Dangers of loneliness

1. A 71-year-old man presents to your clinic for a wellness visit.  He is healthy except for knee osteoarthritis and hypertension for which he takes hydrochlorothiazide daily and acetaminophen as needed.  His wife of 35 years passed away last year. They did not have children and he has few friends in town.  Besides going shopping once a week, he does no other activities. He was a former truck driver, does not smoke, and drinks approximately 4 beers a week.  He does not exercise. He has no history of depression and denies feeling sad or hopeless. His physical examination reveals a BP of 142/74, BMI 32.

Which of the following risk factors has been shown to be more strongly associated with mortality than hypertension?

1. Physical inactivity
2. Alcohol use
3. Obesity
4. **Social isolation**

What are possible interventions to help mitigate this risk factor?

**Fast Fact**: Social isolation, defined as disengagement from social ties, institutional connections, or community participation is a risk factor for poor health outcomes, including increased mortality. In a meta-analysis by Holt-Lunstad, stronger social relationships had a 50% increased likelihood of survival compared to lean body weight (22%), physical activity (21%) and controlled hypertension (13%). Prevalence of social isolation in community-dwelling older adults ranges from 10 to 43 %. Clinicians may consider encouraging participation in community, volunteer or religious organizations in socially isolated adults.

**Reference**

Pantell M, et al. [Social isolation: a predictor of mortality comparable to traditional clinical risk factors](http://www.ncbi.nlm.nih.gov/pubmed/24028260). Am J Public Health 2013 Nov; 103(11):2056-62

Holt-Lunstad J, Smith TB, Layton JB. [Social relationships and mortality risk: a meta-analytic review](http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000316). Plos Med 2010; 7(7):e1000316

Seeman TE. [Social ties and health: the beneﬁts of social integration](http://www.ncbi.nlm.nih.gov/pubmed/8915476). Ann Epidemiol. 1996; 6(5):442-451.

Socioeconomic status and coronary heart disease risk

1. A 52-year-old man presents to a neighborhood health center for evaluation of intermittent chest pressure. His symptoms started 2 weeks ago, worsen with exertion, last 10-15 minutes and are associated with shortness of breath and diaphoresis. He has not seen a doctor in many years. He takes no medications, has smoked 1 pack per day for the last 35 years, and denies alcohol or drug use. He currently works as a janitor at a ballpark, and is usually unemployed for 4-5 months each year. He lives in a rented apartment in a run-down part of town. He was adopted and is uncertain of his family medical history. His physical examination reveals BP 160/96, P 74, BMI 39. Cardiopulmonary exam is normal. 1+ pedal edema is noted with good distal pulses. ECG shows normal sinus rhythm without ST-T change. You are concerned that his chest pain is angina and would like to refer him for further evaluation.

Which of the following risk factors for ischemic heart disease is not included in current risk calculators—Framingham or ASCVD pooled cohort?

1. Age
2. Lack of primary care
3. Hypertension
4. Smoking
5. **Low socioeconomic status**
6. Cholesterol levels

What mechanism or pathway could account for its role in cardiovascular diseases? Would this change your management, and how?

**Fast fact**: Low socioeconomic status, including living in low-income neighborhoods, is independently predictive of cardiovascular disease and all-cause mortality. For individuals from low socioeconomic backgrounds defined as <12 years of education or <$12,000 annual income, Framingham scores underestimated CVD risk by 24%. The effects of SES on ASCVD risk calculated with the ACC/AHA Pooled Cohort Equations has not been established.

**Reference**

Diez Roux AV, et al. [Neighborhood of residence and incidence of coronary heart disease](http://www.nejm.org/doi/full/10.1056/NEJM200107123450205). NEJM 2001; 345(2):99-106

Franks P, Tancredi DJ, Winters P, Fiscella K. [Including socioeconomic status in coronary heart disease risk estimation](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2939421/). *Ann Fam Med*. *2010*; *8*(5):*447*–453

Singh, G.K. [Area deprivation and widening inequalities in U.S. mortality, 1969–1998](http://www.ncbi.nlm.nih.gov/pubmed/12835199?dopt=Abstract). Am J Public Health. 2003; 93: 1137–1143

Neighborhood environments and obesity

1. A 47-year-old man with obesity and type 2 diabetes presents to your clinic for a follow-up visit. His hemoglobin A1C’s have ranged 8-9% while taking glipizide and metformin with good adherence. He has had several failed attempts at losing weight. He eats fast food several times a week and cites broken sidewalks as excuse for not walking. He also works long evening and night shifts as a security guard for an office building downtown. He and his wife are searching for a new apartment because of noisy neighbors. His physical examination reveals a BP 118/72, BMI 45. Your main concern is his elevated A1C and obesity. Though he agrees with your concern, he does not wish to begin insulin therapy.

You should spend this visit discussing:

1. The importance of seeing a dietician
2. Carb counting and exercise options
3. The need to start insulin
4. **Access to healthy food sources, distance from fast food restaurants and proximity to recreational facilities when looking for his next apartment**

**Fast fact**: Greater availability of chain fast food restaurants may promote greater fast food consumption in low-income groups. Providing or increasing awareness of the availability of parks, playgrounds, or open space may decrease the odds of obesity, especially in ethnically diverse neighborhoods. Access to recreational or playground facilities and more walkable neighborhoods lead to increased physical activity, decreased sedentary behavior, or lower BMI. Proximity to supermarkets might not influence diet quality or promote more fruit and vegetable intake.

**Reference**

Boone-Heinonen J, Gordon-Larsen P, Kiefe CI, Shikany JM, et al. [Fast food restaurants and food stores: longitudinal associations with diet in young to middle-aged adults: the CARDIA study](http://www.ncbi.nlm.nih.gov/pubmed/21747011). Arch Intern Med 2011; 171(13): 1162-70.

Sulllivan SM, Brashear MM, Broyles ST, Rung AL. [Neighborhood environments and obesity among Afro-Caribbean, African American, and non-Hispanic white adults in the United States: results from the National Survey of American Life](http://www.ncbi.nlm.nih.gov/pubmed/24378205). Prev Med 2014; 61:1-5

Commuting time as risk factor

1. A 38-year-old woman who works as an office manager for a company in an urban center, presents for routine follow up of fibromyalgia, migraine headache and diabetes.  She has made several attempts to lose weight but found it difficult to exercise due to limited time in her day for health-related activities.  Two years ago, she moved to the suburbs and currently commutes 70 minutes to work each way. On physical examination, her BP is 150/94 and her BMI is 38. You observe normal sensation on foot exam. Labs include: A1C 9.4, creatinine 1.1, and no albuminuria.  She has repeatedly deferred eye exam, pap smear and specialist referral due to difficulty in taking time off from her work schedule.  She is currently on metformin 1000 mg bid.  You plan to add lisinopril and refer her to the diabetes educator to discuss insulin therapy and lifestyle modification.

What other recommendationcould play a significant role in her health outcomes?

1. Refer her to an ophthalmologist close to work and schedule a pap smear at her next visit
2. Refer her to a health coach for behavioral counseling
3. **Advise her on strategies to minimize her daily commuting time and its impacts**
4. Refer her to a multidisciplinary fibromyalgia program to address her pain

**Fast Fact**: A number of studies have documented the association between increased commuting time (by both public transportation and private car, especially greater than 60 min daily) and less time spent on health-related activities such as exercise and food preparation, as well as worse health outcomes, including higher cardiovascular mortality.  Men who reported >10 hours per week riding in a car had 82% greater risk of dying from cardiovascular disease than those who reported <4 hours per week.

**Reference**:

Christian TJ. [Trade-offs between commuting time and health-related activities](http://www.ncbi.nlm.nih.gov/pubmed/22689293). J Urban Health 2012; 89(5):746-57

Hansson E, Mattisson K, Bjork J, Per-Olof O, Jakobsson K. [Relationship between commuting and health outcomes in a cross-sectional population survey in southern Sweden](http://www.biomedcentral.com/1471-2458/11/834). BMC Public Health 2011; 11:834

Warren TY, Barry V, Hooker SP, Sui X, Church, TS, Blair SN. [Sedentary behaviors increase risk of cardiovascular disease mortality in men](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2857522/). Medicine and Science and Sports and Exercise 2010; 42(5): 879-885

Hoehner CM, Barlow CE, Allen P, Schootman M. [Commuting distance, cardiorespiratory fitness, and metabolic risk](http://www.ncbi.nlm.nih.gov/pubmed/22689293). Am J Prev Med 2012; 42(6): 571-578

Health benefits of weatherization

1. A 45-year-old man with previously well-controlled type 2 diabetes mellitus and hypertension is evaluated for recent elevation in blood sugars. Over the past 6 months, his hemoglobin A1C has increased and you also note several elevated blood pressure recordings in his daily log. He readily admits that his medication adherence has worsened, and he has been more reliant on fast food. He attributes these changes to recent financial strain and an inability to afford his monthly medications and fresh food. He has less income from landscaping work in the winter months, and his utility bills have dramatically increased, largely due to costs of heating his poorly insulated home. On physical examination, his blood pressure is 149/92mmHg and his BMI is 27. His A1C is 8.2%.

In addition to ensuring that he is prescribed generic medications that are available on the local pharmacy’s $4 prescription list, which of the following options might help your patient improve medication adherence and access to healthier food?

1. Refer him to a dietician and/or diabetes educator
2. Refer him to the food bank and department of public welfare to apply for cash assistance and/or Medicaid
3. **Referral to a weatherization assistance program to reduce energy bills thereby freeing up money for food and prescriptions**
4. Verify that his blood pressure cuff is calibrated correctly
5. Motivational interviewing to improve his medication and diet adherence.

**Fast fact**: Weatherization assistance programs include a wide variety of measures to improve energy efficiency and reduce utility costs, including window replacement, heating and cooling system inspection and repair, and repair or replacement of low efficiency electrical appliances. Weatherization and energy efficient programs could provide health benefits for low-income families who suffer disproportionally from house fire, injuries and asthma. Patients may also be referred to a Low-Income Home Energy Assistance Program to help with utility costs during the winter months.

**Reference**

Where to apply for weatherization assistance. U.S. Office of Energy & Renewable Energy. Available at: <http://energy.gov/eere/wipo/where-apply-weatherization-assistance>

Low-Income Home Energy Assistance Program (LIHEAP). U.S. Office of Energy & Renewable Energy. Available at: <http://www.acf.hhs.gov/programs/ocs/liheap-state-and-territory-contact-listing>

Salls AM, et al. [Rapid health assessment impact: weatherization plus health in Connecticut](https://www.wxplushealth.org/sites/default/files/resources/Rapid_HIA_WxPlusHealth_in_CT_April2013_Updated.pdf). 2013

Work and disability

1. A 45-year-old former machinist at a pipe manufacturing company, currently receiving Social Security Disability Insurance (SSDI) income, presents to your clinic.  He fractured his right shoulder 3 years ago after a fall at work, and has been receiving chronic opioid therapy because of daily shoulder and back pain. He was evaluated by orthopedic surgery and had physical therapy with little improvement.  He feels depressed due to financial insecurity and inability to work. He is able to earn extra income doing minor maintenance work for a friend who owns an apartment building.  He expresses interest in part-time work but fears losing his benefits. He previously tried citalopram and fluoxetine without improvement in his mood, pain, or energy level, and does not want to try another medication.  He denies feeling hopeless or suicidal but does endorse insomnia.

The best next step to help him with depression and financial distress is:

1. Refer him to self-help or support groups
2. **Refer him to the local Social Security office to inquire about trial work without losing disability benefits**
3. Refer him to a comprehensive pain management program
4. Suggest a trial of quetiapine for both depression and insomnia

**Fast fact**: Social Security rules make it possible for people with disabilities receiving Social Security or Supplemental Security Income (SSI) to work for a limited period of time and still receive monthly payments and Medicare or Medicaid benefits as long as their disability persists. The trial work period allows a Social Security recipient to test his/her ability to work for at least 9 months. In 2014, recipients may still retain benefits under an extended period of eligibility if earnings are under $1,070 per month. Vocational rehabilitation has the potential to enhance the number of injured workers returning to the labor market, prevent illness, and increase well-being. There is currently no high-level evidence to support or refute the efficacy of such interventions in improving return-to-work outcomes.

**Reference**

[Social security administration website on work incentives](http://www.ssa.gov/disabilityresearch/workincentives.htm)

Hou WH, Chi CC, Lo HL, Kuo KN, Chuang HY. [Vocational rehabilitation for enhancing return-to-work in workers with traumatic upper limb injuries](http://www.ncbi.nlm.nih.gov/pubmed/24122624). Cochrane Database Syst Rev 2013; 10

Tobacco-free workplace

1. A 52-year-old man with diabetes, hypertension, hyperlipidemia, and COPD presents to your clinic for a routine visit.  He takes 6 medications in addition to 2 inhalers.  He lives with his wife who is disabled from a motor vehicle accident, and they have 2 children in high school. He has smoked 1 pack per day for the past 25 years, but does not drink alcohol.   He is working for a small manufacturing company for almost 20 years, but with the weak economy, he constantly fears losing his job. His diabetes and hypertension are well-controlled. Your major concern for this visit is his continued tobacco use. Repeated efforts to quit smoking by using nicotine gum, patches, and bupropion have not been successful.  He says, “all the guys at work smoke and it’s hard to be the only guy not doing it.”

Which factor listed below would most likely increase his ability to stop smoking?

1. Educational materials on how to quit smoking
2. Acupuncture and hypnosis therapy
3. Long-term use of nicotine replacement therapy
4. **A smoke-free work place**

Which action plan would increase his chance of smoking cessation while taking into account his clearly identified workplace obstacles to doing so?

**Fast Fact:** Smoke-free worksite policies, such as company property smoking bans and coverage of smoking cessation referrals and resources, help employees reduce or discontinue their use of tobacco. Implementing smoke-free workplace policies was estimated to be more cost-effective than nicotine replacement therapy. Employers may see benefits in improved workplace productivity and decreases in absenteeism. Some states and municipalities have adopted 100% smoke-free laws in non-hospitality workplaces, restaurants, and bars.

**Reference**

Glasgow RE, Cummings KM, Hyland A. [Relationship of worksite smoking policy changes in employee tobacco use](http://www.ncbi.nlm.nih.gov/pubmed/9583652): Findings from COMMIT. *Tobacco Control* 1997; 6(Suppl 2):S44–S48

Osinubi OYO, Sinha S, Rovner E, Perez-Lugo M, Jain NJ, Demissie K, Goldman M. [Efficacy of tobacco dependence treatment in the context of a "smoke-free grounds" worksite policy](http://www.ncbi.nlm.nih.gov/pubmed/15273971): A case study. *American Journal of Industrial Medicine* 2004; 46:180–187

Halpern MT, Shikiar R, Rentz AM, Khan ZM. [Impact of smoking status on workplace absenteeism and productivity](http://tobaccocontrol.bmj.com/content/10/3/233.full). Tob Control. 2001; 10(3):233–238

Ong MK, Stanton GA. [Free nicotine replacement programs vs implementing smoke-free workplaces: a cost-effectiveness comparison](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449293/). Am J Public Health 2005; 95(6): 969-975

Health benefits of high school diploma

1. A 17-year-old girl who was diagnosed with gestational diabetes during her last pregnancy presents to your clinic to establish care. She had an uncomplicated vaginal delivery 4 weeks ago to a healthy baby girl. She currently lives with her mother and sister in a 2- bedroom apartment, and her mother helps with infant care. She dropped out of high school in the 11th grade because of her pregnancy. She is worried about developing diabetes. On physical examination, her BMI is 38; BP is 128/74. Her fasting blood sugar is 90. A1C is 5.9.

Of the following interventions, which one has the highest prospect of improving her long-term health outcomes:

1. Reassure her that she does not have diabetes and schedule her for annual visits.
2. Refer her to home visitation program for young moms living in urban poverty area
3. Screen for postpartum depression and check her thyroid function
4. **Encourage her to return to school**
5. Ensure that she is receiving Women, Infants and Children (WIC) services and other income benefits

**Fast fact**:

Americans with less education have a higher risk of several diseases such as diabetes and heart disease, as well as early mortality. Studies also suggest that Americans with General Education Development (GED) certificate have worse health outcomes compared to high school graduates. Information regarding dropout prevention and support programs (e.g., alternative schooling) may be available at local school districts.

**Reference**

Goldman D, Smith JP. The [increasing value of education to health](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3119491/). Soc Sci Med 2011; 72(10): 1728-37

Meara ER, Richards S, Cutler DM. [The gap gets bigger: changes in mortality and life expectancy, by education, 1981-2000](http://www.ncbi.nlm.nih.gov/pubmed/18332489). Health Aff 2008; 27(2)350-60

Olschansky SJ, Antonucci T, Berkman L, Binstock RH. [Differences in life expectancy due to race and educational differences are widening, and many may not catch up](http://www.ncbi.nlm.nih.gov/pubmed/22869659). Health Aff 2012; 31(8):1803-13

Zajacova A. [Health in working-aged Americans: adults with high school equivalency diploma are similar to dropouts, not high school graduates](http://www.ncbi.nlm.nih.gov/pubmed/22401512). Am J Public Health 2012; 102(S2):S284-90

Hatch SL, et al. [The continuing benefits of education: adult education and midlife cognitive ability in the British 1946 birth cohort](http://www-ncbi-nlm-nih-gov.pitt.idm.oclc.org/pmc/articles/PMC3159532/). J Gerontol B Psychol Sci Soc Sci. 2007; 62:S404-S414

Emergency department overuse

1. A 38-year-old woman presents for a physical. She was referred by the ED after being seen there for bronchitis. Last month, she and her 2 children left a domestic violence shelter and moved into a new apartment, and are now enrolled in Medicaid. She has a history of depression but is not currently taking any medications. She denies fatigue, headache, insomnia or change in appetite. She plans to attend a job training program. She smokes approximately 10 cigarettes a day and does not drink alcohol. Her exam is normal. You perform a pap smear and screen her for diabetes and hyperlipidemia. Smoking cessation is discussed. Her PHQ-9 depression screen is negative. You also note that in the past she went to the ED for conditions such as UTI and headache.

Which of the following strategies might reduce inappropriate emergency department use for this patient?

1. Review the “welcome to the practice” letter which outlines office hours, telephone number, how to schedule last-minute appointment and what to do for urgent medical problems when the office is closed
2. Educate patients about when it is appropriate to visit an emergency room, urgent care facility, or primary care physician and suggest that she adds the office phone number to her cell phone contacts
3. Refer her to another practice close to her apartment that offers extended hours and care to both adults and children
4. **All of the above**

**Fast fact**: Nonelderly Medicaid patients use EDs at higher rates than nonelderly privately insured patients. The majority of ED visits by nonelderly Medicaid patients are for symptoms suggesting urgent or more serious medical problems. Barriers to primary and specialty care also contribute to high ED use. Enhanced access and improved management of chronic conditions can help keep patients out of the ED.

**Reference**

Sommers A, Boukus ER, Carrier E. [Dispelling myths about emergency department use: majority of Medicaid visits are for urgent or more serious symptoms](http://www.hschange.com/CONTENT/1302/). Res Brief 2012 Jul; (23):1-10, 1-3

Robert Wood Johnson Foundation. Quality Field Notes. [Emergency Department Overuse](http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2013/rwjf407773). September, 2013

Who are at risk for low health literacy?

1. A 54 year-old woman with type 2 diabetes mellitus is evaluated during a routine examination. Despite good medication adherence on an appropriate oral regimen, her hemoglobin A1C’s have remained poorly controlled (9-10%), prompting the addition of insulin to her regimen. However, since starting insulin approximately 4 weeks ago, she has been to the emergency department twice for episodes of hypoglycemia after injecting too much insulin. Additionally, she has consistently struggled to follow a diabetic diet, and has difficulty understanding food labels. Her hemoglobin A1C is 8.6% today.

In addition to referring her to a diabetes educator to review her insulin regimen, schedule and injection techniques, you should also consider:

1. Stopping insulin therapy and starting an additional oral medication
2. Prescribing her glucagon pills in case she has additional episodes of hypoglycemia
3. Referring her to endocrinology for consideration of insulin pump therapy
4. **Screening her for low healthy literacy**

**Fast fact**: Health literacy is defined as “the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make basic health decisions.” Between 15-40% of patients with diabetes in the U.S. have low health literacy and poor numeracy skills, which is associated with worse health status, poor glycemic control, episodes of hypoglycemia among patients with diabetes, increased health services utilization, and higher mortality. Patients with low health literacy may have difficulty complying with diet recommendations. Often times, they may be able to adhere to simple oral medication regimens, but the added complexity of measuring insulin doses and/or counting carbohydrates may lead to complications. Patients with low health literacy may benefit from referral to high-intensity diabetes management sessions delivered by a health care professional (e.g., pharmacist, diabetes educator).

**Screening for low health literacy:**

*“How confident are you filling out medical forms by yourself?”*

|  |  |  |
| --- | --- | --- |
| Sensitivity and Specificity of identifying low health literacy\* | | |
| Answer | Sensitivity | Specificity |
| Not at all | 0.10 | 0.98 |
| A little bit | 0.33 | 0.94 |
| Somewhat | 0.60 | 0.82 |
| Quite a bit | 0.80 | 0.49 |
| Extremely | 1.00 | 0.00 |

\* based on testing among 1,796 primary care patients receiving care at 1 of 4 large VA medical centers in Minneapolis, MN; Los Angeles, CA; Durham, NC; and Portland, OR (Chew et al, 2008).

Those answering “not at all” or “a little bit” have a 5-times higher odds of low health literacy than those answering “somewhat,” “quite a bit,” or “extremely.”

**Reference**

Berkman ND, Sheridan SL, Donahue KE, et al. Health Literacy Interventions and Outcomes: An Updated Systematic Review. Rockville (MD): Agency for Healthcare Research and Quality (US); 2011 Mar. (Evidence Reports/Technology Assessments, No. 199.) The effect of interventions to mitigate the effects of low health literacy. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK82433/>

Bostock S, Steptoe A. Association between low functional health literacy and mortality in older adults: longitudinal cohort study. *BMI*; 344:e1602

Nielsen-Bohlman L, Panzer AM, Kindig DA, eds. Health literacy: a prescription to end confusion. National Academies Press, 2004.

Chew LD, Griffin JM, Partin MR, et al. [Validation of screening questions for limited health literacy in a large VA outpatient population.](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2324160/) *J Gen Intern Med.* 2008; 23(5):561-566

Cavanaugh KL. [Health literacy in diabetes care: explanation, evidence and equip](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158575/)ment. *Diabetes Manag (London).* Mar 2011; 1(2): 191-199.

Housing interventions and asthma

1. A 26-year-old mother with asthma and allergic rhinitis presents to your clinic for follow-up after a recent admission for asthma exacerbation. She had childhood asthma but it has worsened since moving to the city a year ago. In the past year, she has had 2 hospital admissions and 3 emergency department visits for asthma exacerbation. She is on appropriate treatment for both her asthma and allergic rhinitis. She does not smoke but her boyfriend does, and he often stays in her apartment. She acknowledges that her apartment is a bit run-down. She mentions that her 4-year-old daughter has also had recent ED visits for asthma exacerbations. You are concerned that allergens and irritants are affecting asthma control of both her and her daughter.

Which of the following recommendations are appropriate for this patient?

1. Allergen-impermeable covers on mattress, box spring and pillows
2. Mold and dampness remediation
3. HEPA air purifier for the bedroom
4. Integrated pest management
5. Smoking cessation advice for her boyfriend
6. **All of the above**

**Fast fact**: A multifaceted, home-based, environmental intervention can decrease exposure to indoor allergens, including cockroach and dust-mite allergens, tobacco smoke, and mold, resulting in lower asthma-associated morbidity and urgent health care utilization. Under Department of Energy guidelines, recipients of Supplemental Security Income or Aid to Families with Dependent Children are automatically eligible to receive weatherization assistance. In other cases, states give preference to people over 60 years of age, families with one or more members with a disability, and families with children (in most states).

**Reference**

Morgan WJ, Crain EF, Gruchalla RS, O’Connor GT, et al. [Results of a home-based environmental intervention among urban children with asthma](http://www.ncbi.nlm.nih.gov/pubmed/15356304). NEJM 2004; 351:1068-80

Krieger J, Jacobs DE, Ashley PJ, Baeder A, et al. [Housing interventions and control of asthma-related indoor biologic agents: a review of the evidence](http://journals.lww.com/jphmp/Fulltext/2010/09001/Housing_Interventions_and_Control_of.4.aspx). J Public Health Management Practice 2010; 16(5): S11-S20

Dick S, Doust E, Cowie H, Ayres JG, Turner S. [Associations between environmental exposures and asthma control and exacerbations in young children: a systematic review](http://www.ncbi.nlm.nih.gov/pubmed/24523420). BMJ Open 2014; 4(2): eoo3827. doi: 10.1136/bmjopen-2013-003827

Krieger J, Takaro T, Song L, Weaver M. [A randomized, controlled trial of community health worker intervention to decrease exposure to indoor asthma triggers](http://www.ncbi.nlm.nih.gov/pubmed/15798126). Am J Public Health 2005;95(4):652-659

Health benefits of Medicaid

1. A 52-year-old man presents to an outpatient clinic for management of his hypertension. He normally takes 3 medications for his blood pressure and reports good blood pressure control when taking medications. However, he recently lost his job as a janitor, has been unable to afford his medications, and has missed several follow-up appointments in your clinic. He does not smoke or drink alcohol. He lives by himself and has one son who is under the custody of his ex-wife. Last year, he lived in a homeless shelter for 3 months because he was unemployed. His review of systems is negative. On physical examination, BP is 170/96 mm Hg and pulse rate is 72/min. The physical examination is otherwise normal. You have already verified that his prescriptions are available on the local pharmacy’s discount prescription plan.

Which intervention may help your patient improve medication adherence and access to care?

1. Connect him to a social service agency to help him find a higher-paying job with insurance coverage
2. Refer him to Social Security Administration to apply for disability benefits
3. **Refer him to a consumer assistance program to enroll in Medicaid or subsidized health insurance**
4. Refer him to a community health center that offers sliding scale fees for prescriptions and clinical services

**Fast fact**: Health insurance coverage is associated with better health outcomes and financial security for adults and children. Depending on state-specific criteria for enrollment,\* this patient may be eligible for Medicaid coverage, which is associated with improved health care access, increased preventative care services, decreased likelihood of unmet health care needs (e.g., prescription drugs), and substantially decreased likelihood of catastrophic medical expenses. Preliminary evidence also suggests improved mental health outcomes and self-reported health for patients with Medicaid coverage.

**Reference**

Baicker K, et al. [The Oregon Experiment – effects of Medicaid on clinical outcomes](http://www.nejm.org/doi/full/10.1056/NEJMsa1212321). NEJM 2013; 368(18): 1713-1722

DeLeire T, et al. [Wisconsin experience indicates that expanding public insurance to low-income childless adults has health care impacts](http://content.healthaffairs.org/content/32/6/1037.abstract). Health Affairs 2013; 32(6):1037-1045

[What is Medicaid’s impact on access to care, health outcomes and quality of care?](https://kaiserfamilyfoundation.files.wordpress.com/2013/08/8467-what-is-medicaids-impact-on-access-to-care1.pdf) Kaiser Commission on Medicaid and the Uninsured, August 2013

Long SK, et al. [National findings on access to health care and service use for non-elderly adults enrolled in Medicaid](https://docs.google.com/viewer?a=v&pid=sites&srcid=bWFjcGFjLmdvdnxtYWNwYWN8Z3g6ZGI1YmY1ZTZmYzA0NmQx). MACPAC Contractor Report No. 2, June 2012

Coughlin TA, et al. [What difference does Medicaid make? Assessing cost effectiveness, access, and financial protection under Medicaid for low-income adults](http://kaiserfamilyfoundation.files.wordpress.com/2013/05/8440-what-difference-does-medicaid-make2.pdf). Kaiser Commission on Medicaid and the Uninsured, May 2013

\* <https://www.healthcare.gov/do-i-qualify-for-medicaid/>

Patients need legal care to be healthy

1. A 30-year-old man who is paraplegic from a motor vehicle accident 7 years ago presents for routine follow-up. He is upset that his home and community-based services and support (HCBS) were discontinued. He began working as a freelance writer 2 months ago and his earned income has made him ineligible for these services. Living by himself, he relies on homemaker and personal care services for assistance with bathing, house cleaning, and meal preparation. He has no new physical complaints. He performs intermittent self-catheterization. Medications include oxymorphone and tolterodine. On physical examination, temperature is 37.2, blood pressure is 110/70, pulse rate is 60/min, BMI is 28. He appears disheveled with no other remarkable findings.

He asks you for a letter to resume HCBS services. The best course of action at this time is:

1. Provide a letter to the local Department of Human Services office requesting to resume home services
2. **Refer him to a medical-legal partnership to help reestablish his home services**
3. Advise him to stop working so he can qualify for benefits again
4. Refer him to meals on wheels and a low-cost personal care agency

**Fast facts**: Medical social workers are underfunded and often do not have the tools to deal with government bureaucracies and the legal system. Medical legal partnerships (MLPs) consist of medical professionals and attorneys working together to provide services for vulnerable patients outside hospitals and clinics. MLPs address safety and domestic violence concerns, unsafe housing, including unlawful evictions and landlord-tenant issues, and income maintenance and disability benefits. Preliminary research on MLPs demonstrates increased access to resources, reduced stress for patients and improved awareness of public health issues and social services by health care professionals.

Home and community-based services (HCBS) provide opportunities for Medicaid beneficiaries to receive services in their own home or community. These programs serve a variety of targeted populations groups, such as people with mental illnesses, intellectual or developmental disabilities, and/or physical disabilities.

**Reference**

Cohen E, Fullerton DF, Retkin R, et al. [Medical-legal partnership: collaborating with lawyers to identify and address health disparities](http://www.ncbi.nlm.nih.gov/pubmed/20352508). J Gen Intern Med 2010; 25(S2): S136-9

Ryan AM, Kutob RM, Suther E, Hansen M, Sandel M. [Pilot study of impact of medical-legal partnership services on patients’ perceived stress and wellbeing](http://www.ncbi.nlm.nih.gov/pubmed/23698668). J Health care for the Poor and Underserved 2012; 23:1536-1546

## Ready for discharge but nowhere to go?

14. A 44-year-old man was admitted from the emergency department because of an infected and painful venous stasis ulcer. He was hospitalized 2 weeks ago with similar complaints as well as alcohol intoxication. He had stopped drinking since the last discharge but has had difficulty with wound care while staying at local emergency shelters or sleeping on the streets. He improves during this hospital stay with daily wound care and antibiotics. You deem he is ready for discharge but will require continued dressing changes and oral antibiotics over the coming weeks. He does not have health insurance and does not have secure housing.

Q: Which of the following options has the best chance of healing his wound and preventing readmission to the hospital?

1. Contact a local emergency shelter to ensure that he has a bed waiting for him on discharge
2. Refer him to a community clinic specializing in homeless individuals for daily dressing change
3. **Make arrangements for him to enter a medical respite program upon discharge**
4. Transfer him to a skilled nursing facility for continuing care
5. Refer him to a residential drug and alcohol rehabilitation program

**Fast Fact**:

Homeless individuals rely heavily upon hospitals and emergency departments for health care and psychosocial needs. Medical respite programs offer homeless individuals housing and services to allow better recovery from illness and stabilization of chronic conditions. Models of care range from collaborative arrangements with local shelters or motels and visiting clinical teams, to stand-alone facilities with 24-hour medical care. Studies have shown that medical respite programs reduce future hospital admissions and hospital days, reduced 90-day hospital readmissions, and reduced hospital length of stay among homeless patients. Such programs may also decrease emergency room visits for homeless patients.

**Reference:**

Doran KM, Ragins KT, Gross CP, Zerger S. [Medical respire programs for homeless patients: a systematic review.](http://www.ncbi.nlm.nih.gov/pubmed/23728025) J Health Care Poor Underserved 2013; 24:499-523

Sadowski LS, Kee RA, VanderWeele TJ, Buchanan D. [Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: a randomized trial](http://www.ncbi.nlm.nih.gov/pubmed/19417194). JAMA 2009; 301:1771-8

## “Just Tripping”

15. A 78-year-old woman is seen by her PCP for follow-up after an ED visit for a right distal radius fracture from tripping and falling on her outside steps. She denies having experienced palpitations, chest discomfort, lightheadedness, vertigo or loss of consciousness at the time of the fall. Prior to her fall, she was active and walked daily. She lives by herself.

On physical examination, her blood pressure is 144/82 mm Hg and pulse is 96/min. No orthostatic hypotension is observed. BMI is 26. Lenses are slightly opacified bilaterally with visual acuity of 20/40 in both eyes. Pulmonary and cardiac exams are normal. She has a cast from the right elbow to her hand. Her fingers are swollen but warm with good capillary refill. Neurological exam is normal including proprioception, muscle strength and gait testing. She is able to stand upright with her feet together, both with her eyes open and closed.

Lab: B12 – 310 ng/L; electrolyte/creatinine/BUN normal; 25-OH-D – 290 ng/ml; CBC is normal with hemoglobin of 12.6; MCV 89.

Q: You refer patient to physical therapy for group or home-based fall prevention exercise program. Which additional intervention would reduce injuries from falls for this patient?

1. Advise her to wear slip-resistant footwear
2. Refer her to ophthalmology for potential cataract surgery
3. **Refer her to an agency to assist with home safety modifications**
4. Start her on daily dose of 800 IU vitamin D3 and 1200 mg of calcium supplementation

**Fast Fact:**

Falls and fall-associated injuries are common among community dwelling older adults. Exercise programs designed to improve balance, gait, strength, and flexibility can prevent serious falls in older adults living at home. Home modifications such as handrails for outside steps and internal stairs, grab rails for bathrooms, outside lighting, and slip-resistance surfacing for outside areas such as decks and porches have also been shown to reduce injuries from falls. There is conflicting data on the benefit of Vitamin D supplementation in the reduction of falls. In terms of combined Vitamin D and calcium, the USPSTF concludes that the current evidence is also insufficient to assess the balance of the benefits and harms of supplementation with greater than 400 IU of vitamin D and greater than 1,000 mg of calcium for the primary prevention of fractures in non-institutionalized postmenopausal women. The role of cataract surgery in preventing falls remains inconclusive.

**REFERENCE**

El-Khoury F, Cassou B, Charles MA, Dargent-Molina P. [The effect of fall prevention exercise programmes on fall induced injuries in community dwelling older adults: systematic review and meta-analysis of randomized controlled trials](http://www.bmj.com/content/347/bmj.f6234). BMJ 2013; 347:f6234

Keall MD, et al. [Home modifications to reduce injuries from falls in the Home Injury Prevention Intervention (HIPI) study: a cluster-randomised controlled trial](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)61006-0/abstract). Lancet. 2014; [doi.org/10.1016/S0140-6736(14)61006-0](http://dx.doi.org/10.1016/S0140-6736(14)61006-0)

Meuleners LB, Fraser ML, Ng J, Morlet N. [The impact of first- and second-eye cataract surgery on injurious falls that require hospitalization: a whole-population study](http://www.ncbi.nlm.nih.gov/pubmed/24192250). Age Ageing 2014; 43(3):341-6

Moyer VA, USPSTF. [Vitamin D and calcium supplementation to prevent fractures in adults: U.S. Preventive Services Task Force Recommendation Statement](http://annals.org/article.aspx?articleid=1655858). Ann Intern Med. 2013; 158:691-696

## A prescription for kindness

16. A 66-year-old woman presents for her annual wellness visit. She is concerned about occasional forgetfulness and would like to be screened for dementia. Her past medical history is significant for knee osteoarthritis and depression. She lives by herself and recently retired from her work as a librarian for 20 years. She spends her free time reading novels, watching television, trying out new recipes and emailing her family and friends. She used to walk 5 miles every day to and from work and is concerned that she is less active now despite continuing to walk two miles a day for exercise. She reports good pain control with daily acetaminophen and naproxen as needed. She stopped taking citalopram last year because her mood and stress had improved since retirement. She denies anhedonia, fatigue, poor sleep, change in appetite or weight, dizziness, fall or incontinence. She has never smoked. Family history is significant for dementia in her father and osteoarthritis in her mother.

On physical examination, temperature is normal, blood pressure is 124/72 mm Hg, and pulse is 82/min. BMI is 30. Musculoskeletal exam does not reveal joint effusion, warmth or erythema. Neurologic exam is normal without sensory deficits, cerebellar signs or abnormal gait. With Mini-Cog testing, she is able to recall 3 items after delay and her clock draw is accurate. She is up to date with age-appropriate immunizations and cancer screening.

Laboratory studies show normal TSH and B12; total cholesterol of 190; HDL 40; A1C 5.2.

Q: She would like to know if there is anything else she should do besides keeping up with daily exercise and healthy eating. Which of the following advice might offer benefits in preventing physical disability and preserving cognitive function?

A. Recommend a high protein diet rich in anti-oxidants   
B. **Encourage her to volunteer for a school or service organizations in her community**

C. Advise her to take fish oil supplements  
D. Start her on statin to reduce her risk for stroke and dementia  
E. Encourage her to do crossword puzzles and play board games everyday

**Fast Fact**:

Volunteering is associated with reductions in symptoms of depression, better overall health, fewer functional limitations, and greater longevity for the elderly. Cognitive activity embedded within social settings may confer significant cognitive benefits for older adults. Studies show that omega-3 fatty acid supplementation does not prevent cognitive decline in healthy adults.

**REFERENCE**

Anderson ND, et al. [The benefits associated with volunteering among seniors: a critical review and recommendations for future research](http://www.ncbi.nlm.nih.gov/pubmed/25150681). Psychol Bull 2014; 140:1505-33

Barron JS, et al. [Potential for intensive volunteering to promote the health of older adults in fair health](http://www.ncbi.nlm.nih.gov/pubmed/19488860). J Urban Health 2009;86:641-53

Sydenham E, Dangour AD, Lim WS. [Omega 3 fatty acid for the prevention of cognitive decline and dementia](http://www.ncbi.nlm.nih.gov/pubmed/22696350). Cochrane Database of Systematic Reviews 2012; 6: 6:CD005379. doi: 10.1002/14651858.CD005379.pub3

## Why am I so low?

17. A 47 year- old Caucasian women returns to your clinic for a routine follow up appointment for diabetes management. She has a history of insulin-dependent type 2 diabetes, hypertension, hyperlipidemia and obesity (BMI 56). Despite regular visits to your clinic, it has been a challenge for her to manage her chronic health problems. She is a single grandmother who has been dependent on public assistance since dropping out of high school at the age of 16. She is currently the legal guardian for her two grandchildren since her daughter has been hospitalized for psychiatric reasons.

Her current insulin regimen includes glargine 48 units BID and lispro 38 units with meals. Despite having been taught to monitor her blood sugar regularly in diabetes education class, she frequently forgets to check and did not bring her glucometer to clinic. She reports that 1-2 times per week she feels tremulous and lightheaded but immediately feels better after eating a small candy bar. Her labs are significant for an improvement of HA1c from 8.3 to 5.9; however you are concerned that she is experiencing frequent episodes of hypoglycemia.

Which of the following risk factors has been shown to be associated with hypoglycemic events?

1. Obesity
2. Hypertension
3. **Low income and education attainment**
4. Emotional/ Familial stressors

**Fast Fact:**

The ACCORD Trial demonstrated that those who develop hypoglycemia are at risk for other adverse events. Joint guidelines on glycemic control from the American Diabetic Association (ADA) and European Association for the Study of Diabetes (EASD) emphasized the importance of careful individualizations of HgA1c targets for patients. This has been shown to be especially important for those with higher risk for hypoglycemia, such as older diabetics, those with depression, and chronic kidney disease. The DISTANCE study demonstrated an association with hypoglycemia and low socioeconomic status, specifically low income and educational attainment. This effect might be distinct from level of health literacy as the data on health literacy and diabetes outcomes does not show consistent correlations. At this time, there is insufficient data on how to address the effect of low socioeconomic status on diabetes outcomes, but practitioners should consider low SES when setting treatment targets and choosing medications.

**Reference:**

Berkowitz SA, Karter AJ, Lyles CR, Liu JY, Schillinger D, Adler NE, Moffet HH, Sarkar U. [Low Socioeconomic Status is Associated with Increased Risk for Hypoglycemia in Diabetes Patients: The Diabetes Study of Northern California (DISTANCE)](http://www.ncbi.nlm.nih.gov/pubmed/24858863). J Health Care Poor Underserved. 2014 Feb; 25(1):292-307. doi: 10.1353/hpu.2014.0044.

Duran-Nah JJ, Rodriguez-Morales A, Smitheram J, Correa-Medina C. [Risk factors associated with symptomatic hypoglycemia in type 2 diabetes mellitus patients](http://www.ncbi.nlm.nih.gov/pubmed/19378831). Rev Invest Clin. 2008 Nov-Dec; 60(6):451-8

Al Sayah F, Majumdar SR, Williams B, Robertson S, Johnson JA. [Health literacy and health outcomes in diabetes: a systematic review](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3579965/). J Gen Intern Med. 2013; 28:444-452

## Give me skills, give me confidence!

18. A 56-year-old Spanish-speaking woman who recently immigrated from El Salvador presents to your clinic to establish care. She reports several months of migraine and tension headaches, chronic knee pain, and gastritis for which she has been prescribed acetaminophen 1g q8h, topiramate 25mg BID, and ranitidine 150mg BID. Her symptoms have not improved despite regular follow up and adjustment of her medications.

Though you use an interpreter during each of your visits, she is relatively quiet and often simply nods in agreement. You are unsure whether she is actively participating in her healthcare decision-making. You are interested in better understanding her decisions and empowering her to ask questions and show preference in treatment options.

At her next visit, what would be the best approach to increase her involvement in her medical care?

1. **Refer her to a staff member or health coach who has been trained in patient activation interventions to help her formulate and prioritize questions for the healthcare visit.**
2. Ask her to review Spanish language medication instruction and patient education hand-outs at home and brainstorm questions for the next visit
3. Insist that she write down at least 2 questions for each visit
4. Ask her to bring a family member or friend to provide interpretation, as she may be more comfortable in their presence

**Fast Fact:**

Patient activation describes an individual’s preparedness to participate in their health care. The objective of patient activation interventions are to increase patient engagement in their care by helping patients identify medical decisions and the questions that may help inform those decisions, and use that information to prepare questions for their upcoming doctor visits. The intervention consists of five steps: 1) understanding decisions, 2) choosing a focus for health care visit, 3) brainstorming questions, 4) identifying different types of questions, and 5) prioritizing questions. Patient activation interventions have been shown to be useful, particularly for patients from lower SES populations. It has also been shown that more activated patients incur lower costs of care, engage in healthier behavior, and have more favorable outcomes, such as lower BMI, HA1c, BP, and cholesterol.

**Reference:**

Deen D, Lu W, Rothstein D, Santana L, Gold MR. [Asking questions: The effect of a brief intervention in community health centers on patient activation](http://www.ncbi.nlm.nih.gov/pubmed/20800414). Patient Education and Counseling. 2011 84:257-60

Deen D, Lu W, Weintraub MR, Maranda MJ, Elshafey S, Gold MR. [The impact of different modalities for activating patients in a community health center settings](http://www.ncbi.nlm.nih.gov/pubmed/22683294). Patient Education and Counseling. 2012 89:178-183

Lubetkin EI, Zabor EC, Brennessel D, Kemeny MM, Hay JL. Beyond Demographics: Differences in Patient Activation Across New Immigrant, Diverse Language Subgroups. J Community Health. 2014 39:40-49

Maranda MJ, Deen D, Elshafey S, Herrera M, Gold MR. Response to a Patient Activation Intervention among Spanish-speaking Patients at a Community Health Center in New York City. Journal of Health Care for the Poor and Underserved. May 2014. 25(2): 591-604

Hibbard JH, Greene, J. What The Evidence Shows Abut Patient Activation: Better Health Outcomes and Care Experiences; Fewer Data on Costs. Health Affairs, 2013. 32(2):207-214

Could I ask about firearm in the home?

19. Mr. R is a 52-year-old man with diabetes, osteoarthritis, hepatitis C, history of polysubstance use and depression who presents to his PCP for follow up. He complains of feeling “down” in the past 2 months. He feels hopeless about his chronic pain and walking difficulty. In addition, he suffers from insomnia, difficulty concentrating, irritability, fatigue and lack of motivation with activities of daily living. He endorses a passive death wish and increasing suicidal ideation but has had no previous suicide attempt and has no plan to commit suicide. He has refused to see a psychotherapist because he finds “talk therapy” difficult. He lives with his sister; there are no children at home. Current medications include metformin, glargine and aspart insulins, atorvastatin, aspirin and citalopram. He is smoking ¼ pack per day and denies any alcohol use. His last cocaine use was 2 years ago and last IV heroin was 10 years ago. On physical examination, body mass index is 39 and blood pressure is 120/84 mm Hg. He has peripheral neuropathy and bilateral foot deformity. The remainder of the examination is normal.

Dose of citalopram is adjusted and he was given the crisis hotline number and follow-up appointments in 2 weeks. Upon your inquiry, he discloses that he owns a hand gun which is stored loaded and unlocked on his nightstand. Which of the following additional interventions is NOT associated with a decreased risk of suicide for Mr. R?

1. **Move his handgun from the nightstand to another room in the house**
2. Suggest that he temporarily remove his firearm from the home until his depression and suicidal ideation stabilized
3. Suggest that he use a safe firearm storage device to lock his forearm
4. Suggest that he unload his firearm and store the ammunition separately

**Fast Facts**: The firearm suicide rate in the US is 6.3 per 100,000 in 2010, 8 times higher than other high-income countries. Unintentional firearms deaths were 6.2 times higher in the US. Restricting access to lethal means (e.g., firearms, high-risk medications) is considered a fundamental component of effective suicide prevention strategies. Individuals residing in households with firearms are at greater risk of suicide and firearm-related suicide compared to those in households without firearms. Among individuals living in households with firearms, those living in households where firearms are stored safety (i.e., locked, unloaded) have a lower risk of suicide than those in households with unsafely stored firearms. There are no laws preventing physicians from asking about access to firearms. Physicians may ask about firearms, may counsel about firearms as they do about other health matters, and may disclose information to third parties when necessary. There are 3 conditions when firearms information might be particularly relevant to the health of a patient and potentially to others: 1) acute risk for violence to self or others such as explicit or implicit endorsement of suicidal or homicidal intent or ideation, 2) individual-level risk factors (history of violence, alcohol or drug abuse, serious mental illness, conditions impairing cognition and judgment) for violence to self or others or unintentional firearm injury, and 3) other household members who might be at risk such as children.

References:

[Grinshteyn E, Hemenway D. American Journal of Medicine 2016; 129:266-173](https://www.ncbi.nlm.nih.gov/pubmed/26551975)

[Wintemute GJ, Betz ME, Ranney M. Ann Intern Med. 2016;165(3):205-213](http://annals.org/article.aspx?articleID=2522436)

[Betz ME, Azrael D, Barber C, Miller M. Ann Intern Med. Published online 26 July 2016 doi:10.7326/M16-0739](http://annals.org/article.aspx?articleid=2536867)