

Supplementary Table S1. Barriers, root causes and countermeasures. Status of completion for each countermeasure at the end of June 2023 listed to the right on the table.

Abbreviations: DR – diabetes-related retinopathy, HCP – health care practitioner, UCSF – University of California, San Francisco.

Barrier	Root Cause	Countermeasures (Experiments/Tactics)	Status
Access to eye-care specialist	<ul style="list-style-type: none"> Could not perform in diabetes clinic due to need for specialized equipment and additional expertise 	Obtain retinal camera and train staff (Medical Assistants)	Completed
		Partner with UCSF Pediatric Ophthalmology to read retinal images	Completed
Lack of education about importance of retinopathy screening	<ul style="list-style-type: none"> Not enough time to talk about DR during clinic visit Patients/HCP may not know the importance of DR screening HCPs do not know how to place orders 	Create educational materials (2020): paper brochure & electronic smart-phrase for After Visit Summary (AVS)	Completed
		Update educational materials and improve awareness of resources	In progress
		Educational session to diabetes HCPs by a pediatric ophthalmologist	Completed
		Create “How To” written and video instructions for HCPs	Completed
		Include button in EHR to order retinal photography in Best Practice Alert (BPA)	Completed
Lack of centralized documentation for HCPs	<ul style="list-style-type: none"> HCPs 1) do not know when eye exams are due, 2) do not have a dedicated place to document pertinent details 	Encourage HCPs to use centralized documentation (type of diabetes, date of diagnosis, date of last exam)	In progress
		Email subset of HCPs with eligible patients, followed by weekly reminders	Completed
		Survey to HCPs to assess barriers and needs to improve	Completed

		DR screening for eligible patients	
		Improve Best Practice Alert (BPA) – firing appropriately, added order for exam	Completed