

SUPPLEMENTARY MATERIAL

Table S1. Baseline demographics overall and in the three different patient groups.

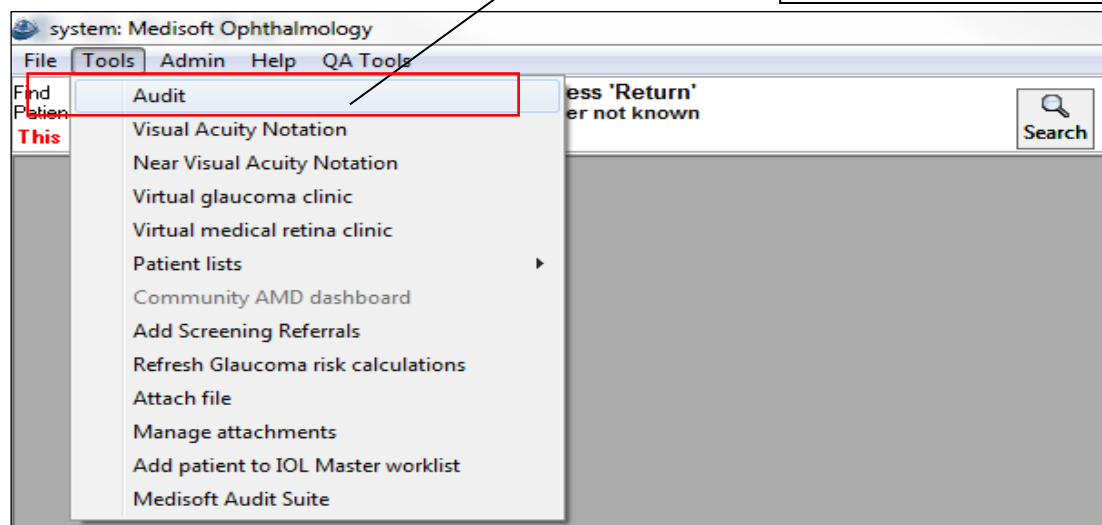
Parameter	Overall patient population <i>N</i> = 138	Group 1: Insufficiently responsive to ranibizumab <i>N</i> = 87	Group 2: Insufficiently responsive to macular laser therapy <i>N</i> = 32	Group 3: Unsuitable for ranibizumab or macular laser treatment <i>N</i> = 29
Age, years, mean ± SD [range]	64 ± 13.1 [27–86]	64 ± 13.2 [27–86]	65 ± 9.2 [49–82]	62 ± 15.7 [28–83]
Diabetes mellitus form, <i>n</i>				
Type 1	14	8	2	5
Type 2	112	74	26	18
Not specified	12	5	4	6
Sex, %				
Male	85	51	22	17
Female	51	34	9	12
Not specified	2	2	1	0
Lens status, <i>n</i>				
All eyes	251	174	50	40
Phakic	117	84	22	17
Pseudophakic	65	45	13	9
Not specified	69	45	15	14

SD standard deviation.

Appendix

1. Select Tool → Audit

This can be found after login at the top of your Medisoft screen.



2. Audit Screen

The Advanced tab allows more detailed specification of parameters, e.g. grade of anaesthetist or sex of patient

Output Options allows manual input of specific parameters

The screenshot shows the 'Audit And Clinical Management' software interface. The 'Advanced' tab is selected, displaying a tree view of report categories on the left and an 'Output Options' panel on the right. The tree view includes 'General' (with sub-items: Anaesthesia, Complications, Diagnoses, Export Data, Management Reports, Summary Reports and Graphs, Visual Acuity) and 'Cataract' (with sub-items: Glaucoma, Medical Retina). The 'Output Options' panel includes a 'Last seen' date range (From: 06/10/2004, to: 06/10/2009, inclusive), dropdown menus for 'Consultant', 'Surgeon', 'Anaesthetist', and 'Operation Category', and an 'Options' section with dropdowns for 'Interval' (1mm), 'VA Notation' (Snellen Metres), 'Dioptres' (< -5.00), 'VA Measure' (Any), and 'Post-Op Interval' (2-4 months). A 'Print' checkbox and a 'Run' button are also present.

The user can personalise output according the techniques and measurements that a particular surgeon may use, for example in terms of:

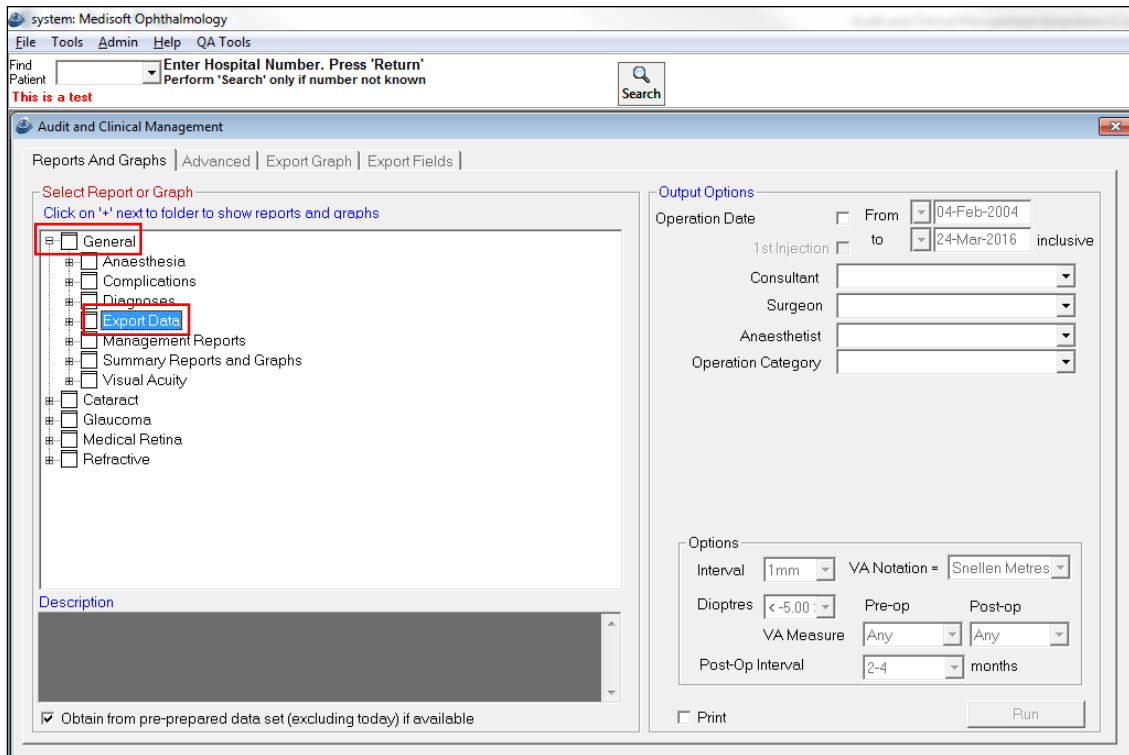
- VA notations
- VA Measures

Parameters include:

- Date
- Consultant
- Surgeon
- Anaesthetist
- Operation Category

3. General → Export Data

Reports in the 'General' section relate to procedures from every operation category.



4. Export Data → Create a dataset to export to Excel

The screenshot displays the Medisoft Ophthalmology software interface. At the top, the title bar reads "system: Medisoft Ophthalmology". Below it is a menu bar with "File", "Tools", "Admin", "Help", and "QA Tools". A search bar is present with the text "Enter Hospital Number. Press 'Return'" and "Perform 'Search' only if number not known". A red text indicator says "This is a test".

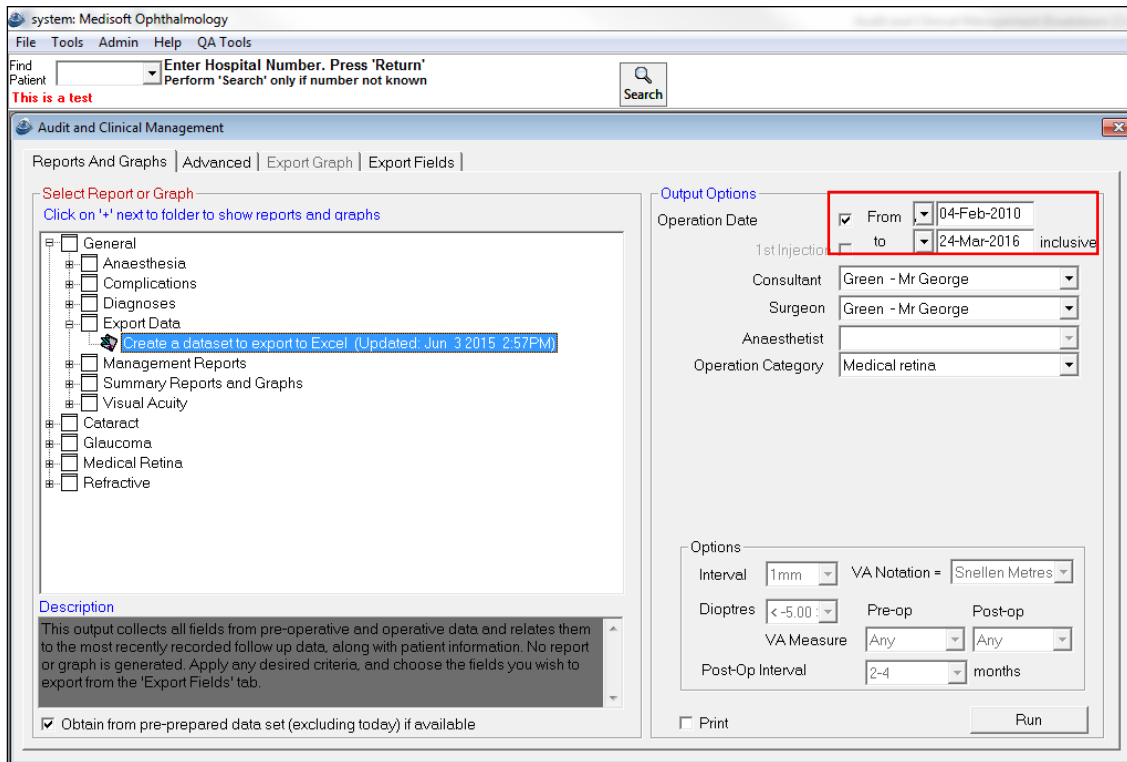
The main window is titled "Audit and Clinical Management" and has tabs for "Reports And Graphs", "Advanced", "Export Graph", and "Export Fields". The "Reports And Graphs" tab is active, showing a tree view of report categories. The "Export Data" report is selected and highlighted with a red box. A tooltip for this report reads: "Create a dataset to export to Excel. (Updated: Jun 3 2015 2:57PM)".

Below the tree view is a "Description" section with the text: "This output collects all fields from pre-operative and operative data and relates them to the most recently recorded follow up data, along with patient information. No report or graph is generated. Apply any desired criteria, and choose the fields you wish to export from the 'Export Fields' tab." A checkbox at the bottom of this section is checked and labeled "Obtain from pre-prepared data set (excluding today) if available".

To the right of the report selection is the "Output Options" section. It includes fields for "Operation Date" (From: 04-Feb-2010, to: 24-Mar-2016, inclusive), "1st Injection" (checkbox), "Consultant" (Green - Mr George), "Surgeon" (Green - Mr George), "Anaesthetist" (empty), and "Operation Category" (Medical retina). Below this is an "Options" section with "Interval" (1mm), "VA Notation" (Snellen Metres), "Dioptres" (< -5.00), "Pre-op" and "Post-op" VA Measure (Any), and "Post-Op Interval" (2-4 months). At the bottom right of the "Output Options" section are "Print" and "Run" buttons.

5. Identify patient who received Ranibizumab for DMO

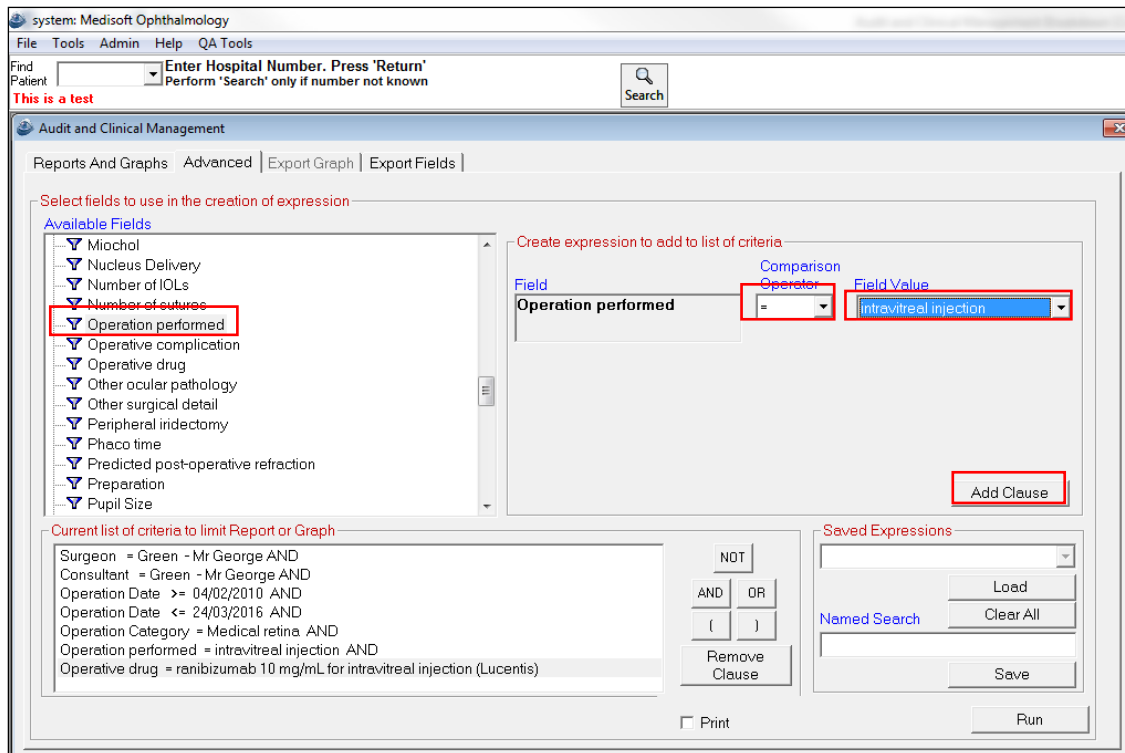
On the right hand side of the screen under Output options set the dates you wish to look at.



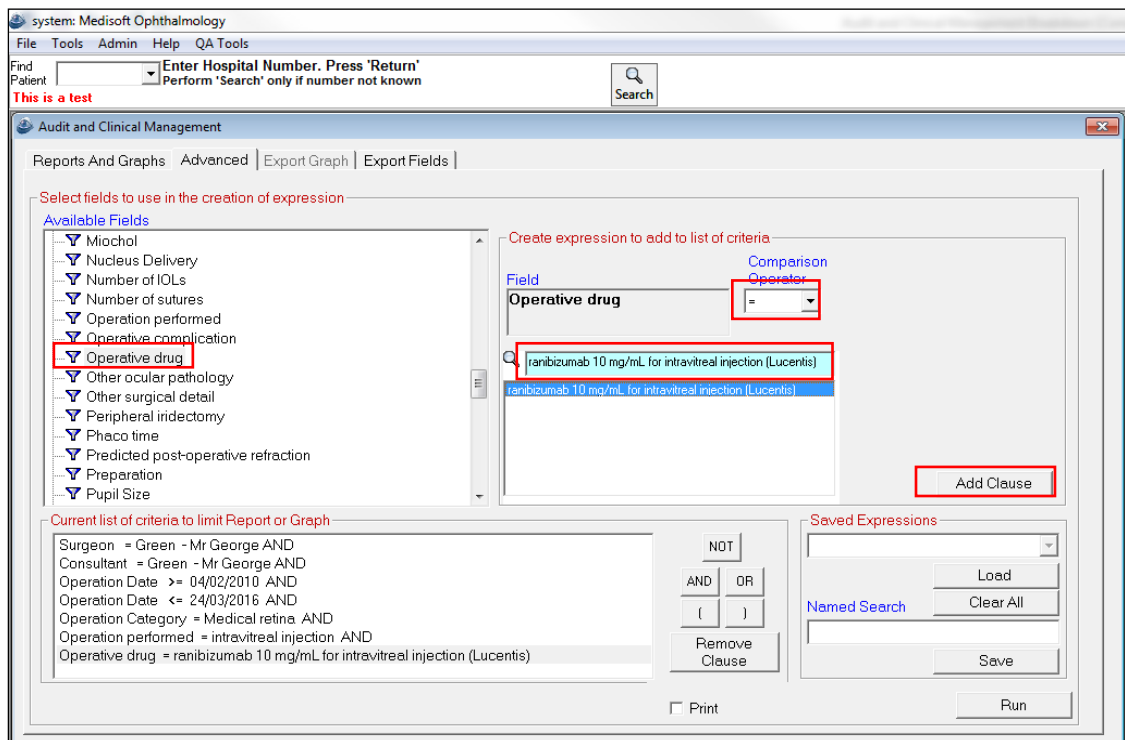
e.g.

01/5/2011
28/5/2014

For Group 1: Go to the advanced tab and under Operative Details set Operation performed = intravitreal injection and click 'Add Clause'



Also Select → Operative drug = Ranibizumab and Click ‘Add Clause’



- Go to the Export Fields tab and double click to select which columns you would like to see in Excel e.g. under Patient Details: hospital number, surname, date of birth; best corrected post op VA

system: Medisoft Ophthalmology

File Tools Admin Help QA Tools

Find Enter Hospital Number. Press 'Return'
Patient Perform 'Search' only if number not known

This is a test

Audit and Clinical Management

Reports And Graphs | Advanced | Export Graph | **Export Fields**

- Operation status
- Patient details**
 - Hospital number(s)
 - NHS number
 - NHS number status
 - Surname
 - Title
 - First name
 - Wishes to be called
 - Surname at birth
 - Date of birth
 - Age
 - Date of death
 - Sex
 - Ethnic origin
 - Marital status
 - Religion
 - Address line 1
 - Address line 2
 - Address line 3
 - Address line 4
 - Post code
 - Telephone
 - Occupation
 - Next of kin
 - Next of kin relationship

Required Columns

> >>

< <<

7. Identify patients who had macular laser for DMO

For Group 2: follow the above excluding 5. Go to the advanced tab and under Operative Details set Operation performed =macular laser and click 'Add Clause'

The screenshot shows the 'Audit and Clinical Management' window in the Medisoft Ophthalmology system. The 'Advanced' tab is selected, and the 'Create expression to add to list of criteria' section is active. The 'Available Fields' list on the left includes 'Operation performed'. In the 'Create expression' area, 'Operation performed' is selected in the 'Field' dropdown, '=' is selected in the 'Comparison Operator' dropdown, and 'macular laser' is selected in the 'Field Value' dropdown. The 'Add Clause' button is highlighted with a red box. Below this, the 'Current list of criteria to limit Report or Graph' shows existing criteria: 'Surgeon = Green - Mr George AND Consultant = Green - Mr George AND Operation Date >= 04/02/2010 AND Operation Date <= 24/03/2016'. The 'Saved Expressions' section is empty. At the bottom, there are buttons for 'Print', 'Run', 'Remove Clause', and 'Named Search'.

Repeat above for phacoemulsification + IOL

system: Medisoft Ophthalmology

File Tools Admin Help QA Tools

Find Patient Enter Hospital Number. Press 'Return'
Perform 'Search' only if number not known

This is a test

Audit and Clinical Management

Reports And Graphs | **Advanced** | Export Graph | Export Fields

Select fields to use in the creation of expression

Available Fields

- Miochol
- Nucleus Delivery
- Number of IOLs
- Number of sutures
- Operation performed
- Operative complication
- Operative drug
- Other ocular pathology
- Other surgical detail
- Peripheral iridectomy
- Phaco time
- Predicted post-operative refraction
- Preparation
- Pupil Size

Create expression to add to list of criteria

Field	Comparison Operator	Field Value
Operation performed	=	phacoemulsification + IOL

Current list of criteria to limit Report or Graph

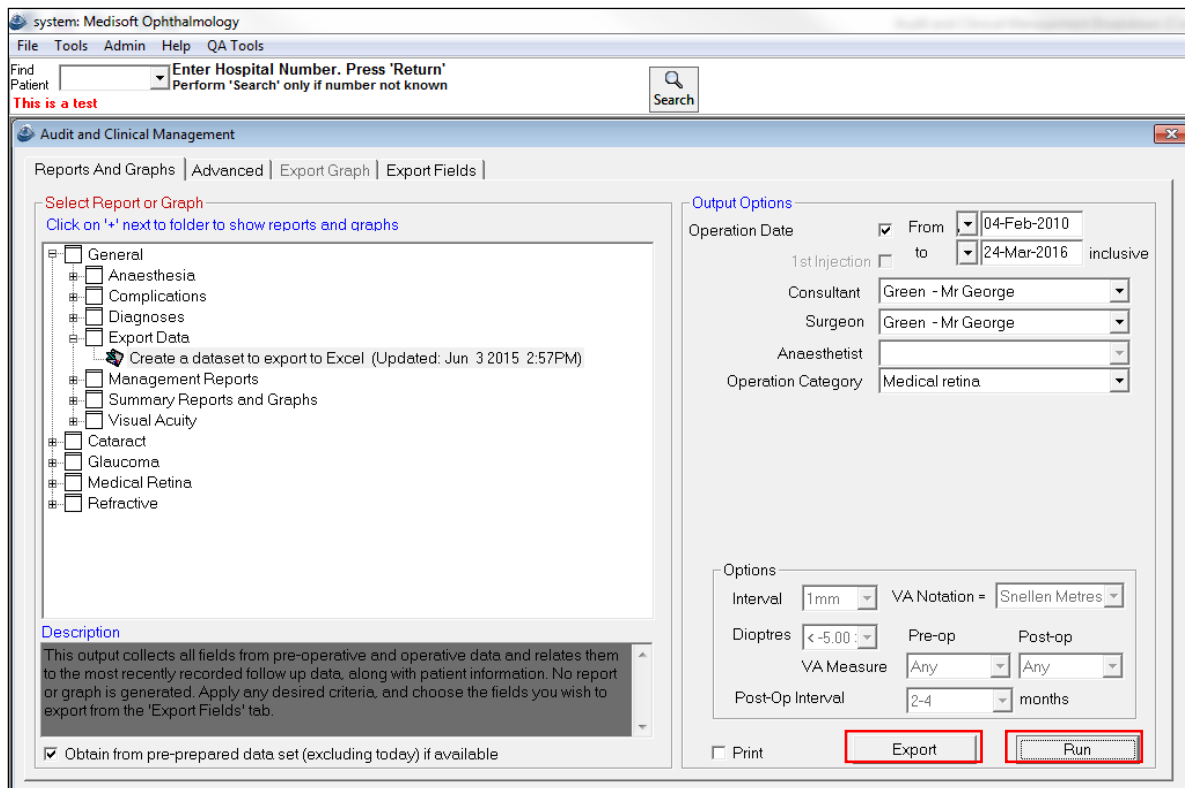
Surgeon = Green - Mr George AND
Consultant = Green - Mr George AND
Operation Date >= 04/02/2010 AND
Operation Date <= 24/03/2016

Print

Saved Expressions

Named Search

- Once all search parameters have been set for either Group and export fields selected. Go back to the Reports and Graphs tab and select Run in the bottom right hand corner. An Export button should appear to the left of this, when available select this and save the file.



- Navigate to the file and open it (it will open with Microsoft Excel).
- Manual Refinements in Excel
- Patient who have had macular laser and cataract extraction
- It may not be in the same eye (check and exclude as appropriate)
- The macular laser may have been for MO secondary to BRVO
- Manual check to include patient that had laser for DMO (exclude any RVO patients) and pseudophakia = suitable for intravitreal steroid implant