

## Optometric Case Vignettes for the Clinical Preceptor | 1

Third-year optometric interns generally enter their clinical rotations at a point in their education where they are making the transition from thinking as students to thinking as clinicians. This transition is reflected in how they present their cases to their preceptors, as well as in the quality of their assessments and plans. Historically, healthcare disciplines have used case studies to enhance knowledge base and clinical proficiency. Optometry is no exception, and students have been shown to learn well from hands-on opportunities to report to their preceptors and receive feedback from them.

As preceptors in a community health center setting, we decided to develop nine case vignettes to test whether leading our students through practice scenarios would equip them to make the transition more quickly. The healthcare landscape is focused more than ever on productivity, and preceptors must constantly balance this with teaching their interns. While the Teaching Case Reports currently published in the journal *Optometric Education* are effective tools for teaching when adequate time is available, preceptors often have only 5-10 minutes at a time to have teaching moments during the daily course of patient care. The vignettes we developed enable us to present extra material to the students for testing themselves (with no grading) on their entering status in presenting cases or writing management plans.

The vignettes are based on actual patients seen in the clinic, and we adjusted them to be theoretical case scenarios that test student readiness to handle complex situations involving analytical thinking and pattern recognition. Examples include knowing what to do with a patient taking hydroxychloroquine, recognizing increased intraocular pressure and understanding what needs to be done for follow-up, and awareness of the philosophy of refraction. The nine case vignettes form our “case bank,” and we also developed an answer key with discussion questions and references to serve as a Preceptor Guide.

Multiple preceptors in two different clinical settings tested the case vignettes, with the same results. Students reported the cases to be helpful exercises in the real-time clinical setting.

### Evaluation of the Usefulness of the Case Vignettes

To test the case vignettes, preceptors presented nine of them (with intentionally varied topics and level of complexity) to third-year optometry students at two different clinical sites. The initial presentation of the exercise included this summary of basic principles for writing assessments and plans:

1. Every diagnosis should have a matching plan, even if it is to just monitor yearly.
2. Chief complaint should be listed as first assessment.
3. Think of an assessment as the problem and the plan as the action we are taking. For example, “dry eye” is the assessment and “Rx Refresh Optive ophthalmic solution 1 drop TID OU” would be the plan, because it’s the action we are taking to address the problem.
4. Your assessment should reflect the diagnosis for which you are coding on a billing sheet/screen. The primary diagnosis would be the first assessment listed.
5. Sometimes you don’t know the diagnosis, but can write “diagnosis A vs. diagnosis B” and create a plan to do further testing.
6. Do not list a test as the first work in your diagnosis. “HVF normal” is not appropriate as an assessment. “Hx of long-term therapy with Plaquenil x 6 years; HVF 10-2 today within normal limits” is appropriate.
7. Even if a test is normal, sometimes you need to list it in your assessment and plan. “History of retinal detachment s/p laser repair 2011 OD” is very appropriate to list as an assessment further down your list. This way you are aware of it the following year. Another example is “History of narrow angles, open to gonioscopy in 2017 OU” or “History of uncontrolled Type II diabetes mellitus with no retinopathy or CSME.” All of these have an impact on subsequent exams.

The students were split evenly into an experimental group and a control group with a mix at both sites. Before and after the exercise, both groups completed a survey about their comfort level developing an assessment and plan using a 5-point Likert-style scale. They also rated the nine cases on level of difficulty using a 5-point scale as part of the conclusion survey following the study. The study group received three cases from the bank per week, developed an assessment and plan based on the cases provided, then participated in small group discussions about the cases. The small group discussions

## Optometric Case Vignettes for the Clinical Preceptor | 2

were outlined to address the knowledge base of the topic, analytical thinking skills, development of differential diagnosis, and final development of an assessment and plan. This pattern continued over 3 weeks until all nine cases were reviewed. The control group then received the same cases after the “study period” so that no students were deprived of a potential learning activity.

Our initial hypothesis was that third-year optometry interns who were given formal guidelines on writing assessments and plans at the beginning of the semester rather than 1 month into their rotation would show a faster learning curve for developing their management plans. As the exercise went through 2 full years of interns, we found no significant difference between the control group (receiving the exercise 1 month into the rotation) vs. the experimental group (receiving 3 cases each week for the first 3 weeks). Our team believes that one factor that negated the difference in timing could be the need for adjustment and acclimation to a new clinical environment and electronic health record system. Therefore, it appears appropriate to allow time for adjustment to the new clinical setting before issuing these case vignettes.

Both groups reported improved comfort in writing an assessment and plan over the 3-week study period. Students consistently said that they found the exercise helpful during any semester. They saw value in hearing what their peers added to each other’s management plans, working toward a collective goal of a comprehensive plan. During the first few cases, some students were timid, but it was evident that the small group setting was less threatening and more comfortable for them to make mistakes or forget to include a certain element. Students started volunteering to read their plans more readily toward the end of the nine cases.

We received other useful feedback about the exercises as well, such as the students’ appreciation of being able to review concepts they had learned in the classroom.

### How to Apply These Exercises

Preceptors can release three cases at a time, asking students to use each case as a worksheet. Our students have either written on the side of the case, used a separate notebook or paper, or typed their management plans. This exercise can also be used as a way to improve case presentation skills. In that situation, the case findings would be handed to the students, and they would be given a set amount of time to read the exam details before role-playing in presenting the case to the preceptor.

For management writing, here are some options for proceeding:

1. With 10-15 minutes available in the clinic, gather the students to discuss their assessment and plan, asking for one volunteer per case. (We did not read the case out loud again, in the interest of time, but quickly summarized before discussing the plan.) Each case discussion can take anywhere from 5-25 minutes, depending on case complexity and tangential discussions.
2. Read out loud or present on the screen partial exam findings up to a certain point to quiz students on what further testing may be necessary.
3. The exercise can be used as a worksheet that is turned into the preceptor who reviews it and hands back written comments. However, discussion is highly encouraged when handing comments to the student.

The Preceptor Guide is used for leading discussions and creating new side discussions based on points raised by the students. We have developed common “side trip” discussions to facilitate deeper analysis. A survey can be done pre- and post-exercise to measure learning outcomes for the students’ comfort level in writing management plans or presenting case findings.

To request copies of all the cases currently in our case bank, email [Dr. Amy Moy](#) or [Dr. Jennifer Reilly](#).

### *Case 1 and Sample Preceptor Feedback for Student*

**Figure 1** shows Case 1 as presented to the students. **Figure 2** shows one student’s response. The following preceptor comments were conveyed verbally to the student in a mini-discussion setting.

Optometric Case Vignettes for the Clinical Preceptor | 3

**Case 1**

**CC and HPI:** 75 y.o. Hispanic female with blurry vision at distance and near x1 month with current glasses. Feels that blood sugar has been high lately. Ranges from 90-300mg/dL from day to day. Both eyes water and burn sometimes. Does not use any eye drops. Likes to watch TV.

**MedHx:** Type II DM x10 years, poorly controlled. Does not know A1c. Takes Metformin. No allergies.

**Entrance Tests:**  
DVA cc: VA 20/40 OD and OS, no improvement on PH OD and OS  
Near VA cc: 20/48 OU  
PERRL, APD, FESA, PCF full OD, OS  
CTax of iris at O and N

**Refraction:** Fluctuating during refraction  
R: +2.00 -0.50 x180 20/40  
L: +1.50 -0.50 x180 20/40  
+2.00 add 20/30 both eyes

**Anterior Seg:**  
External: unremarkable  
Lids/Lashes: 1+ MGD both eyes  
Cong: mild pingueculae nasally both eyes  
Cornea: mild arcus both eyes  
Iris: flat both eyes, no HV OU  
Angles: 1:1 OU  
A/C: deep and quiet both eyes  
TBUT: 2 seconds each eye  
KOP: 25, 20 R, L @9:30 am by GAT

**Dilated Posterior Seg:**  
Media: slight haze both eyes  
Lens: Gr. 2 NSC both eyes  
Margins: distinct  
Rings: none both eyes  
C/D: 0.3 HV R, L  
Mac: clear with no apparent CSME both eyes  
FRT: - both eyes  
Periphery: no holes, tears, breaks 360° R, L  
No H/MAs, No VR, no IRMA, no neovascularization, no atretia both eyes

**Posterior Pole OCT** performed today, confirmed no maculopathy in both eyes. OD G value 24, OS G value 25.

Write your full assessment and plan for this patient, taking into account ocular and systemic issues, and always making sure to fully address the chief complaint. There are several ways to manage this patient.

Ms. Kelly, Ph.D., New England College of Optometry, 2021

**Figure 1.** Case 1 as presented to the students. [Click to enlarge](#)

**Case 1**

- Grade 2 Nuclear sclerotic cataract with reduced visual acuity, both eyes.
  - Likely uncontrolled Type 2 diabetes contributing to rapid formation and visual degradation by the cataract.
  - Educated patient about the importance of good blood sugar control and its effect on maintaining good vision.
  - RTC 6 weeks for re-refraction and visual assessment, sooner if any changes.
- Type 2 Diabetes without retinopathy
  - OCT of the macula of both eyes performed today, no evidence of maculopathy. Results are within normal limits.
  - Patient educated about the importance of good blood sugar control and regular follow ups with PCP and/or endocrinologist for routine blood tests including the HbA1c. Warned about signs and s
  - Communication about today's findings sent to patient's endocrinologist and PCP.
  - RTC 6 months for dilated fundus exam, sooner if any changes.
- Meibomian Gland Dysfunction
  - Begin warm compresses BID x10 minutes, followed by Ocusoft lid scrubs, and preservative free Refresh Optive artificial tears 1 qt both eyes QID
  - Educated patient about the importance of taking breaks from screens and its effect on eye health. Recommended the 20-20-20 rule: every 20 minutes of screen time look at something 20 feet away and blink for 20 seconds.
  - RTC 6 weeks for anterior surface check, sooner if any changes.
- Mild Pingueculae Nasally in Both Eyes
  - Recommended use of sunglasses at all times of year whenever outdoors. Patient may opt for shielded sunglasses for added protection from sunlight and wind.
  - Educated patient about the importance of protecting eyes from sun and wind in order to help prevent condition from worsening.
  - RTC 1 year for surface check, sooner if any changes.
- Compound hyperopic astigmatism with the rule, and presbyopia, both eyes.
  - No improvement in vision upon refraction. Vision reduction likely due to cataract formation and uncontrolled Type 2 Diabetes. No glasses dispensed today.
  - Educated patient about findings and the importance of good blood sugar control to maintain good vision.
  - RTC 6 weeks to re-check vision and refraction, sooner if any changes.

**Figure 2.** One student's worksheet in response to Case 1. [Click to enlarge](#)

*From Dr. Moy:* This looks very comprehensive. I would use caution to order the assessment items in order of how we would code for this exam. Since this exam is a routine eye exam and the patient's chief complaint is blurry vision with glasses, then the refractive error item goes first. I would include dry eye in tandem with the meibomian gland dysfunction (MGD) diagnosis, and rate the severity of this condition as moderate severe, due to the low TBUT and 1+ MGD. I like that the student included the brand of artificial tear recommended to the patient. This is really key when we follow up on her dry eye symptoms later on and potentially adjust the kind of drops used. The presence or lack of macular edema should also be noted in the assessment and plan for any diabetic patient. I like how the cataract findings were written such that it's clear that there is visual impact and there is a plan to follow up due to the progression of the cataract density.

*From Dr. Reilly:* This is very thorough, but I would aim to make some of the plan components more concise. For example, the blood sugar education under the refractive error can likely be excluded in that line item since it is already discussed

Optometric Case Vignettes for the Clinical Preceptor | 4

under diabetes in assessment #2. The diabetic line item should also specify presence or absence of macular edema. I often do not comment on mild pingueculae in an assessment unless there is an abnormality present to be addressed. I would reorder the assessment items to reflect the refractive error first, and then work my way anterior to posterior segment addressing any medical diagnoses.

*From Dr. Pham:* The cataract grade is appropriate for the patient’s age; therefore, it is not “likely related to uncontrolled diabetes,” and there is no evidence for that. Cortical cataracts are more likely related to diabetes than nuclear sclerotic cataracts. I would comment on whether or not the cataracts are visually significant, which would determine whether or not a referral is warranted. I would recommend UV eye protection to reduce cataract progression. For diabetes without retinopathy, it is missing right, left, or both eyes. It is also important to note whether or not there is CSME and include last A1c and last glucose reading. It is important to include how many years the patient has had diabetes, as this determines their level of risk. Additionally, it is good to mention whether or not it is controlled or uncontrolled. Meibomian gland dysfunction is missing the right, left, or both eyes. There is a dry eye component, since there is reduced TBUT, so it should include type, severity, and diagnosis of dry eye.

Case 2 and Sample Preceptor Feedback for Student

Figure 3 shows Case 2 as presented to the students. Figure 4 shows one student’s response. The following are sample preceptor comments.

**Case 2**

CC and HPI: 45-year-old Asian female here for routine exam, reports some new blur at near and has to hold reading material further away. She uses the computer all day at work and notices some watering of her eyes and feeling fatigued in her eyes towards the end of the afternoon. Does not use any eye drops.

MedHx: Hx of systemic lupus erythematosus x 7 years, has been taking Hydroxychloroquine 200 mg BID for 7 years.

Entrance Tests:  
VA sc: 20/20 OD and OS at Distance and Near  
PERRL –APD, FESA, FCF Null OD, OS  
Cover Test: sc ortho at D and N

Refraction:  
R: +1.00 sph 20/20  
L: +1.00 sph 20/20  
+1.25 add 20/20

Anterior Seg:  
Externals: unremarkable  
Lids/lashes: clear both eyes  
Conj G: 1 diffuse bulbar staining R, L  
Cornea: mild diffuse SPK both eyes  
Iris: flat both eyes

A/C: deep and quiet both eyes  
TBUT: 2 seconds  
IOP: 20,20@9:30 am by GAT

Dilated Posterior Seg:  
Media: clear both eyes  
Lens: trace NSC both eyes  
Margins: distinct  
Rims: pink both eyes  
C/D: 0.3 H/V R, L  
Mac: clear both eyes, no bull's eye maculopathy  
FR: - both eyes  
Periphery: no holes, tears, breaks 360 R, L  
OCT performed today; confirmed no maculopathy in both eyes.

Write your full assessment and plan for this patient, taking into account ocular and systemic issues, and always making sure to fully address the chief complaint. There are several ways to manage this patient.

Figure 3. Case 2 as presented to the students. [Click to enlarge](#)

**Case 2: Student Assessment and Plan**

1. Latent Hyperopia, Presbyopia OU.  
Rx +2.25 sph OU for near vision only  
Rx +1.25 sph OU for computer glasses to help relieve near work symptoms. RTC 1 year for CEE to monitor symptoms and Rx.
2. Severe Dry eye, with systemic lupus erythematosus, TBUT 2 seconds OU. Pt ed on findings. Pt ed on the use of Refresh Artificial tears 3-4 times a day and use of warm compresses for 10 minutes, twice a day. RTC in 2-3 weeks to assess dry eye symptoms and for a dry eye workup.
3. Systemic Lupus Erythematosus x 7 years with history of Hydroxychloroquine 200 mg BID x 7 yrs; no maculopathy found today. Pt ed on findings and educated on importance of annual testing while taking Hydroxychloroquine. RTC in 1 yr for HVF 24-2, and SD-OCT in macula to assess for potential maculopathy.
4. Trace Nuclear Sclerotic Cataracts OU, non-symptomatic; BCVA 20/20 OU. Pt ed on findings, RTC in 1 yr for CEE to monitor for changes.

Figure 4. One student’s worksheet in response to Case 2. [Click to enlarge](#)

*From Dr. Moy:* This student made a great start. She has hit the right elements of the assessment and plan. I would ask her

## Optometric Case Vignettes for the Clinical Preceptor | 5

what testing needs to be done to confirm a separate Rx for computer glasses. I would also ask her about what it means when a patient has lupus and dry eye, in terms of next steps for long-term treatment (testing for a secondary Sjogren's syndrome and considering Restasis or Xiidra). I would also discuss considering inclusion of the cumulative dose in her assessment for the history of hydroxychloroquine treatment. She should be complimented for recognizing that it is an Asian patient and that an HVF 24-2 may at first be more appropriate than an HVF 10-2 for extramacular defects.

*From Dr. Reilly:* Wonderful attempt at the assessment and plan. I like the specification of latent hyperopia due to uncorrected 20/20 vision in each eye. I might have cut the script slightly at distance and wrote the Rx in bifocal/progressive form to allow for other glasses purchase options. I do agree with the student on performing a 24-2 instead of a 10-2 for a patient taking hydroxychloroquine of Asian descent, but I would have them back in 2-4 weeks for a baseline rather than 1 year. I would also list the cumulative dose of the medication and daily dose by weight if that information is available. Finally, I would have recommended a specific artificial tear and visual hygiene on the computer as the student did, but I would not have recommended warm compresses due to no evidence of meibomian gland dysfunction.

*From Dr. Pham:* This is a very detailed and thought-out assessment and plan. I would disagree that the severity of dry eye is "severe." While this patient has a reduced TBUT of 2 seconds, the grading of SPK is "mild diffuse SPK," which should fall into the category of mild dry eye, especially if we are only treating with artificial tears. I would recommend being more specific with medication instructions, such as "Refresh ATs 1 gtt TID-QID OU." In addition to HVF 24-2, I would also perform a HVF 10-2, as it is more visually threatening than parafoveal defects.

### A Flexible and Expandable Tool

We see our original case bank as a springboard for other case banks that can be used as shorter time-sensitive exercises for clinical preceptors. In the future, it would be valuable to compile case banks of pediatric vignettes, contact lens vignettes, interdisciplinary vignettes, and more. Other variations could include exam documentation for different types of exams, such as optical coherence tomography findings, visual field visits, and dry eye follow-ups for second-year level. Residents or new preceptors could also use the case banks as practice for leading small group discussions to boost their precepting skills.

The overarching goal for the case vignettes is that they provide optometric preceptors with a time-sensitive method for testing students' case presentation and management skills early in each semester, especially for third-year interns.



Dr. Moy [[moya@neco.edu](mailto:moya@neco.edu)] is an Associate Professor at New England College of Optometry (NECO), an attending optometrist at Martha Eliot Health Center, and Director and Chief Clinical Compliance Officer for NECO's Health Center Network.

Dr. Reilly is an Assistant Professor at New England College of Optometry (NECO) and an attending optometrist at the NECO Center for Eye Care Roslindale and Commonwealth practices.

Dr. Pham is an Assistant Professor at New England College of Optometry (NECO) and an attending optometrist at the NECO Center for Eye Care in Roslindale and Martha Eliot Health Center.