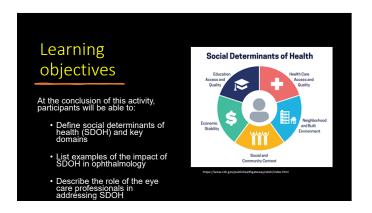
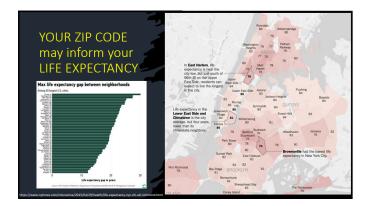
ADDRESSING THE SOCIAL DETERMINANTS OF VISION Grace Sun, MD Associate Professor in Ophthalmology New York Presbyterian Hospital/Well Cornell Medical College President, Women in Ophthalmology Well Cornell Medical College

FINANCIAL DISCLOSURES
No financial disclosures or commercial relationships
Weill Cornell Medical College



WHAT DO YOU ASK A PATIENT WITH DIABETES? * While HbAIc and duration of disease are known risk factors, they account for only 11% of the risk of developing microvascular risk factors for diabetic eye disease allows for the determination of modifiable population-level challenges that may be addressed to facilitate the end of blindness from diabetes. **Beyond HbA1c: Environmental Risk Factors for Diabetic Retinopathy** Kristen Harris Nwanyanwu¹, Paula-Anne Newman-Casey², Thomas W Gardner², and Jennifer I Lim¹.¹ **University of Illinois at Chicago, Chicago, Illinois, USA** **University of Michigan, Ann Arbor, Michigan, USA**



Conditions in the environment in which people are born, grow, live, learn, work, play and age that affect health risks and outcomes

What are Social Determinants of Health (SDOH)?

Social determinants of health are estimated to account for 80% to 90% of a population's health outcomes, while medical care accounts for only 10% to 20%

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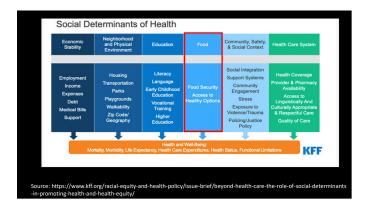


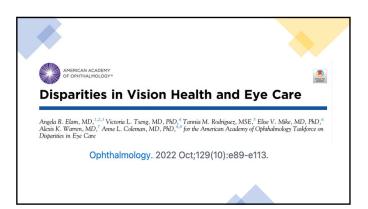


American Academy of Ophthalmology Task Force on Disparities in Eye Care • Improving Access to Eye Care • Health Literacy/Patient Education Leveraging Data Sources

Enhancing Diversity in the sp.
 Position Paper: Disparities in Vision Health and Eye Care Raul P. Lee, MD, JD Chair of Task Force

• Enhancing Diversity in the Ophthalmic Workforce





Health Disparity Populations NIH-designated U.S. health disparity populations include: • American Indians/Alaska Natives • Asian Americans • Blacks/African Americans • Hispanics/Latinos • Native Hawaiians and other Pacific Islanders • Sexual and gender minorities • Socioeconomically disadvantaged populations • Underserved rural populations

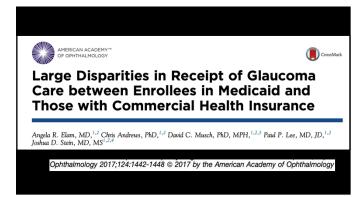
What is the Impact of SDOH in Oph	nthalmology
OPHTHALMIC EPIDEMIOLOGY 2020, VOL. 27, NO. 2, 93–97 https://doi.org/10.1080/07286586.2019.1680703	Taylor & Francis Taylor & Francis Group
Associations of Social Determinants of Health and Sel	Check for updates F-Reported Visual
Difficulty: Analysis of the 2016 National Health Intervi	ew Survey
Nancy H. Su ^a , Nathaniel R. Moxon ^a , Andrew Wang ^b , and Dustin D. French ^{a,}	3,6
*Feinberg School of Medicine, Northwestern University, Chicago, Illinois, USA; *Department of Studies, Northwestern University, Chicago, USA; *Department of Medical Education, Veterans of Development Service, Chicago, Illinois, USA	

National Health Interview Survey (NHIS)

- Large household interview survey coordinated through the National Center of Health Statistics (Centers for Disease Control and Prevention)
 Study population: 33, 174 adults, ages 18 and over
- Outcome of interest: Self-imported visual
 - Do you have trouble seeing, even when wearing glasses and contact lenses?
 Are you blind or unable to see at all ?
- Economic stability (employment, cost-related medication underuse)
 Neighborhood and physical environment (social cohesion-helpfulness/reliability of
- neighbors)

 Education (high school or college education)
- Community and social context (non-heterosexual orientation)
- Food access (food insecurity)
- Health care system access (ability to pay medical bills, visits to eye doctors, self-reported trouble finding a doctor, medical insurance status)

	Dependent Variable	
	Visual Difficulty	
	Yes (= 1) No (= 0)	
Independent Variables*	Odds Ratio (95% CI)	
Education**		
<high school<="" td=""><td>1.54 (1.30-1.81)</td><td></td></high>	1.54 (1.30-1.81)	
High school grad or GED	1.28 (1.11-1.46)	
Some college/associates degree	1.19 (1.04-1.35)	
College degree or higher Insurance**	Reference	
Private	0.93 (0.83-1.04)	Controlled for
Medicaid	1.44 (1.23-1.67)	300
Uninsured	Reference	-age
Medicare	1.14 (0.98-1.34)	-sex
Food insecurity**	1.75 (1.54-1.99)	-race (White, Black, Asian, otl
High social cohesion	0.92 (0.79-1.06)	
Employment**	0.79 (0.71-0.89)	 ethnicity (Hispanic, non-Hisp
Cost-related medical underuse**	1.72 (1.54-1.93)	-Co-morbidities
Unable to pay medical bills**	1.60 (1.40-1.83)	
Trouble finding a doctor, past 12m**	1.49 (1.19-1.86)	
Seen an eye doctor, past 12m**	1.56 (1.41-1.73)	
Non-heterosexual**		
Male	1.82 (1.21-2.73)	
Female	0.96 (0.65-1.40)	



- Medicaid patients with a new diagnosis of OAG received substantially less glaucoma testing in the first15 months following initial diagnosis compared with persons with commercial health insurance (234% increased odds of not undergoing glaucoma testing)
- Disparity most notable for Black patients with Medicaid (291% increased odds of not undergoing glaucoma testing)



Diabetic Eye Disease

- Racial and ethnic minoritized populations have a higher prevalence of diabetic retinopathy and diabetic macular edema, but are less likely to undergo screening dilated fundus examinations than Whites
- Underrepresented in clinical trials related to diabetic retinopathy and macular edema



Concy JM, Scott AW, Racial disparities in the screening and treatment of diabetic retinopathy. J Natl Med Assoc 2022;50027-9684(2))00236-4.

Berkowitz ST, Groth SL, Gingapatra S, Patel. S. Recialchinic disparities in ophthalmology clinic trials resulting in US Food and Drug Administration Approvals for 2000 to 2020 JAMA Ophthalmology 2011;189-629-637.

Bowe T, Salabati M, Soares R, Huang et al. Racial, ethnic, and gender disparities in diabetic macular edema clinical trials. Ophthalmology Retina 2022;S2468-6530/7/90040-0

Multicenter Study > Ophthalmol Retina. 2020 May;4(5):550-552.

doi: 10.1016/j.oret.2020.01.016. Epub 2020 Jan 28.

Neighborhood Deprivation and Adherence to Initial Diabetic Retinopathy Screening

Ramsey Yusuf ¹, Evan M Chen ², Kristen Nwanyanwu ², Bradley Richards ³

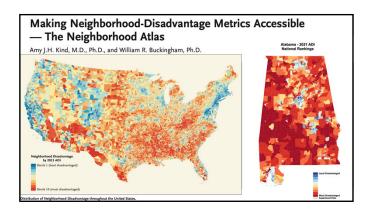
Affiliations — collapse

Affiliations

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3 Department of Internal Medicine, Yale School of Medicine, New Haven, Connecticut.

Table 1. Example mathers, indices, and tools available to entimate SDOII in opinhalmology Interval Example Markey and Associated Markey and Associated Markey (Associated Markey) Interval Example Mark



Area Deprivation Inde

Integration of ADI within electronic health record (EHR) may help identify vulnerable patients in need of additional resources and targeted interventions (travel vouchers, education initiatives, community outreach initiatives)

Multicenter Study > Ophthalmol Retina. 2020 May;4(5):550-552. doi: 10.1016/j.oret.2020.01.016. Epub 2020 Jan 28.

Neighborhood Deprivation and Adherence to Initial **Diabetic Retinopathy Screening**

Ramsey Yusuf ¹, Evan M Chen ², Kristen Nwanyanwu ², Bradley Richards ³

- Yale New Haven Health System electronic medical record queried for patients 18 years
 or older with diabetes who received a first-time referral for diabetic retinopathy evaluation
 in the primary care setting from 2013 to 2107
- Patient addresses used to obtain ADI and cohort divided into quintiles based on ADI national percentiles
 Of the 1,387 patients included in the study, 727 (52%) underwent a dilated eye examination as referred

Table S2. Univariate and multivariate regression analysis of the association between the most disadvantaged Area of Deprivation Index deciles and adherence to first-time referral for diabetic retinopathy screening ADI National Quintile Residence within each of the 3 most disadvantaged deciles associated with an increased risk of nonadherence to diabetic retinopathy screening Fourth-Most Disadvantaged Decile 1.02 (0.77-1.36) 1.10 (0.82-1.48) Second-Most Disadvantaged Decile 0.41 (0.22-0.72) 0.015 Most Disadvantaged Decile 0.035 *Multivariate analysis controls for age, race and insurance status ADI = Area Deprivation Index; CI = Confidence interval

Prevalence of Visually Significant Cataract and Factors Associated with Unmet Need for Cataract Surgery

Los Angeles Latino Eye Study

e M., Richter, BA, ¹ Jessica Chung, PhD, ² Stanley P. Azen, PhD, ^{1,2} Rohit Varma, MD, MPH, ^{1,2} for the Amodes Latino Eye Study Counts²

ulation-based, cross-sectional study of 6142 Latinos 40 years and older

344 participants were determined to have needed cataract surgery
34% of participants had an unmet need for cataract surgery
Factors associated with not having cataract surgery

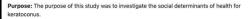
having last eye examination 5 years ago compared with 1 year ago
being uninsured
income less than \$20,000
self-reported barriers to eye care

Ophthalmology 2009;116:2327–2335



Socioeconomic Correlates of Keratoconus Severity and Progression

'essnim R. Ahmad, MD,* Alan W. Kong, BS,† Marcus L. Turner, BS,† Jackson Barnett, BA,† Gurbani Kaur, MS, BA,† Kieran S. O'Brien, PhD, MPH,*‡ Neel D. Pasricha, MD,* and Maanasa Indaram, MD*



Methods: In this retrospective cohort study of patients with keratoconus, the electronic health record was reviewed for keratometry, treatments received, clinical comorbidities, and social characteristics. Outcomes included severe keratoconus at presentation (steep keratometry ≥52 diopters), disease progression (≥0.75 diopters increase from the first to the most recent clinical visit), and corneal transplantation. Logistic regression was used to evaluate factors associated with severity at presentation and corneal transplantation. Cox proportional hazards modeling was used to evaluate progression

ornea 2022;00:1-6

Results: A total of 1038 patients with keratoconus were identified, 725 (70%) of whom had baseline imaging. Compared with commercially insured patients, Medicaid recipients were more likely to have severe keratoconus, independent of social and clinical confounders [odds ratio (OR) 1.94, 95% confidence interval (CI), 1.12-3.35, P = 0.017]. Male sex was independently associated with progression (hazard ratio = 1.38, 95% CI, 1.03-1.84, P = 0.030). Medicare and Medicaid recipients were more likely to require transplantation compared with commercially insured patients (OR 2.71, 95% CI, 1.65-4.46, P < 0.001 and OR 1.74, 95% CI, 1.08-2.80, P = 0.022, respectively). Other social determinants of health, including non-White race/ethnicity, limited English proficiency, and unemployment, were associated with the outcomes only in univariate analysis. Obstructive sleep apnea, atopy, body mass index, and tobacco use were not associated with any outcome. Conclusions: Socioeconomic factors were more consistent predictors of kerato

corneal transplantation compared with clinical factors that have received relatively greater attention

There may be SEX differences in treatments and outcomes Am J Ophthalmol. 2020 Nov;219:284-294. doi: 10.1016/j.ajo.2020.06.039. Epub 2020 Jul 5. Sex Differences in the Repair of Retinal Detachments in the United States Natalia F Callaway ¹, Daniel Vail ², Ahmad Al-Moujahed ², Cassie Ludwig ², Marco H Ji ², Vinit B Mahajan ³, Suzann Pershing ³, Darius M Moshfeghi ² Affiliations I Byers Eye Institute at the Stanford University School of Medicine, Palo Alto, California, USA. Electronic address: ncallaway@stanford.edu. 2 Byers Eye Institute at the Stanford University School of Medicine, Palo Alto, California, USA. 3 Byers Eye Institute at the Stanford University School of Medicine, Palo Alto, California, USA. Veterans Affairs Palo Alto Health Care System, Palo Alto, California, USA. Weill Cornell Medical Colleg

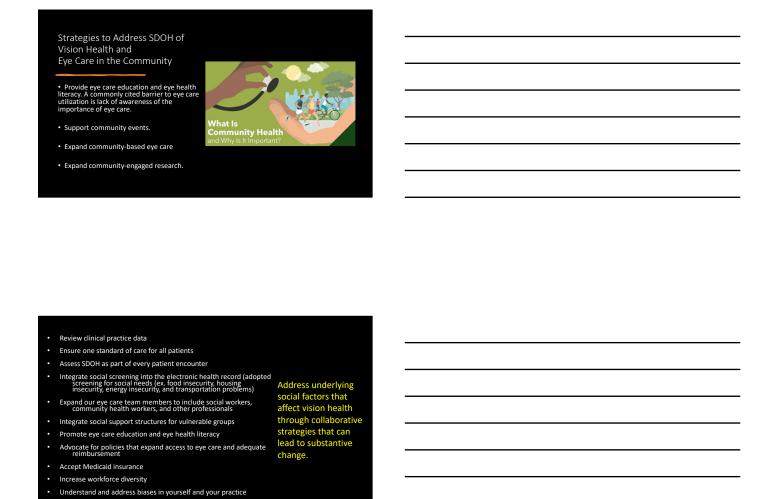
- PURPOSE: To investigate differences between women and men in the repair of rhegmatogenous retinal detach-ments (RRDs) in the United States.
 DESIGN: Retrospective cohort study.
- DESIGN: Retrospective cohort study.
 METHODS: SETTING: A large insurance claims database.
 PARTICIPANTS: Subjects with an incident RRD between 2007 and 2015. Data: Demographic data, comorbid ocular conditions associated with RRD, systemic comorbidities, and surgical intervention (pneumatic retinopexy [PR], pars plana vitrectomy [PPV], laser barricade, or scleral buckle [SB]) were collected. MAIN OUTCOME MEASURES: Odds of receipt of surgical intervention for incident RRD, time to repair, type of intervention, and the rate of reoperation by sex. rate of reoperation by sex.

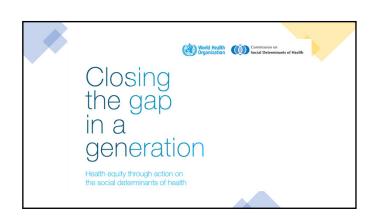
Truven Health MarketScan Commercial Claims and Encounter Database
150 million US beneficiaries
>350 insurance carriers

Among patients who received repair, women were more often delayed (0.17 days, P=.04). Women were more likely to undergo primary laser barricade (relative risk ratio [RRR] 1.68, P<.001), primary SB (RRR 1.15, P<.001), and PR (RRR 1.07, P<.04) than men.



wining "	nework for ophthalmologists to take action on soci	ial determinants of vision	on health					
	Definition	Example actions	COLLEGE COLUMN TO STREET, COLUMN TO A STREET					
	activities that identify the social risks of patients and populations	d Use a standardized s needs	creening tool to assess social		_			
		Integrate social scree health record to fa	ning results into the electronic					
	activities that reduce social risk by providing	Provide financial assi	stance to those who report		-			
	assistance in connecting patients with social resources	challenges with me Connect patients wi	edical costs th community resources for					
		needs like housing,	food, and transportation		-			
		who could act as a	ocial worker or patient navigator liaison between community					
ustment A	activities that focus on altering clinical care to	Offer evening and w			-			
	accommodate identified social barriers	Utilize telemedicine	in appropriate settings for those					
		with transportation	challenges ation materials that are written		_			
		at an accessible leve	of for those with low health					
dified fro	om National Academies of Sciences, Er	literacy	ladicing Integrating carial	care into the delivery	_			
health car	re: moving upstream to improve the n	nation's health. W	ashington (DC): National Ac	ademies Press, 2019.				
trategies:	Awareness, Assistance, Adjustment, A	Advocacy, and Ali	gnment		_			
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Alignmer	nt Activities taken by health care system	ns to understand A	Accept Medicaid insurance					
	existing social care assets in the cor coordinate services to promote a sl	mmunity and to	artner with local organizations	and clinics to offer	_			
	create positive health outcomes		vision screenings and to engagoutreach	e in community				
Advocacy	y Activities in which health care organ		Advocate for federal, state, and	local policies that	-			
,	with partner social care organization	ons to promote	advance access to eye care					
	policies that facilitate the creation	1 1 11 1	romote investment in research		-			
	implementation of resources to add		and community-engaged resea	cn				
	implementation of resources to add social needs							
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should rever repport.

These inequites in health, avoidable health inequalities, arise because of the circumstances in which people grow, lew, work, and age, and the systems put in place to deal with litness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces.

economic forces. Social and economic policies have a determining impact on whether a child care grow and develop to its 4 ploretial and the se floatining fig. or whether its file will be blighted. Increasingly the nature of the health problems rich and poor countries have to solve ane converging. The development of a society, rich or poor, can be judged by the quality of its populations health, how fairly health is distributed across the social spectrum, and the degree of protection provided from dissolvantage as a result of ill-health.

In the spirit of social justice, the Commission on Social Determinants of Health was set up by the World Health Organization (NH-O) in 2005 to marshal the evidence on what can be done to promote health equally, and to foster a global movement to achieve it.

As the Commission has done is towed, several occurries and agencies has become partners seeking of society, that influence the social determinants of health and improve health equity. These countries and partners are in the foreferrof of a global movement. The Commission calls on the WHO and all governments to lead global action on the social determinants of health with the aim of achieving health equity. The sesential that governments, civil acciety, WHO, and other global organizations now come together in taking action to improve the lives of the world's citizens. Achieving health equity within a generation is a chareable, it is the right thing to do, and now is the right time to do it.

Social Determinants of Health are Conclusions **Associated with Risk of Vision Loss** Disparities in eye care access and vision health are pervasive and persist Social determinants of health are major drivers of disparities in eye health In eye hearth Social determinants of health are estimated to account for 80% to 90% of a population's health outcomes, while medical care accounts for only 10% to 20% Neighborhood Addressing SDOH is necessary to promote equity in vision health for all • The Time is Now

