



# Cataract Surgery Practices in the United States Veterans Health Administration

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## BACKGROUND

- Cataract extraction is among the most frequently performed surgical procedures in the United States (US)
- Few cataract surgery practice guidelines are backed by high-quality evidence, which may contribute to considerable variation in practice patterns
- Cataract surgery is rapidly changing, driven by cost, efficiency, and more patient-centered care

## OBJECTIVE

- Investigate current cataract surgery practice patterns in the US Veterans Health Administration (VHA), the largest provider of integrated health care in the US

## METHODS

- Anonymous online 32-question survey created using online survey program
- Inclusion criteria: a chief of ophthalmology at a Veterans Affairs (VA) facility where cataract surgery was performed
- Initial email with link to survey sent to participants in May 2016
- Two reminder emails sent to non-responders; remaining non-responders called twice over a two-week period; survey closed after two months
- Data analyzed using descriptive statistics

## RESULTS

- Complete survey results outlined in Tables 1-4
- Response rate: 75% (67/89)
- In 86% of sections, residents were trained in cataract surgery
- 74% of section chiefs reported high satisfaction with VA ophthalmology
- In 39% and 45% of sections, respectively, surgeons routinely ordered preoperative consultations and preoperative testing
- In 33% of sections, surgeons used intracameral antibiotics
- In 9% of sections, surgeons performed femtosecond laser-assisted cataract surgery (FLACS)
- In 92% of sections, surgeons offered toric intraocular lenses (IOLs); in 30%, they offered multifocal IOLs
- In 9% of sections, surgeons performed immediate sequential bilateral cataract surgery (ISBCS)

## CONCLUSIONS

- In most VHA ophthalmology sections, cataract surgeons train residents, perform clear-cornea cataract surgery with acrylic single piece IOLs and offer toric IOLs
- VHA cataract surgeons perform routine preoperative testing in almost 50% of facilities; FLACS and ISBCS have limited roles
- These results will help benchmark cataract surgery practice patterns in teaching hospitals and facilitate comparison of cataract surgery practices in non-VHA settings

TABLE 1. GENERAL QUESTIONS

| Question                                                                                                              | n  | Responses                                                                                                                                                                                                                                                                                                            | n (%)                                                                         |
|-----------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. Does your section train ophthalmology residents in cataract surgery?                                               | 66 | a. Yes<br>b. No                                                                                                                                                                                                                                                                                                      | 57 (86)<br>9 (14)                                                             |
| 2. How many cataract surgeries does your section perform a month?                                                     | 66 | a. 0-50<br>b. 51-100<br>c. 101-150<br>d. 151-200<br>e. 201+                                                                                                                                                                                                                                                          | 19 (29)<br>35 (53)<br>9 (14)<br>2 (3)<br>1 (2)                                |
| 3. On a scale of 1 being not at all satisfied to 5 being very satisfied, how satisfied are you with VA ophthalmology? | 66 | a. 1 = not at all satisfied<br>b. 2<br>c. 3<br>d. 4<br>e. 5 = very satisfied                                                                                                                                                                                                                                         | 3 (5)<br>3 (5)<br>11 (17)<br>30 (45)<br>19 (29)                               |
| 4. What do you consider the factor most needed to improve cataract surgery outcomes at the VA? †                      | 66 | a. Better facilities<br>b. Better equipment<br>c. Better staffing<br>d. Better access to continuing medical education (CME) training and courses for surgeons<br>e. Expanded operating room time<br>f. Faster turnover of patients in the operating room<br>g. More cataract surgeons<br>h. Other (please describe): | 7 (11)<br>7 (11)<br>9 (14)<br>3 (5)<br>14 (21)<br>10 (15)<br>5 (8)<br>11 (17) |

TABLE 2. PREOPERATIVE MANAGEMENT QUESTIONS

| Question                                                                                                                 | n  | Responses                                                                                                                                                                                                                                                                                                              | n (%)                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 5. Which of the following tests does your section use for routine preoperative testing for cataract surgery patients? †‡ | 65 | a. Section does not order routine preoperative testing<br>b. Complete blood count<br>c. Chemical analysis<br>d. Coagulation studies<br>e. Urinalysis<br>f. Electrocardiography<br>g. Echocardiography<br>h. Cardiac stress tests<br>i. Chest radiography<br>j. Pulmonary function tests<br>k. Other (please describe): | 36 (55)<br>22 (34)<br>23 (35)<br>11 (17)<br>8 (12)<br>24 (37)<br>1 (2)<br>1 (2)<br>7 (11)<br>1 (2)<br>1 (2)<br>10 (15) |
| 6. Which of the following providers does your section utilize for routine preoperative consultations? †‡                 | 66 | a. Section does not request routine preoperative consultations<br>b. Primary care provider<br>c. Cardiologist<br>d. Pulmonologist<br>e. Other (please describe):                                                                                                                                                       | 40 (61)<br>11 (17)<br>3 (5)<br>2 (3)<br>16 (24)                                                                        |
| 7. In your section, who routinely performs the biometry? ‡                                                               | 66 | a. One dedicated technician<br>b. Multiple technicians<br>c. Residents<br>d. Other (please describe):                                                                                                                                                                                                                  | 7 (11)<br>44 (67)<br>9 (14)<br>6 (9)                                                                                   |
| 8. In your section, what is the most commonly used method for biometry?                                                  | 65 | a. Contact ultrasound<br>b. Immersion ultrasound<br>c. Partial coherence interferometry (e.g., IOLMaster)                                                                                                                                                                                                              | 1 (2)<br>0 (0)<br>64 (98)                                                                                              |
| 9. In your section, what is the most commonly used method of anesthesia for cataract surgery?                            | 65 | a. Topical anesthesia with intracameral lidocaine<br>b. Topical anesthesia without intracameral lidocaine<br>c. Periorcular<br>d. Retrobulbar                                                                                                                                                                          | 50 (77)<br>2 (3)<br>4 (6)<br>9 (14)                                                                                    |
| 10. In your section, approximately what percentage of cataract surgery cases is performed with general anesthesia?       | 64 | a. None<br>b. <1%<br>c. 1%<br>d. 2%<br>e. 3%<br>f. ≥4%                                                                                                                                                                                                                                                                 | 4 (6)<br>40 (63)<br>9 (14)<br>6 (9)<br>4 (6)<br>1 (2)                                                                  |
| 11. In your section, what is the most common indication for using general anesthesia for cataract surgery? ‡             | 64 | a. Mental status, including severe claustrophobia<br>b. Patient request<br>c. Inability to position correctly<br>d. General anesthesia is not used in our section<br>e. Other (please describe):                                                                                                                       | 52 (81)<br>0 (0)<br>5 (8)<br>3 (5)<br>4 (6)                                                                            |
| 12. In your section, which of the following medications are routinely administered preoperatively? ‡                     | 65 | a. Antibiotic drops<br>b. Nonsteroidal drops<br>c. No medications are routinely administered preoperatively                                                                                                                                                                                                            | 38 (58)<br>34 (52)<br>24 (37)                                                                                          |

† Respondents were able to choose more than 1 category  
‡ Open-ended question

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TABLE 3. INTRAOPERATIVE MANAGEMENT QUESTIONS

| Question                                                                                                                                     | n  | Responses                                                                                                                                                                    | n (%)                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 13. Does your section perform femtosecond laser-assisted cataract surgery (FLACS)?                                                           | 66 | a. Yes<br>b. No                                                                                                                                                              | 6 (9)<br>60 (91)                                 |
| 13a. If Y, are residents being trained to perform FLACS?                                                                                     | 6  | a. Yes<br>b. No                                                                                                                                                              | 6 (100)<br>0 (0)                                 |
| 14. Does your section perform bilateral sequential cataract surgery at the same operating room visit?                                        | 66 | a. Yes<br>b. No                                                                                                                                                              | 6 (9)<br>60 (91)                                 |
| 14a. If N, for patients with bilateral visually significant cataracts, when do patients usually receive cataract surgery for the second eye? | 60 | a. Within 1 week of the first surgery<br>b. 2-3 weeks after the first surgery<br>c. 4 weeks after the first surgery<br>d. More than 4 weeks after the first surgery          | 3 (5)<br>22 (37)<br>21 (35)<br>14 (23)           |
| 15. For non-FLACS surgery, which type of incision does your section routinely use? ‡                                                         | 64 | a. Clear cornea no peritomy<br>b. Limbal incision with peritomy<br>c. Scleral tunnel with peritomy<br>d. Other (please describe):                                            | 60 (94)<br>3 (5)<br>1 (2)<br>0 (0)               |
| 16. For non-FLACS surgery, which type of blade does your section routinely use for the main incision? ‡                                      | 65 | a. Diamond blade<br>b. Metal blade<br>c. Other (please describe):                                                                                                            | 59 (91)<br>0 (0)<br>0 (0)                        |
| 17. Does your section perform manual extracapsular cataract extraction (ECCE)?                                                               | 66 | a. Yes<br>b. No                                                                                                                                                              | 42 (64)<br>24 (36)                               |
| 17a. If Y, approximately what percentage of cataract surgery cases is performed with manual ECCE? ‡                                          | 42 | a. <1%<br>b. 1 = 5%<br>c. >5%                                                                                                                                                | 34 (81)<br>8 (19)<br>0 (0)                       |
| 17b. If Y, what is the most common indication for performing manual ECCE? ‡                                                                  | 42 | a. Mature/dense cataract<br>b. Unable to phaco<br>c. Resident training<br>d. Other (please describe):                                                                        | 36 (86)<br>6 (14)<br>0 (0)<br>0 (0)              |
| 18. For experienced residents or staff surgeons, which of the following nucleofracts techniques is preferred in your section? ‡              | 66 | a. Divide and conquer<br>b. Chopping<br>c. Back chop/flip<br>d. Other (please describe):                                                                                     | 34 (52)<br>28 (42)<br>2 (3)<br>0 (0)             |
| 19. Does your section administer intracameral antibiotics?                                                                                   | 66 | a. Yes<br>b. No                                                                                                                                                              | 22 (33)<br>44 (67)                               |
| 19a. If Y, What is the most commonly administered intracameral antibiotic in your section? ‡                                                 | 22 | a. Cefuroxime<br>b. Moxifloxacin<br>c. Vancomycin<br>d. Other (please describe):                                                                                             | 5 (23)<br>11 (50)<br>4 (18)<br>2 (9)             |
| 19b. If N, What is the primary reason intracameral antibiotics are not used routinely in your section? ‡                                     | 44 | a. Risk of contamination<br>b. Risk of dilution error<br>c. Risk of increasing bacterial resistance<br>d. Institutional/pharmacy difficulties<br>e. Other (please describe): | 5 (11)<br>7 (16)<br>6 (14)<br>13 (30)<br>13 (30) |
| 20. Which type of intraocular lens (IOL) is most commonly used in your section? ‡                                                            | 66 | a. Single piece acrylic<br>b. 3-piece acrylic<br>c. 3-piece silicone<br>d. Other (please describe):                                                                          | 63 (95)<br>2 (3)<br>0 (0)<br>1 (2)               |
| 21. Which premium IOL(s) does your section offer? ‡                                                                                          | 66 | a. Toric<br>b. Multifocal<br>c. Accommodating<br>d. Section does not offer any premium IOLs                                                                                  | 61 (92)<br>20 (30)<br>5 (8)<br>4 (6)             |
| 22. Which of the following wound closure techniques is most commonly used in your section? ‡                                                 | 66 | a. No-suture<br>b. Single-suture nylon<br>c. Single-suture vicryl<br>d. Other (please describe):                                                                             | 63 (95)<br>1 (2)<br>1 (2)<br>1 (2)               |

TABLE 4. POSTOPERATIVE MANAGEMENT QUESTIONS

| Question                                                                                                         | n  | Responses                                                                                                                                                                                                                | n (%)                                                    |
|------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 23. In your section, which of the following medications are routinely administered postoperatively? †‡           | 66 | a. Antibiotic drops<br>b. Steroid drops<br>c. Nonsteroidal drops<br>d. Other (please describe):                                                                                                                          | 61 (92)<br>63 (95)<br>43 (65)<br>5 (8)                   |
| 24. In your section, what is the antibiotic of choice for routine administration of postoperative antibiotics? ‡ | 66 | a. Gentamicin<br>b. Moxifloxacin<br>c. Ofloxacin<br>d. Polymyxin<br>e. Section does not routinely administer antibiotics postoperatively<br>f. Other (please describe):                                                  | 1 (2)<br>45 (68)<br>9 (14)<br>4 (6)<br>2 (3)<br>5 (8)    |
| 25. In your section, what is the routine timing for the first postoperative visit? ‡                             | 66 | a. Patient is seen in the recovery unit on the day of surgery<br>b. Patient is seen in the Eye Clinic on the day of surgery<br>c. Patient is seen in the Eye Clinic the day after surgery<br>d. Other (please describe): | 1 (2)<br>13 (20)<br>51 (77)<br>1 (2)                     |
| 26. In your section, who routinely sees the patient on the first postoperative visit?                            | 66 | a. Eye technician only<br>b. Ophthalmology attending<br>c. Ophthalmology resident<br>d. Optometry attending<br>e. Optometry resident<br>f. Other (please describe):                                                      | 0 (0)<br>13 (20)<br>38 (58)<br>2 (3)<br>1 (2)<br>12 (18) |