Supplementary Online Content


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This supplementary material has been provided by the authors to give readers additional information about their work.
Equation. Medicare Value of Work

\[
\text{Medicare Value of Work} = \sum_{i=1}^{i=3} (N_i)(RVU_{i,PE})(CF)(GPCI_{PE}) + \sum_{i=1}^{i=3} (N_i)(RVU_{i,W})(CF)(GPCI_{W}) + \sum_{i=1}^{i=3} (N_i)(RVU_{i,PLI})(CF)(GPCI_{PLI})
\]

where \(i\) represents follow-up patients (\(i=1\)), new patients (\(i=2\)), and surgical patients (\(i=3\)). Medicare Value of Work represents the dollar amount for a group of patients for a specific geographic region.

CF = Conversion Factor for fiscal year which converts RVUs to dollars.

RVU = Relative Value Unit for each patient category (\(i=1, 2, 3\)), and are subspecialty dependent

GPCI_{PE} = Geographic Practice Cost Index (Practice Expense component),

GPCI_{W} = Geographic Practice Cost Index (Work component), and

GPCI_{PLI} = Geographic Practice Cost Index (Professional Liability Insurance component).

CF, RVU, and GPCI are given by Medical for the fiscal year. For the 2012 fiscal year, CF was $33.9764.
eAppendix. Quality Checklists*

Patient (medical record) oriented:

1) Comprehensive Adult Eye Evaluation
2) Cataract
3) Glaucoma
4) AMD

Office oriented:

1) Process

*Note: All questions are designed to be answered as “Yes/No/Unable to answer”, unless otherwise indicated; whenever possible, they are designed to be verifiable by chart or systems review by an external auditor. Medical records eligible for this evaluation should describe an initial evaluation and at least one follow-up evaluation during a six-month period.

All participants are required to complete the Comprehensive Adult Eye Evaluation and Process checklists, and would choose ONE of the three diagnostic checklists to complete. After completion and scoring, review of an educational module with multiple-choice questions will be completed. The same three checklists would be repeated, with the medical records of different patients, 1 month to 1 year after the first checklists were completed.
Comprehensive Adult Eye Evaluation

Note: For this survey, please use the most recent comprehensive examination available. In order to answer "Yes", evidence of the activity must have been recorded in the medical record.

1. Was the chief complaint documented?
2. Was the history of the present illness recorded?
3. Was an ocular medical history taken?
4. Was a pertinent systemic history taken?
5. Was a list of medications and medication allergies recorded?
6. Was a pertinent family history taken?
7. Was a pertinent social history taken?
8. Was a directed review of systems conducted?
9. Was mental status assessed and recorded?
10. Was best-corrected visual acuity measured?
11. Was the refractive state of the eyes determined?
12. Was the depth of the anterior chamber assessed?
13. Were visual fields by confrontation (at least) checked?
14. Was pupillary function assessed?
15. Was an external exam of the eye performed?
16. Was ocular alignment and motility assessed?
17. Was an anterior segment slit lamp examination performed?
18. Was intraocular pressure measured?
19. Was the time the IOP was measured recorded?
20. Was a dilated fundus exam performed with assessment of the disc, macula, vessels, and periphery?
21. Was your assessment and plan recorded?
Cataract

Note: For this survey, please use patient records in which the cataract extraction has already been performed, and the post-operative refractive status has been determined. In order to answer “Yes”, evidence of the activity must have been recorded in the medical record.

1. Was a history of the chief complaint obtained?
2. Was the ocular history obtained?
3. Was a general medical history documented?
4. Was a list of current medications and over-the-counter supplements that may interfere with cataract surgery recorded and evaluated?
5. Does the medical record document a functional abnormality that is affecting the patient’s lifestyle?
6. Was the decision to have cataract surgery made by the patient together with the surgeon, and was this decision recorded?
7. Was the visual acuity with current correction recorded?
8. Was the best corrected visual acuity (by refraction or pinhole) recorded?
9. Was the refractive state of the eyes determined?
10. Was an external exam performed?
11. Was ocular alignment and motility assessed?
12. Was pupillary function evaluated?
13. Was the IOP and time measured recorded?
14. Was slit lamp examination of the anterior segment performed?
15. Was a dilated exam of the lens, macula, peripheral retina, optic nerve, and vitreous performed, or documented why it could not be done?
16. Was an appropriate informed consent process conducted by the surgeon and documented?
17. Does the chart document that the risks, benefits, potential complications and alternatives have been discussed with the patient?
18. Were the refractive aims and expectations discussed with the patient before cataract surgery?
19. Was there a discussion with the surgeon regarding the various intraocular lens options?
20. Have the various options for treating the astigmatism, if present, been discussed and recorded?
21. Was a “time out” employed in the operating room immediately prior to cataract surgery to confirm the identity of the patient, the correct eye, and the planned procedure, and was this recorded in the medical record?
22. Was the desired refractive outcome achieved within +/- 1 D of the target postoperative refraction?
23. Based on patient reported outcomes (PROMs), was the patient questioned about his or her satisfaction with the outcome of cataract surgery?
24. Did the surgeon perform an evaluation of the patient between 6 and 48 hours post operatively?
25. Was the IOP measured on the first postoperative visit?
26. Did the surgery improve the patient’s functional impairment (or improve the visibility of an abnormal retina that may require treatment), and is there documentation to this effect in the record?
27. Did the surgeon personally see and examine the patient within 90 days prior to surgery?
28. Did you perform an additional check of the intraocular lens power prior to or at the time of cataract surgery by checking the contralateral eye for its refraction or inserted lens power?
Note: In order to answer “Yes”, evidence of the activity must have been recorded in the medical record.

1. Was the pertinent family history recorded?
2. Were the patient’s risk factors for glaucoma recorded at the time of the initial evaluation?
3. Was a history of maximum IOP (before treatment started) elicited, or procured from previous records, and recorded?
4. During the initial evaluation, was gonioscopy performed and recorded? 
5. During the initial evaluation, were the pupils checked for afferent pupillary defects?
6. During the initial evaluation, was corneal pachymetry performed?
7. During the initial evaluation, were baseline optic nerve or nerve fiber layer images (photos, scanning laser, optical coherence tomography, or laser polarimetry) obtained?
8. At least annually, was a dilated fundus exam performed?
9. At least annually, was the optic nerve examined stereoscopically?
10. During the initial evaluation, was quantitative visual field testing performed, unless the patient’s vision or mental status prevented it?
11. Was a target IOP set?
12. If this patient has early glaucoma, was he/she given - at the very least- annual appointments for evaluation?

-OR-

If this patient has moderate to advanced glaucoma, was he/she given - at the very least - semi-annual appointments for evaluation?
13. If this patient is taking topical medication, was the patient instructed regarding the proper use of eye drops, and was this instruction recorded?

-OR-

This patient is not taking topical medications because:
a. He/she has been treated with laser or incisional surgery for glaucoma;
b. He/she is being followed on no treatment.
14. If this patient is taking topical medication, have the times of the last application of glaucoma medicines been recorded?
15. At each visit, was this patient evaluated for adherence to treatment and were any departures from the regimen recorded?

1 Initial evaluation can span the first 3 visits within a six-month period.
16. At each visit, was the patient’s medical history updated and changes in medication noted?

17. At each follow-up visit, was the visual acuity measured?

18. At least annually, was quantitative visual field testing performed, unless the patient’s vision or mental status prevented it?

19. At each visit, was the intraocular pressure measured with applanation tonometry (or another reliable quantitative method), and time recorded, or an explanation of why this was not done?

20. At least annually, was a dilated fundus exam performed?

21. Were the most common and severe side effects of prescribed glaucoma medications discussed?

22. Has this patient been counseled about his or her prognosis?

23. Has this patient been counseled about the need for lifelong therapy?

24. Before prescribing glaucoma medication was the patient’s medical history reviewed for possible contraindications and interactions?

* Initial evaluation may occur over the first 2 visits.
Age-related Macular Degeneration

Note: In order to answer “Yes”, evidence of the activity must have been recorded in the medical record.

1. At the initial evaluation, was the patient’s family history of AMD recorded?
2. Were this patient’s systemic co-morbidities (diabetes, HTN) evaluated?
3. At the initial evaluation, were the patient’s medications and nutritional supplements recorded?
4. Were the patient’s ocular co-morbidities as they relate to the patient’s visual function recorded?
5. Was a history of smoking recorded?
6. Was an anterior segment exam performed?
7. Was the refractive state of the eyes determined?
8. At the initial evaluation, was pupillary function evaluated?
9. At the initial evaluation, were visual fields assessed (at least by confrontation)?
10. Was an external examination of the orbits/eyelids/ocular adnexa performed?
11. Is ocular alignment and motility assessed at least at the initial evaluation?
12. At each visit, was the patient asked about symptoms of metamorphopsia (e.g., Amsler grid) and any changes noted?
13. At each visit, was the best-corrected visual acuity (or pinhole vision) measured and recorded?
14. At each examination visit, was a dilated fundus exam performed?
15. At each examination visit, was the macula evaluated with stereo biomicroscopic examination?
16. Does the recorded diagnosis indicate dry or wet AMD and its level of severity?

17. If this patient’s history or physical findings were suspicious for exudative AMD, was fluorescein angiography or OCT obtained?

-OR-
If this patient’s findings were not suspicious for exudative AMD, were these negative findings recorded?
18. Was this patient with dry AMD seen at least annually, or a reason recorded for not doing so?
19. If this patient has exudative AMD were anti-VEGF therapies discussed?

-OR-

If this patient has dry AMD was the use of AREDS supplements discussed?

20. If this patient had anti-VEGF injections, was he/she counseled about the signs and symptoms of endophthalmitis?

-OR-

I refer all such patients to retina specialists.

21. If this patient has low vision, was he/she referred for mobility or low vision training?

22. Was the patient counseled about their visual prognosis and risk of vision loss in the fellow eye?

23. Was the patient advised to check their vision at least weekly with an Amsler grid or equivalent?
Process

1. Does your office provide an option for new patient information to be sent to patients to fill out before their visit?
2. If answer to 1. is yes, is this new patient information offered online?
3. Do patients receive a reminder phone call prior to their appointment?
4. Is insurance information collected at the time the appointment is made?
5. Do you check insurance or deductible information prior to the patient’s visit?
6. Does your front office verify insurance information when patients check in?
7. Do you document patient check-in time?
8. Does your front desk notify patients of applicable charges for refraction?
9. Are co-pay balances collected at the front desk before the visit?
10. Do you have education materials available to patients in the office?
11. Do you accommodate patients who are early for their appointments whenever possible?
12. Do you have a separate waiting room for patients after they are dilated?
13. Does your staff notify patients of applicable charges for refraction?
14. Are patients seen by the technician and doctor in the same exam room?
15. Do you document the patient’s time with the technician?
16. Do patients wait in the exam rooms while they are dilating?
17. Is a staff member assigned to manage patient flow?
18. Do you routinely monitor patient wait times?
19. Are patients seen by their first examiner (tech, nurse, or doctor) within 15 minutes of the scheduled appointment time?
20. Do you greet the patient by name when you walk into the exam room?
21. Do you introduce yourself to new patients when you first greet them?
22. Do you shake the patient’s hand when you walk in?
23. Do you wash or sanitize your hands before examining every patient?
24. Do you ask the patient if they have any remaining questions before concluding the visit?
25. Do you shake the patient’s hand at the conclusion of the visit?
26. At the end of the visit, do you leave the exam room before or after the patient?

27. Are follow up appointments made before the patient leaves the office?

28. If patients require a non-emergent laser, is it performed at the time of the visit, or must they return another day?

29. When patients schedule surgery, do you give them a copy of the signed informed consent form?

30. At the time of surgery, do you verify patient identity with a SSN and DOB, or other unique identification number?

31. In the time-out process, are the surgeon, a member of the nursing team, and a member of the anesthesia team included?
**eTable 1.** Patient Weighting Used to Calculate the Adjusted Number of Patients

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<th>Subspecialty</th>
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$X_i$: weighting for follow-up patients (i=1), new patients (i=2), and surgical patients (i=3)

**eTable 2.** CMS-Assigned RVUs for the 2012 Fiscal Year for Each Subspecialty

<table>
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<th>Subspecialty</th>
<th>RVU$_{1,W}$</th>
<th>RVU$_{1,PE}$</th>
<th>RVU$_{1,PLI}$</th>
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<th>RVU$_{2,PE}$</th>
<th>RVU$_{2,PLI}$</th>
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CMS: Centers for Medicare and Medicaid Services; RVU: relative value units for follow-up patients (i=1), new patients (i=2), and surgical patients (i=3). W: work component; PE: practice expense component; PLI: professional liability component
eTable 3. Example Calculations for the Efficiency Index

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<td>58</td>
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<td>$61,565</td>
<td>$91,295</td>
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<td>0.85</td>
<td>0.0486</td>
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<tr>
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<td>336</td>
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<td>1.20</td>
<td>0.00007</td>
<td>0.90</td>
<td>0.5546</td>
</tr>
</tbody>
</table>

N1: follow-up patients; N2: new patients; N3: surgical patients; Na: adjusted number of patients; Ca: adjusted cost; Q: quality; E: efficiency index