

Background

Welcome to this Online Learning Module on the BOOST app for Android phones and tablets. BOOST is a simple tool for routine monitoring of cataract surgical outcomes.

Why is it important to measure quality of cataract surgery?

- Quality of surgery and resulting patient satisfaction are the engines that drive a sustainable cataract service.
- We must be able to measure quality before we can improve quality
- Cataract surgery is very effective.
- Regular monitoring, reporting and continuous quality improvement processes can enhance the surgeon's skills, patient's outcomes and hospital performance.

Informal WHO consultation (1998) advised the following benchmarks: "Visual outcome is considered 'GOOD' if more than 80% of the operated eyes can see 6/18 or better and less than 5% cannot see 6/60 with available correction. With best correction, more than 90% of the operated eyes should be able to see 6/18 or better."

For the WHO assessment, the visual acuity must be measured between discharge and 12 weeks post-operatively. The PRECOG study used data from 4000 patients at 40 hospitals in LMIC's, where few patients return after their operation. It demonstrated that assessment of vision at discharge (1-3 days after surgery) could provide a reliable index of quality.

How does BOOST work?

- **Phase I:** Assesses existing surgical quality from post-operative uncorrected VA measured 1-3 days after surgery. All patient data are anonymised.
- After 60 records, you can see your own performance in graphs and tables:
- You can also compare anonymously against other users in database, either locally or globally.
- **Phase II** analyses results from 20 consecutive cases with poor vision (<6/60) at 4-12 weeks after surgery. The causes of Poor Visual Outcome are recorded as:
 - Inappropriate case selection / co-morbidities
 - Surgical complications
 - Refractive problems or inaccurate IOL
- BOOST suggests specific measures to correct the most common cause(s) of poor results

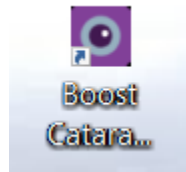
BOOST Synchronises data across all devices through cloud computing and displays on PC and Android devices. You must have an internet connection to synchronise your BOOST data.

How to use BOOST (PC Version)

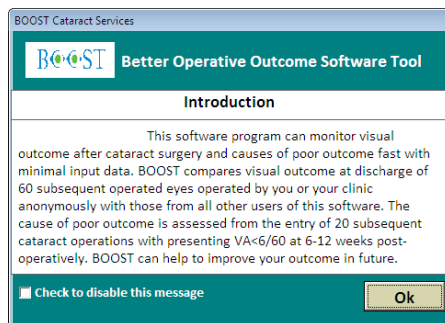
1. Register a BOOST account for your hospital online at: <https://boostcataract.org/Accounts/NewRegistration.aspx>

Keep the password for your account in a safe place.

2. Next, Download and install BOOST.exe file for Windows PC from: <https://boostcataract.org/appdwnld.aspx>
3. Follow the prompts to install and run BOOST. Once installed, you should see the BOOST icon on your desktop. If you have any problems installing BOOST, refer to BOOST PC download and installation guide.



4. Click on the BOOST icon to start BOOST. You will see an introduction message:




5. Login to BOOST using the account information you created in Step 1. You can reset your password with the 'Forgot password' option if needed.


A screenshot of the BOOST login window. The window has a title bar with a close button. The main content area is titled 'Login' in blue. It contains two input fields: 'Email Id' and 'Password'. Below the input fields are three buttons: 'Next', 'Exit', and 'Forgot password'. The 'Next' and 'Exit' buttons are purple, while the 'Forgot password' button is white with a purple border.

6. Once you are logged in, BOOST will open automatically. There might be a short delay in the program opening, depending on your PC system.
7. Once BOOST is open, you can change settings in the top menu bar to your preferences for:
 - Language (English, Spanish, French, Russian, Chinese, Indonesian, Vietnamese)
 - Eye indication (OD/OS, RE/LE)
 - Visual Acuity measurement: Feet, Metres, LogMar, Decimal, Francophone


BOOST Better Operative Outcome Software Tool




Data entry for visual outcome (Phase I)




Data entry for cause of poor outcome (Phase II)




Charts



Reports



Settings

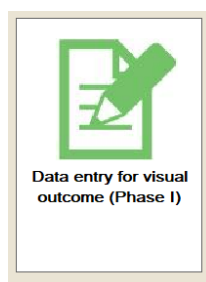


Exit

Current dataset: Visual outcome (Phase I)		Gender		Surgery type		% Good visual acuity ($\geq 6/18$)	
Records entered	0	Male	0%	IOL	0%	Pre-op	0%
Valid for analysis	0	Female	0%	No IOL	0%	Discharge	0%

Current dataset: Cause of poor outcome (Phase II)		Gender		Visual outcome		Cause of poor outcome $< 6/60$		
Records entered	0	Male	0%	BCVA $< 6/60$	0%	Selection	Optical correction	Surgical complication
Valid for analysis	0	Female	0%	BCVA $\geq 6/60$	0%	0%	0%	0%

8. If you already have BOOST account, your records will automatically be synchronised with the BOOST database, whenever there is a working internet connection.
9. You are now ready to start entering data. Select:



10. Follow the prompts to enter Phase I data. In Phase I, you record the vision for 60 consecutive patients receiving cataract surgery. You will then be able to compare your result anonymously with all other records in the database.

11. Criteria for inclusion of the 60 patients are: age between 30 and 120; only age-related cataract and no other eye problems like glaucoma, diabetes, etc. You can enter the data all at once or one by one over time. The system will help to keep track of the number of patients entered and when you are done. See below for Phase I data entry example:

Data entry for visual outcome (Phase I)

Overview current dataset

Dataset: Visual outcome		Gender		Surgery type	
Records entered	0	Male	0%	IOL	0%
Valid for analysis	0	Female	0%	No IOL	0%
% Good visual acuity (>=6/18)		Pre-op	0%	Discharge	0%

Dash board for Phase I

☐ Month☒ Year

Record no: 66

Patient id:

Active

Date of surgery:

17/01/2020

Age:

Sex:

ODOS

Pre operative best corrected visual acuity:

Eye operated:

Surgery technique:

☒ IOL☐ No IOL

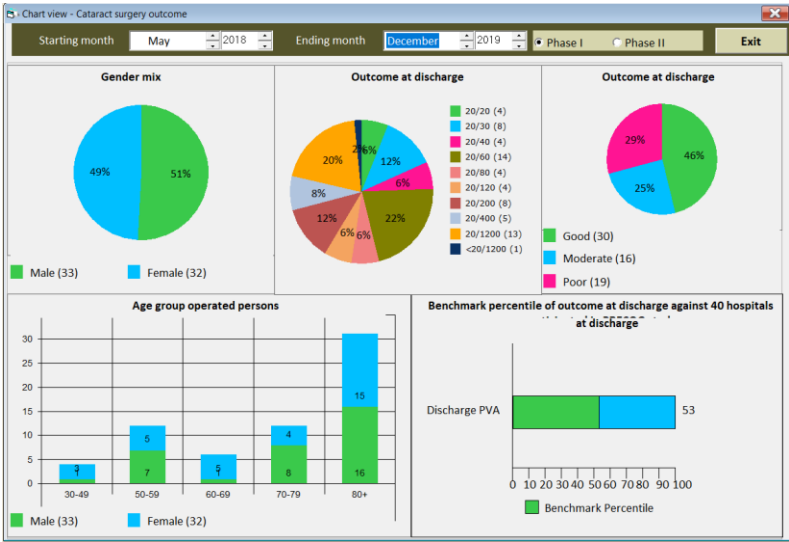
PVA - Discharge:

Save

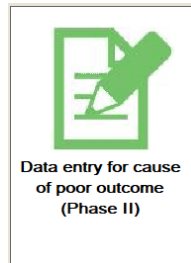
Clear

Exit

12. When you have completed 60 records, you will receive an automatic result comparing your outcome results against that of other BOOST users. You can also see graphs showing composition by age group and by gender; and Uncorrected VA outcomes at discharge as ‘Good’, ‘Moderate’ or ‘Poor’.




13. You are now ready to commence Phase II. For Phase II, enter 20 consecutive patients who cannot see 6/60 (poor vision) 4 to 12 weeks after their surgery. Phase II can be the same or different patients to Phase I.



14. Read the introduction information, then select 'Start' to begin entering data.

Phase II – introduction



- * Welcome to the BOOST cataract services - Phase II.
- * Please record vision data of 20 consecutive patients who have poor vision (presenting VA less than 20/200). and were operated at least 4 week and less than 12 weeks ago. These patients will not be the same as the patients you selected in Phase I. These will be patients presenting now, at least 4 weeks (and no more than 12 weeks) after surgery, and you likely will not have their baseline vision data entered in BOOST. That is all right.
- * BOOST will ask you for each patient to decide for each patient, what the reason is for the poor vision:
 - * The poor vision is due to another vision problem (such as glaucoma or diabetic eye disease) that the patient had already at the time of surgery.
 - * The poor vision is due to a complication immediately before (example: bleeding after retrobulbar injection), during (example: a tear in the posterior capsule) or after surgery (example: endophthalmitis).
 - * The poor vision is due to a refractive problem (need for distance glasses, no IOL, astigmatism from wound, etc).
- * As before, you can enter the records all at once or over time. All the records you enter will be automatically saved, and the system will help to keep track of how many patients you have entered and when you are done.

☐ Do not show for days.

15. For Phase II, you are asked to select the reason for poor outcomes. There are three options based on the most common causes of poor outcome: poor case selection, surgical complications and poor optical correction.

Overview current dataset							
Dataset: Cause poor outcome		Gender		Cause of poor outcome <6/60			
Records entered	0	Male	0%	Selection	0%	Optical correction	0%
Valid for analysis	0	Female	0%	Surgical complication			0%
BCVA <6/60	0%	BCVA ≥6/60	0%	Dash board for Phase II			
				<input type="checkbox"/> Month <input checked="" type="checkbox"/> Year			

Record no: 22

Patient id: Active

Date of surgery: 17/01/2020

Age:

Sex:

Eye operated:

Pre operative best corrected visual acuity:

Date of followup (between 4 to 12 weeks): 17/01/2020

Post operative - presenting VA:

Post operative - best corrected VA:

Cause of poor visual outcome:

Save Clear Exit

16. Once you have completed 20 records, BOOST will automatically provide suggestions how to improve visual outcome based on you own results.
17. For the BOOST research study, you can now return to Phase I and enter an additional for 60 consecutive patients receiving cataract surgery. If you are not a participant in the BOOST research study, you can continue to use BOOST to monitor your performance.
18. You can access your BOOST account and data at any time using your login details via:
- Android smartphone app
 - PC version
 - Online version

For any questions or issues, contact BOOST@hollows.org