolvable vs permanent, prolene, nylon, vicryl, plain gut, gortex), describe their purpose, and give examples of their use
 - Name types of needles (spatulated vs cutting, curved vs straight), describe their purpose, and give examples of their use
 - Be aware of how to approach corneal and scleral laceration repairs in straight, jagged, or stellate configurations

- Lecture IV: Detailed Technique/tips for Anterior Capsulorrhexis, Hydrodissection, and Nucleus Extraction
 - By the completion of the lecture, trainees should be able to:
 - Describe the preferred method for the creation of a continuous curvilinear capsulorrhexis, can-opener capsulotomy, and V capsulotomy
 - Describe the advantages and disadvantages for each type of capsulorrhexis
 - Understand basic vector forces when creating a capsulorrhexis
 - Describe proper technique for hydrodissection
 - Describe the various methods for nucleus extraction including use of viscoelastic, irrigating and non-irrigating vectus, irrigation with cannula, and Simcoe irrigation
- Lecture V: Detailed Technique/tips for Cortex Removal, IOL insertion, Irrigation/Aspiration, Closure
 - By the completion of the lecture, trainees should be able to:
 - Understand the fluidics of irrigation/aspiration with the Simcoe
 - Describe the technique for cortex removal and viscoelastic removal
 - Describe the technique for handling, insertion, and proper placement of an intraocular lens
 - Understand the importance of proper IOL placement and describe the possible complications associated with poor or incorrect placement
 - Describe the basic types of IOLs by location and material
 - Describe how to check for stable wound closure at the end of the case
 - Describe the options for conjunctival closure (pull into place, cautery, suture)
- Lecture VI: Management of Common Complications
 - By the completion of the lecture, trainees should be able to:
 - Understand how to avoid and manage capsulorrhexis rents with techniques such as the Little Maneuver
 - Understand how to avoid and manage vitreous loss
 - Understand basic anterior vitrectomy
 - Describe when, if, and where to place an IOL in the case of anterior capsular tear or vitreous loss and how to choose the lens type and power
- Lecture A: Surgical Microscope Basics and MSICS Surgical Instruments
 - By the completion of the lecture, trainees should be able to:
 - Place themselves in a comfortable and ergonomic position at the surgical microscope
 - Know their pupillary distance
 - Know how to focus, zoom, X-Y, and center their surgical microscopes manually and with the foot pedals
 - Be able to name and visually identify the surgical instruments needed for MSICS and describe their use

- Understand how to properly care for wet lab instruments

Additional Lectures

- Lecture B: Biometry and IOL Selection
 - By the completion of the lecture, trainees should be able to:
 - Understand the basic lens formulas and understand the theory behind them
 - Understand and be able to perform A scans and keratometry by multiple methods
 - Troubleshoot and perform quality control with IOL selection (e.g. comparing the axial length of both eyes, checking the target refraction, checking for appropriate lens formula)
 - Describe different types of lens choices (acrylic, PMMA, foldable, one piece, three piece, anterior chamber IOLs) and when to use each type
 - Identify the A constant and how to account for this in IOL selection
- Lecture C: Patient Consent and Key Documentation Items
 - By the completion of the lecture, trainees should be able to:
 - Communicate with their patients the key points of surgery and articulate in layman's terms the risks, benefits, alternatives, and complications associated with surgery
 - Understand the importance of patient consent and establishing expectations
 - Know what key items to include in their pre-operative documentation (e.g. laterality, current refraction, target refraction, surgical plan, history of trauma or previous surgery, comorbidities such as glaucoma or pseudoexfoliation, special needs, plan for contralateral eye, etc)
- Lecture D: Management of Complex Cataracts
 - By the completion of the lecture, trainees should be able to:
 - Know how to plan and manage surgery in white cataracts
 - Understand maneuvers to prevent an "Argentinean flag sign"
 - Know how to plan and manage surgery in traumatic cataracts
 - Know how to plan and manage surgery in cataracts with zonular loss or history of pseudoexfoliation

Wet Lab Station Set-up:

Each wet lab station should be outfitted with the following equipment each day:

- Clean workspace
- Disposable gloves in small, medium, and large- ideally, non-latex to avoid allergic reactions
- Paper towels

- Water and detergent to clean instruments- ideally, distilled water to prevent rusting
- Piece of Styrofoam and 3-4 pins to mount the practice eye (These are reusable.)
- Chair- ideally one that adjusts in height
- Surgical microscope
- Instrument kit that includes the following:
 - Blunt Wescott Scissors (1)
 - 0.12 toothed forceps (1)
 - Utrada forceps (1)
 - Mosquito hemostat (1)
 - Hydrodissection cannula, 22G or 25G (1)
 - 5cc syringe (2)
 - 1cc syringe (1)
 - Sinsky hook (1)
 - Simcoe with tubing (1)
 - Vectus (irrigating or non-irrigating, 1)
 - Tying forceps (2)
 - Anterior chamber maintainer with tubing (1)
 - Microsurgical needle driver
 - Lens insertion forceps (optional, 1)
 - 10cc syringes (2 for AM session, 2 for PM session for injecting the vitreous if eyes are too soft, may be used for the week)

Wet Lab Daily Objectives and Additional Supplies:

Day 1: Wound Construction

- Objectives:
 - Completion of 4-8 conjunctival peritomies (4 per pig eye)
 - Completion of 4-8 scleral tunnels
 - Entrance of 4-8 wounds into the anterior chamber with the keratome through the scleral tunnel
- Additional Supplies
 - 2 pig eyes, per person
 - Basic saline solution bottle (2 per person)
 - Crescent blade (1 unused, per person if disposable)
 - Keratome blade (1 unused, per person if disposable)
 - Sideport blade (1 unused, per person if disposable)
 - Saline bag (1 for AM session, 1 for PM session to inject into vitreous if eyes are too soft)
 - 18G needle (2 for AM session, 2 for PM session for injecting the vitreous if eyes are too soft)
 - Viscoelastic (2 per person)
 - 22G anterior chamber cannula (disposable, 1 per person)

Day 2: Paracentesis/Viscoelastic/Wound Construction

- Objectives:
 - Completion of at least 4 paracentesis

- Completion of filling the anterior chamber with viscoelastic (1)
- Practice entering and exiting the eye with cannulas and theinsky hook until one is able to do so without difficulty (suggestion 20 times)
- Practice setting up anterior chamber maintainer and placing in the eye
- Completion of 4 conjunctival peritomies (4 per pig eye)
- Completion of 4 scleral tunnels
- Entrance of 4 wounds into the anterior chamber with the keratome through the scleral tunnel
- Additional Supplies
 - 1 pig eye, per person (may store the eye for use on Day 3 if supplies are limited)
 - Basic saline solution bottle (2 per person)
 - Crescent blade (1 unused, per person if disposable, may keep for Day 3)
 - Keratome blade (1 unused, per person if disposable, may keep for Day 3)
 - Sideport blade (1 unused, per person if disposable, may keep for Day 3)
 - Saline bag (1 per person)
 - 18G needle (2 for AM session, 2 for PM session for injecting the vitreous if eyes are too soft)
 - Viscoelastic (2 per person)
 - 22G anterior chamber cannula (1 per person)

Day 3: Suturing

- Objectives:
 - Learning to load the needle under the microscope
 - Practice properly handling instruments
 - Practice properly handling tissue
 - Completion of suturing at least 3 cornea lacerations (1 straight, 1 jagged, 1 stellate)
 - Completion of suturing at least 2 scleral wounds
 - Completion of suturing conjunctiva
 - Practice three types of knots (3-1-1, slip, figure-of-eight)
- Additional Supplies
 - 2 pig eyes, per person (1 may be new, 1 may be the eye from Day 2)
 - Basic saline solution bottle (2 per person)
 - Crescent blade (may use from Day 2)
 - Keratome blade (May use from Day 2)
 - Sideport blade (May use from Day 2)
 - Viscoelastic (2 per person)
 - 10-0 nylon (2 per person)
 - 9-0 nylon (2 per person)
 - 8-0 vicryl (1 per person)

Day 4: Capsulorrhexis/Hydrodissection/Nucleus Extraction

- Objectives:
 - Completion of at least 4 capsulorrhexis (3 continuous curvilinear on plastic eyes, 1 can opener on pig eye)
 - Completion of filling the anterior chamber with viscoelastic (4)
 - Completion of all steps of MSICS through nucleus extraction (1 pig eye)

- If time remains, may continue practicing suturing or wound construction on the pig eye
- Additional Supplies
 - 1 pig eye per person
 - 3 plastic practice eyes per person (Kitaro preferred, EC Phillips also acceptable)
 - Basic saline solution bottle (1 per person)
 - Crescent blade (1 unused, per person if disposable)
 - Keratome blade (1 unused, per person if disposable)
 - Sideport blade (1 unused, per person if disposable,)
 - Saline bag (1 per person)
 - 18G needle (2 for AM session, 2 for PM session for injecting the vitreous if eyes are too soft)
 - Viscoelastic (2 per person)
 - 5 cc syringe (1 per person)
 - 1 cc syringe (1 per person)
 - trypan blue (1 per person)
 - 22G anterior chamber cannula (2 per person)
 - cystitome (2 per person, may substitute a 27G needle if necessary)

Day 5: MSICS Start to Finish

- Objectives:
 - Completion of at least 2 MSICS, all steps
 - Completion of insertion and placement of IOL (4, may reuse lenses)
 - Completion of filling the anterior chamber with viscoelastic (4, may use lubricant to simulate viscoelastic)
 - If time remains, may continue practicing suturing or wound construction
- Additional Supplies
 - 2 pig eyes per person
 - Basic saline solution bottle (1 per person)
 - Crescent blade (1 unused, per person if disposable)
 - Keratome blade (1 unused, per person if disposable)
 - Sideport blade (1 unused, per person if disposable,)
 - Saline bag (1 per person)
 - 18G needle (2 for AM session, 2 for PM session for injecting the vitreous if eyes are too soft)
 - Viscoelastic (3 per person)
 - 5 cc syringe (1 per person)
 - 1 cc syringe (1 per person)
 - trypan blue (1 per person)
 - 22G anterior chamber cannula (2 per person)
 - cystitome (2 per person, may substitute a 27G needle if necessary)
 - IOL (per person: 1 piece PMMA, 1 three-piece acrylic)

Conclusions:



Changing the way the world sees.

Orbis International is dedicated to the furthering of ophthalmology education across the globe. We believe that the incorporation of a wet lab curriculum is critical to the surgical training of young ophthalmologists. Our hope is that the incorporation of this course, in addition to longitudinal tele-education, the establishment of on-site wet labs, and continuous hospital-based training programs, will enhance the clinical and surgical skills of eye care professionals to the highest of standards.

Annex A: Instructional Resources

The following is a list of resources that can support the preparation of lectures and discussion for the MSICS wet lab course. The resources with an asterisk (*) are recommended pre-ready for the course.

1. *Orbis Fundamentals of Manual Small Incision eCourse. www.cybersight.org
2. *Chapter 39: Management of Intraoperative Complications in Manual Small Incision Cataract Surgery. Arun Kshetrapal and Ramesh Kshetrapal
3. *Chapter 41: Pearls and Pitfalls in Small Incision Cataract Surgery. Rajesh K. Pawar.
4. *Recognizing 'high-risk' eyes before cataract surgery. Parikshit Gogate and Mark Wood. Community Eye Health Journal. March 2008.
5. *Small incision cataract surgery: tips for avoiding surgical complications. Reeta Gurung and Albrecht Hennig. Community Eye Health Journal. March 2008.
6. *Tilgana Eye Centre. Standard Operating Procedure Manual For: Modern Small Incision Cataract Surgery (SICS) NON-PHACO. Morans Eye Center, University of Utah, 2006.
7. *Tips for MSICS. Dr. Shivkumar Chandrashekharan, M.S; Cataract and IOL Services, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, India
8. Chapter 1: Clinical Significance and Relevance of Manual Small Incision Cataract Surgery in the 21st Century Era. Ashok Garg.
9. Chapter 2: The 3-in-1 Simplified Approach for ECCE, MSICS, and Phacoemulsification. Kadil Jojo Jr Sinolinding.
10. Chapter 32: MSICS in Difficult Situations. Arun Kshetrapal and Ramesh Kshetrapal.
11. Chapter 40: Management of Astigmatism in SICS. Kamaljeet Singh.
12. IOL Calculations Combined. Powerpoint.
13. IOL Designs and Materials. Yashpal Goel, Kirti Jaisingh and Kshitij Aditya. Guru Nanak Eye Centre, New Delhi, India.
14. IOL Power Calculation. Javed H. Farooqui and Dr. Ranjan Dutta.
15. Tele-medicine Wet Lab Cataract Surgery Course 2017. Instituto Regional De Oftalmologia (IRO).
16. Master's Guide to Manual Small Incision Cataract Surgery (MSICS). Jaypee Brothers Medical Publishes (P) Ltd. 2009.
17. Training Course in Manual Small Incision Surgery (MSICS). Amelia Geary. Orbis International. September 2016.
18. MSICS instrument cheat sheet
19. Manual Small Incision Cataract Surgery Booklet. Orbis International. 2006.
20. Subjective Refraction and Prescribing Glasses: Guide to Practical Techniques and Principles. Richard J Kolker, MD. November 2014.
21. Biometry. Suryakant Jha and Wangchuk Doma. Venu Eye Institute and Research Centre, Sheikh Sarai, New Delhi, India.
22. Video Content List- Demonstration videos.

**Annex B: International Council of Ophthalmology (ICO)
Ophthalmology Surgical Competency Assessment Rubric
(OSCAR) and adapted Ophthalmology Surgical Simulation
Competency Assessment Rubric (OSSCAR)**

Recommended to use the OSCAR or the adapted OSSCAR to assess the competency of each wet lab participant post course.

OSCAR: <http://www.icoph.org/resources/230/Surgical-Assessment-Tool-ICO-OSCAR-in-English-Chinese-Portuguese-Russian-Spanish-Vietnamese-and-French.html>

OSSCAR: <http://simulatedocularsurgery.com/simulation/cataracts/>