The Wrong Eye….The Wrong Implant
It can happen to you!
Event: The wrong lens implant

- 69 year old female underwent right phacoemulsification with intraocular lens implant
- After patient was discharged from the ASC, it was discovered that the wrong size lens was implanted
- Immediate disclosure occurred and patient was returned to surgery
- Lens was replaced with the accurate lens size without complications
Root Causes

- Order of surgeries was changed the day before
- New staff member completed surgeon dictation list without verifying information – didn’t understand the purpose of the list
- Implant size was written on the Time Out board using the dictation list, not the H&P
- Implant was verified using the Time Out board, not the H&P
- Discrepancy between the implant used and the implant ordered was not noticed when sticker was placed on the chart
Actions

- Implemented final verification by the surgeon prior to implant of the lens
- Immediate education of the staff regarding the new final verification step
- Real time audits of Time Outs including final verification for pre-sized implants (lens, breast implants)
- Operative and Other Procedure audits conducted on cataract surgeries and breast implant surgeries
Actions

• Event and subsequent actions were discussed at the following:
  – Quarterly Leadership Meeting
  – Quality and Patient Safety Council Meeting
  – Ambulatory Surgical Center Board Meeting

• Audits will continue until 4 consecutive months of 100% compliance are demonstrated.
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<th>United Kingdom 2003-2010</th>
<th>Thematic reasons for ‘wrong’ IOL implantation</th>
<th>Number of reports</th>
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<tbody>
<tr>
<td>1</td>
<td>Inaccurate biometry</td>
<td>29</td>
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<tr>
<td>2</td>
<td>Wrong IOL selection</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Transcription errors</td>
<td>10</td>
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<td>4</td>
<td>Handwriting misinterpretations</td>
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<td>5</td>
<td>Change in list order</td>
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<td>6</td>
<td>Right/left eye confusion</td>
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<td>Patient identification issues</td>
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<td>8</td>
<td>Misfiled biometry</td>
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<td>9</td>
<td>Wrong IOL written on theatre white board</td>
<td>4</td>
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<td>10</td>
<td>Optimal IOL power unavailable in stock</td>
<td>3</td>
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<tr>
<td>11</td>
<td>Wrong IOL power implantation after complicated surgery</td>
<td>3</td>
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<tr>
<td>12</td>
<td>Wrong patient notes</td>
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<tr>
<td>13</td>
<td>Communication errors</td>
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<tr>
<td>14</td>
<td>No causal reasons documented</td>
<td>62</td>
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<td></td>
<td>Total patient safety incident reports</td>
<td>164</td>
</tr>
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### 2009 United Kingdom Recommendations

**Suggestions for reducing ‘wrong’ IOL implantation**

- Follow best practice in capturing biometry and in IOL power calculations.
- Only rely on biometry source documents.
- Consider use of electronic patient records.
- Reduce potential for handwriting misinterpretations of IOL powers.
- Beware that abbreviation ‘D’ for diopter and ‘−’ for minus may confuse.
- Avoid use of operating theatre ‘white boards’ for IOL powers selection.
- Use of cataract pre-operative checklist and ‘time out’.
- Ensure adequate stock of IOLs ranges is in place in operating department.
- Write IOL power required clearly and in full.
- Circle or highlight the correct IOL power on the source IOL calculation print out.
Cataract Surgery Litigation

- A review of claims at the NHS Litigation Authority (NHSLA) found cataract care to be the largest share of litigation in ophthalmology and awarded the highest total damages
Further Surgery

- There were 47 reports where further surgical intervention was required.
- 46 patients underwent IOL exchange
- One patient underwent supplementary secondary piggyback IOL insertion
- 16 out of 46 patients had IOL exchange surgery undertaken on the day of initial cataract surgery
- 30 patients had delayed or staged IOL exchange
Academy Course

To err is human!
We all make mistakes!

• a typical day of high-volume cataract surgery is fraught with changing circumstances that could lead to human error.
• a simple misstep can result in devastating consequences for you and your patients
• It makes sense to look for ways to reduce the risk of one of the obvious accidents: implanting the wrong IOL into the eye
Expert Panel

- **Richard L. Abbott, MD**  Professor, cornea and external diseases, University of California, San Francisco, and secretary for the Academy’s Quality of Care and Knowledge Base Development.

- **David F. Chang, MD**  Clinical professor of ophthalmology, University of California, San Francisco, and in private practice, Los Altos, Calif.

- **Douglas D. Koch, MD**  Professor of ophthalmology, Baylor College of Medicine, Houston.

- **Richard J Mackool, MD**  Director, The Mackool Eye Institute, and senior attending surgeon, The New York Eye and Ear Infirmary, Astoria, N.Y.

- **Andrew P. Schachat, MD**  Professor of ophthalmology and vice chair for safety and quality, Wilmer Eye Institute, Baltimore, Md., and editor-in-chief, Ophthalmology.

- **Jack A. Singer, MD**  President, Singer Eye Center, Randolph, Vt.
Hand Offs are a Source of Error

In a typical preop routine, the surgeon chooses the IOL model and power, then the office staff faxes or calls in the order. The IOL is pulled and labeled at the ambulatory surgery center. During surgery, the circulating nurse must give the correct IOL to the scrub technician. This sequence creates several opportunities for potential miscommunication and errors.
Good Examples of Bad Mistakes

- Patients out of order
- Midsurgery mix-ups
- Same-name snafu
Patients out of order

- On the day of surgery, the order of scheduled patients might be changed for a number of reasons, including transportation delays.
- It then becomes possible to give patient B the IOL selected for patient A.
Douglas D. Koch, MD, Baylor College of Medicine

- an incorrect IOL was implanted because
  - nurses lining up the lenses for the scheduled patients did not account for scheduling changes,
  - the surgeon failed to check each lens and the IOL calculation sheet at the time of surgery.
  - When one patient canceled surgery, that implant was not pulled out,
  - the absent patient’s implant was therefore implanted in the patient who was next on the surgical schedule.
  - Regrettably, the error was not detected until three patients had been implanted with the incorrect lens
Midsurgery mix-ups

- Mistakes are also possible when a decision is made during surgery to change the IOL.

- If an intraoperative complication occurs while implanting a posterior chamber IOL, the surgeon might switch to an anterior chamber lens.
  - The surgeon simply makes an incorrect calculation by selecting a stronger power for the anterior chamber lens rather than a weaker power.
  - The surgeon does not have an actual calculation for the anterior chamber lens and does not correctly adjust the power.

- In eyes with axial myopia, the difference in power between the posterior and anterior chamber lens may be only 2 diopters.

- However, this difference can be as high as 4 diopters in patients who have short eyes.
Midsurgery mix-ups

- IOL measurements for both eyes were in the chart.
- The right eye was having surgery, but the surgeon looked at the printout and incorrectly selected the IOL measurement for the left eye.
- The policy on checking and double-checking during a time-out was not followed, and so the mistake was not caught.
Midsurgery mix-ups

- Some eyes don’t have automated calculations, increasing the risk of human error.
- One case in which there was a transposition error entered into the axial length.
- A meticulous technician had carefully remeasured, checked and rechecked, and got 26.3, 26.3 and 26.3 millimeters.
- Then very carefully entered 23.6 mm.
- “The surgeon should always query any pair of measurements for right vs. left eye wherein there is a difference of 0.3 mm or more and ask for more double-checking, or confirm any reason for such a difference.”
Same-name snafu

- two patients with the same last name have their IOLs inadvertently switched.
- several patients were scheduled to have cataract surgery on the same morning.
- The circulating nurse brought all the implants into the room.
- There were two patients with the same last name. “For the first patient, the incorrect lens was given to the surgeon, even though the name was checked.
- Fortunately, the mistake was realized before the second patient with the same name was done, and this patient received the correct implant.
Lucky is Good Richard L. Abbott, MD
Do not Count on it!

- One of the most interesting, and fortuitous, situations that I have ever seen was that of a colleague who implanted a 15-diopter IOL when a 25-diopter IOL was planned.
- He discovered his error several minutes after completing the procedure, and the patient was still in the OR.”
- I advised him to inform the patient and to change the implant at that time, but he was simply too distraught to act
- I was concerned about him and called him at 9 a.m. the next day.
- ‘I saw her this morning and she’s 20/20 uncorrected. I guess the biometry was way off.’
After a Mistake: Amending, Then Mending

- the right thing is to inform the patient immediately and then discuss options to resolve the problem.
- If the wrong IOL has been implanted, the experts noted that the options for correcting postoperative refractive error would be to:
  - exchange the IOL with the correct one
  - add a second (piggy-back) lens
  - to perform corneal refractive surgery.
Our Checklist
The informed consent form describes the procedure and operative eye.
Abbreviations are not acceptable.
Prior to administration of eye drops,
the nurse asks the patient which eye is to be operated on.
The patient’s operative eye is appropriately marked in the pre-operative holding area.
The pre-operative nursing staff ensures that all match for the operative eye.
the patient’s response
informed consent
doctor’s orders for dilation
The surgeon discusses with the patient the appropriate procedure and ensures that the appropriate eye is marked.
Operating Room Checklist

- The office chart notes are available in the operating room.
- Prior to draping, a time out is performed verifying:
  - Patient’s name
  - Patient’s birth date
  - Procedure
  - Operative eye
  - Lens implant style
  - Lens implant power
- Prior to draping, circulating nurse ensures that operative plan is visible so that the surgeon can read it while gowned and gloved.
- The circulating nurse writes the patient’s name, operative eye, IOL style, and IOL power on the white board.