

EMPOWERMENT AND SELF-MANAGEMENT OF DIABETES: THE PHARMACIST AND DIABETES CARE

SESSION 3: DIABETES MANAGEMENT FOR OUR SENIOR POPULATION



Date: May 29, 2020



MUTE



CHAT

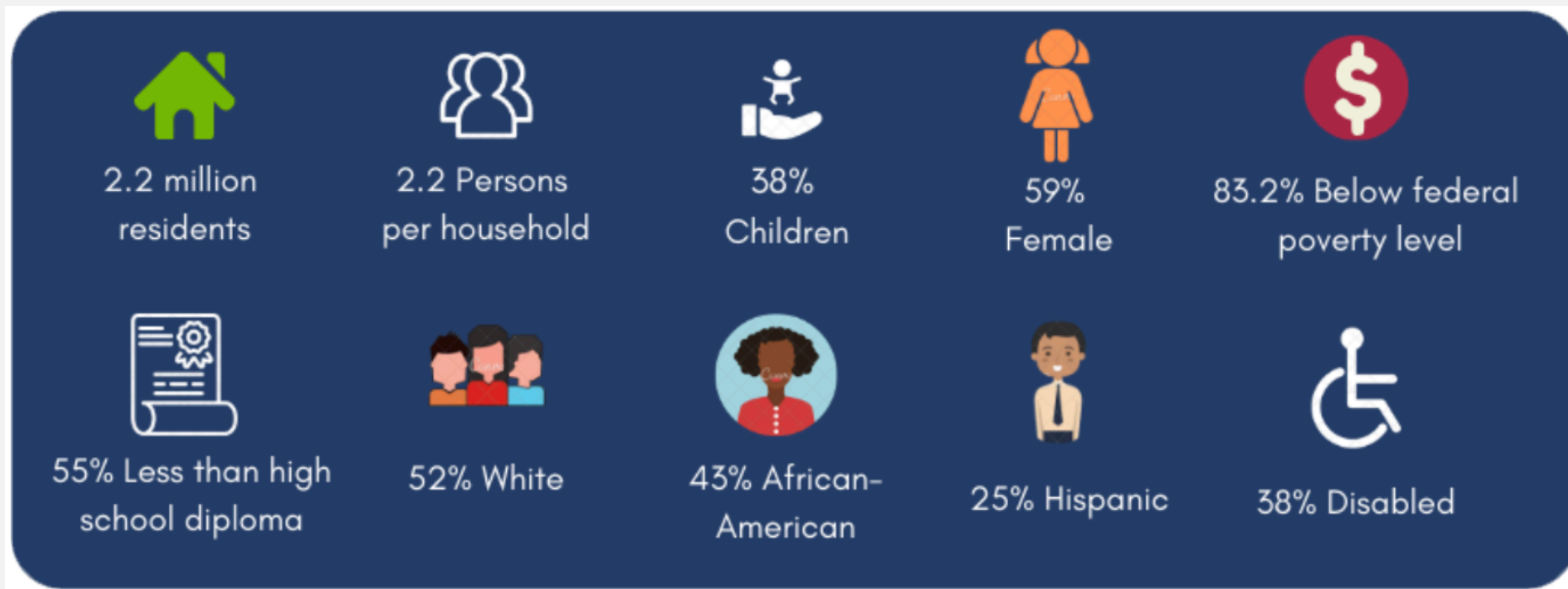


RAISE HAND



Q&A

PUBLIC HOUSING DEMOGRAPHICS



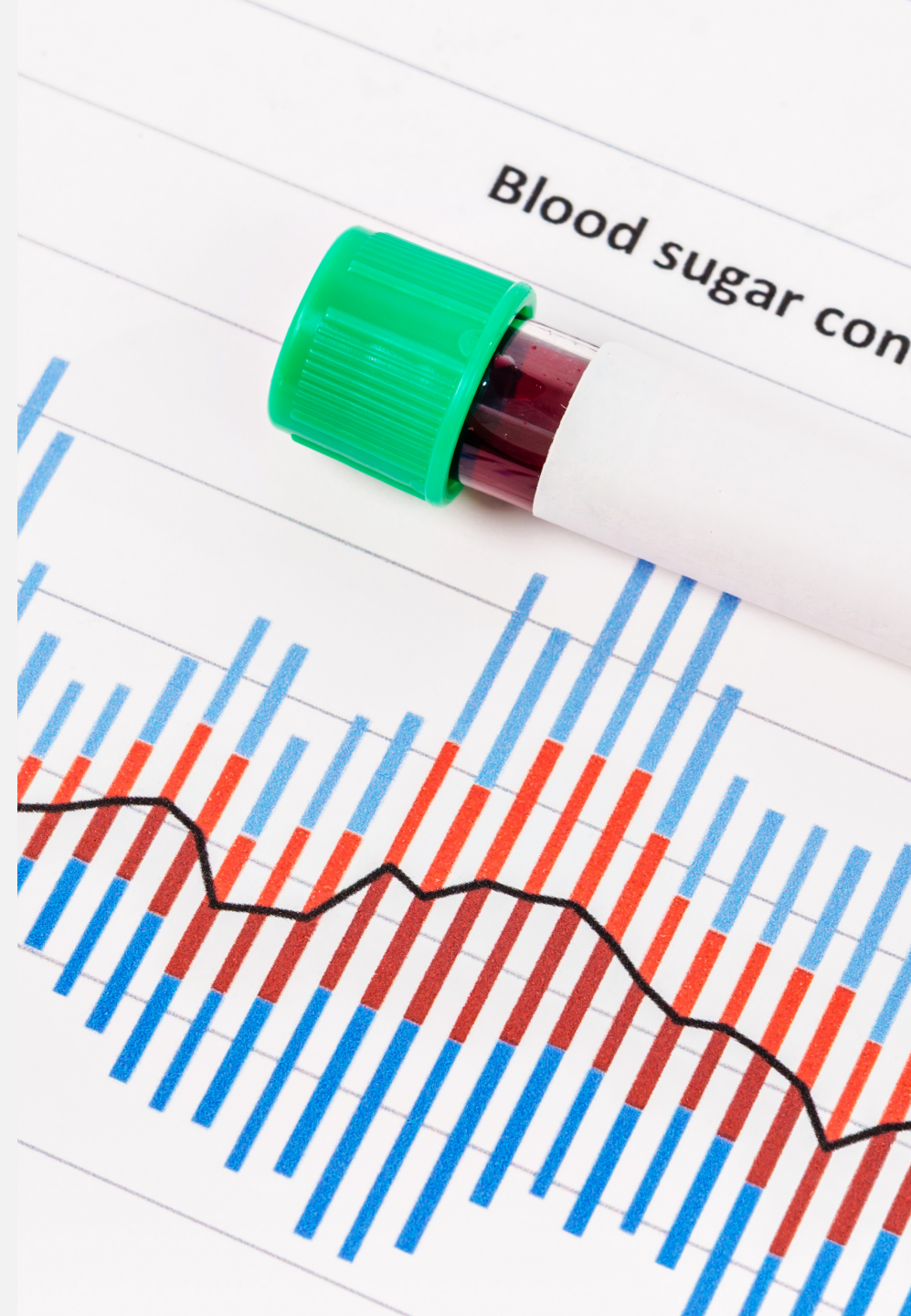
DIABETES IN HEALTH CENTERS

A little over 15% of health center (HC) patients have diabetes

32% of HC patients have Poorly Controlled Hemoglobin A1c (HbA1c > 9%)

9% of Public Housing Grantee patients have diabetes

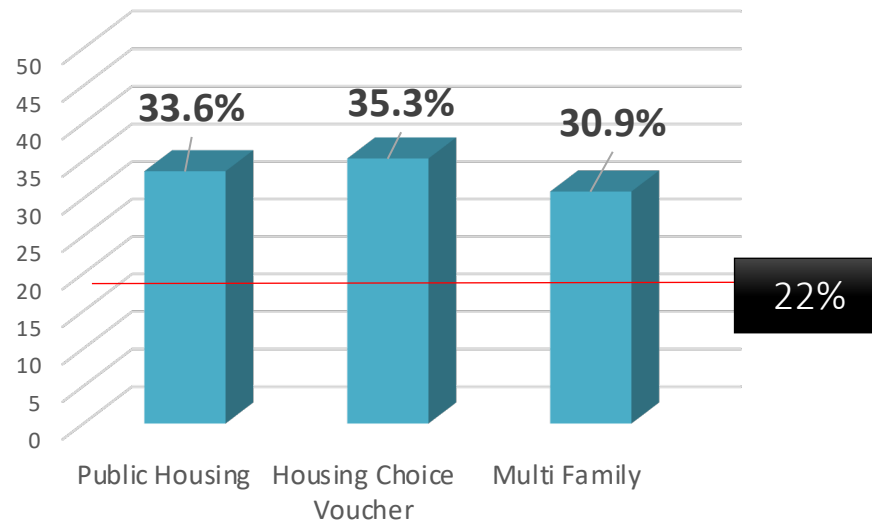
Source: UDS, 2018



A Health Picture of HUD-Assisted Adults, 2006-2012

Adults in HUD-assisted housing have higher rates of chronic health conditions and are greater utilizers of health care than the general population. * Updated version expected in Summer 2020

Adult Smokers with Housing Assistance



Source: Helms VE, 2017

	HUD-Assisted	Low-income renters	All Adults
Fair/Poor Health	35.8%	24%	13.8%
Overweight/Obese	71%	60%	64%
Disability	61%	42.8%	35.4%
Diabetes	17.6%	8.8%	9.5%
COPD	13.6%	8.4%	6.3%
Asthma	16.3%	13.5%	8.7%



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Diabetes Management for our Senior Population

The Pharmacist's Approach



Objectives



- Discuss prevalence and pathogenic characteristics in the older population
- Discuss the comprehensive assessment and factors to consider in our senior population
- Discuss the framework for treatment goals for glycemia, blood pressure and dyslipidemia in older adults
- Discuss recommendations regarding pharmacologic therapy in older adults
- Discuss the rationale for treatment regimen simplification and deintensification/ deprescribing in older adults
- Discuss simplification of complex insulin therapy

Seniors age 65 and older



- Approximately a quarter of the senior population (65 and older) have diagnosed or undiagnosed diabetes. ~14.3 million seniors
- One-third of older adults with diabetes are undiagnosed
- Expected to increase rapidly in the coming decades
- Older adults with diabetes have higher rates than those without diabetes
 - Premature death
 - Functional disability
 - Accelerated muscle loss
 - Co-morbid conditions
 - Hypertension,
 - Coronary heart disease
 - Stroke
- Projections suggest that the number of cases of diagnosed diabetes in those aged ≥ 65 years will increase by 4.5-fold (compared to 3-fold in the total population) between 2005 and 2050

Seniors age 65 and older



- The incidence of diabetes increases with age until about age 65 years, after which both incidence and prevalence seem to level off
- Longstanding disease - older adults with diabetes may either have incident disease (diagnosed after age 65 years) or longstanding diabetes with onset in middle age or earlier
- Have the highest rates of major lower-extremity amputation, myocardial infarction (MI), visual impairment, and end-stage renal disease of any age-group
- Age 75 and older have higher rates than those aged 65–74 years for most complications
- Deaths resulting from hyperglycemic crises also are significantly higher in older adults
- Those age 75 and older have double the rate of emergency department visits for hypoglycemia than the general population with diabetes

Seniors age 65 and older



- Type 2 diabetes—overwhelmingly the most common incident and prevalent type in older age-groups
- Older adults are at high risk for the development of type 2 diabetes due to the combined effects of increasing insulin resistance and impaired pancreatic islet function with aging
- Are at greater risk than other older adults without diabetes for several common geriatric syndromes
 - Polypharmacy
 - Cognitive impairment
 - Decline in ADLs
 - Depression
 - Urinary incontinence
 - Injurious falls
 - Persistent pain
- These conditions may impact older adults' diabetes self-management abilities and quality of life if left unaddressed

Comprehensive Assessment



Factors to Consider

- Assessment of medical, psychological, functional (self-management abilities), and social geriatric domains in older adults **provide the framework** to determine targets and therapeutic approaches for diabetes
- Older adults with diabetes are **at higher risk of cognitive decline** and institutionalization
- People with diabetes **have higher incidences** of all-cause dementia, Alzheimer disease, and vascular dementia than people with normal glucose tolerance
- **Longer duration** of diabetes is associated with worsening of cognitive function
- Cognitive dysfunction makes it difficult for patients to perform complex self-care tasks, such as monitoring glucose
- Hinders their ability to appropriately maintain the timing of meals and content of diet
- Identifying cognitive impairment early has important implications for diabetes care

Comprehensive Assessment



Factors to Consider

Screening, Family, Caregivers, Community Resources and Services, Referrals

Cognitive Function

- Screening for early detection of mild cognitive impairment or dementia should be performed for adults 65 years of age or older at the initial visit and annually as appropriate
- Guideline for the Comprehensive Assessment

Psychosocial conditions

- Screen for depression, anxiety, and disordered eating; refer for further assessment or intervention if warranted
 - Identify existing social supports
 - Consider assessment for cognitive impairment*
- When clinicians are managing patients with cognitive dysfunction, it is **critical to simplify drug regimens** and to facilitate and engage the **appropriate support structure to assist the patient** in all aspects of care
 - **Handout**- Mini-Cog: need only **10 minutes or less** to initially assess a patient for cognitive impairment
 - Assessment for cognitive impairment can be performed at any visit but is now a required component of the Medicare Annual Wellness Visit

Comprehensive Assessment



Factors to Consider

**Screening, Family, Caregivers,
Community Resources and
Services, Referrals**

Cognitive Function

- Red flags in patient presentation:
 - Significant decline in clinical status
 - Increased problems with self-care activities
 - Errors in calculating insulin dose
 - Difficulty counting carbohydrates
 - Skipped meals
 - Skipped medication doses
 - Difficulty recognizing, preventing, or treating hypoglycemia- **hypoglycemia unawareness**
- Consider referral to behavioral health for those that screen positive for formal cognitive/ neuropsychological evaluation

Comprehensive Assessment



Factors to Consider

**Screening, Family, Caregivers,
Community Resources and
Services, Referrals**

Hypoglycemia

- Cognitive decline has been associated with increased risk of hypoglycemia
- Severe hypoglycemia has been linked to increased risk of dementia
- Should be avoided in older adults with diabetes.
- Assess, minimize, and manage by adjusting glycemic targets and pharmacologic regimens

Comprehensive Assessment



Factors to Consider

Screening, Family, Caregivers, Community Resources and Services, Referrals

Functional impairment/Fall Risk

- Interaction of coexisting medical conditions negatively impact functional impairment and increase the risk of fractures
- Avoidance of severe hyperglycemia and hypoglycemia can decrease the risk of falls
- Peripheral neuropathy- limits physical activity and increases risk of falls
 - Present in 50 to 70% of older adults
 - Postural instability -gait and balance problems
 - Muscle atrophy
- Other co-morbid conditions - increase risk of falls:
 - Coronary artery disease
 - Obesity
 - Degenerative bone disease
 - Stroke
 - Depression
 - Visual and hearing impairment
- **Handout** – CMS MLN Booklet on Annual Wellness Visit and the Morse Fall Scale – Fall risk assessment required as part of AWW
- Physical therapy should be encouraged in patients who are at high risk or who have experienced a recent fall

Comprehensive Assessment



Factors to Consider

Screening, Family, Caregivers, Community Resources and Services, Referrals

Functional impairment/Fall Risk

- Sarcopenia - aging population is associated with reduced muscle strength, poor muscle quality, and accelerated loss of muscle mass
- Optimal nutrition and Regular exercise including aerobics activity and resistance training should be encourages in those older adults who can safely engage
- Older adults may be at risk for undernutrition due to anorexia, altered taste and smell, swallowing difficulties, oral/dental issues, and functional impairments leading to difficulties in preparing or consuming food
- **Handout** - The Mini-Nutritional Assessment, specifically designed for older adults, is simple to perform and may help determine whether referral to a registered dietitian for medical nutrition therapy (MNT) is needed (<http://www.mna-elderly.com/>)

Comprehensive Assessment



Factors to Consider

**Screening, Family, Caregivers,
Community Resources and
Services, Referrals**

Functional impairment/Fall Risk

- Recommendations should consider the patient's culture, preferences, and personal goals and abilities
- When nutrition needs are not being met with usual intake, additional interventions may include encouraging smaller more frequent meals, fortifying usual foods, changing food texture, or adding liquid nutrition supplements (either regular or diabetes-specific formulas) between meals
- Identifying community resources such as Meals on Wheels, senior centers, and the U.S. Department of Agriculture's Older Americans Nutrition Program may help maintain independent living status

Comprehensive Assessment



Factors to Consider

**Screening, Family, Caregivers,
Community Resources and
Services, Referrals**

Functional impairment/Fall Risk

- **Handout** - *Guide- Making Physical Activity a Part of an Older Adult's Life* - <https://www.cdc.gov/physicalactivity/basics/adding-pa/activities-olderadults.htm>
- AARP.org- has resources and videos – Tai chi, options for substituting expensive work out equipment
- Find a program - <https://www.medicalguardian.com/medical-alert-blog/fitness/how-to-find-a-gym-for-seniors> - Healthy Sneakers, Enhance Fitness, The Y's Active Older Adults programs
- A Multicomponent plan can include: These activities can be done at home or in a structured group setting
 - Walking (aerobic activity), Dancing
 - Lifting weights (muscle strengthening), Gardening
 - Incorporating balance by walking backwards or sideways or by standing on one foot.
- If weight loss is required - Strategies that combine physical activity with nutrition therapy to promote weight loss may result in improved physical performance and function and reduced cardiometabolic risk in older adults

<https://www.icaa.cc/facilitylocator/facilitylocator.php>

Facilities and services locator

Welcome back to fitness

Walking center

Information guides

Health and lifestyle tips



Facility Locator

Find a fitness or wellness facility or service

The International Council on Active Aging (ICAA) offers this easy-to-use service as a way for users to find age-friendly facilities and services.



Please select-
Fitness Center
Retirement Living
Community Services
Recreation Centre
YMCA

Facility

-- Please select --

State/Prov.

-- Please select --

City

-- Please select --

Zip/Postal

SEARCH

RESET

Comprehensive Assessment



Factors to Consider

**Screening, Family, Caregivers,
Community Resources and
Services, Referrals**

Other considerations

- Persistent pain from neuropathy or other causes or its inadequate treatment is associated with adverse outcomes in older adults including functional impairment, falls, slow rehabilitation, depression and anxiety, decreased socialization, sleep and appetite disturbances, and higher health care costs and utilization
- **Rule out Hyperglycemia** - Urinary incontinence is common in older patients, especially women, with diabetes. In addition to standard assessments and treatments for incontinence, clinicians should remember that **uncontrolled hyperglycemia can increase the amount and frequency of urination.**

Comprehensive Assessment



Factors to Consider

Screening, Family, Caregivers, Community Resources and Services, Referrals

Polypharmacy- generally 5 or more medications

- Patients over 60 years of age consume 50% of dispensed prescription drugs
- Average adherence decreases from approximately 80% in patients taking medication once daily to 50% in those taking medications 4 times a day
- Increases the risk of drug side effects, drug-to-drug interactions, duplication of therapies
- May be **intentional and necessary** to control related comorbidities and reduce the risk of diabetes complications
- Associated with an increased risk of falling in older people- side effects such as syncope, dizziness, sedation
- Cost- multiple medications- adherence can be challenged- donut hole in Medicare Part D

Hand Out – Pharmacy Times Article - Adherence Issues in Elderly Patients

Medication reconciliation, ongoing assessment of the indications for each medication, and the assessment of medication adherence and barriers are needed at each visit.

Comprehensive Assessment



Factors to Consider

Screening, Family, Caregivers, Community Resources and Services, Referrals

Polypharmacy- generally 5 or more medications

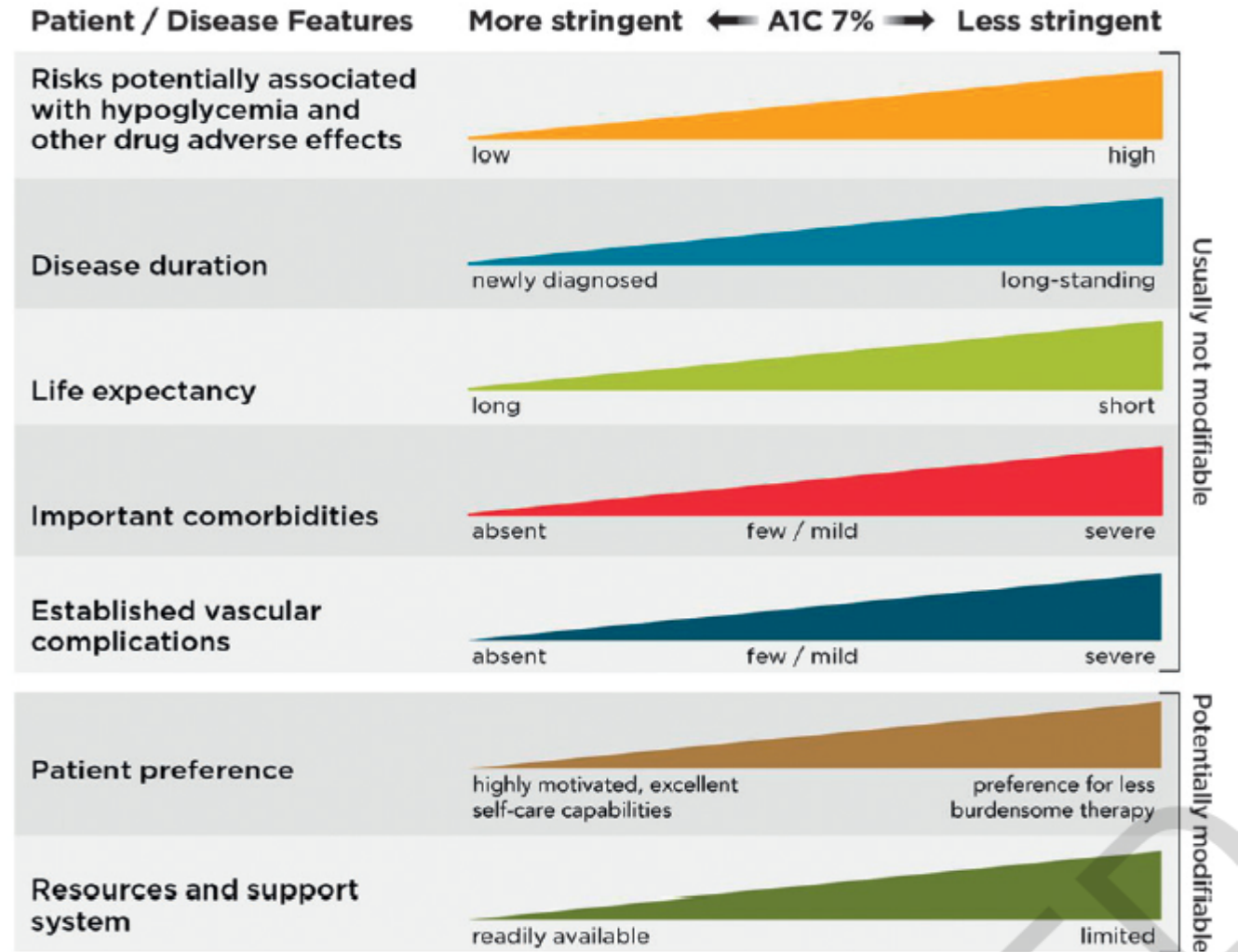
COMMON REASONS FOR NONADHERENCE IN ELDERLY PATIENTS

Reason for Nonadherence	Comment
Patients' assessment of the risk and benefit	Patients may perceive the treatment benefit to be small compared with its cost.
Potential side effects	Elderly patients frequently worry about or experience sedation, constipation, sexual problems, or other adverse events.
Cost	Treatment costs and prescriptions can be burdensome for uninsured or marginally insured individuals. In a survey of 875 older adults, 19% said they had cut back on their medication use in the past year because of cost. ⁹ In the US, 2 million elderly Medicare beneficiaries do not adhere to medicines, citing cost as the reason. ¹⁰
Regimen complexity	Patients prefer simple, easily remembered medication regimens; once-daily, transdermal, or other convenient dosing formulations enhance adherence with chronic drug therapy.
Fear of addiction	Many patients avoid pain medication or reduce the dose, believing that all pain medications are addictive. In a survey of 324 patients, more than one third believed that prescribed analgesics had dependence risks or unwanted long-term effects. Those with the strongest belief were the least adherent. ¹¹
Cognitive decline	Lack of understanding increases risk of nonadherence.

- **Life Expectancy and Health Status – How sick is your patient?** patient and disease-related factors to consider when determining individualized glycemic targets



Approach to Individualization of Glycemic Targets



Treatment Goals



- **Health Status-** Older adults who are **otherwise healthy** with few coexisting chronic illnesses and intact cognitive function and functional status should have lower glycemic goals (such as A1C less than or equal to **7.5%** [58 mmol/mol]), while **those with multiple coexisting chronic illnesses, cognitive impairment, or functional dependence** should have less-stringent glycemic goals (such as A1C less than or equal to **8.0–8.5%** [64–69 mmol/mol])
- **Avoid Hyperglycemia** leading to symptoms or risk of acute hyperglycemia complications should be avoided in all patients
- Screening for diabetes complications should be individualized in older adults. Particular attention should be paid to **complications that would lead to functional impairment-** vision, lower extremity- foot care

Treatment Goals



Health Status	Life Expectancy	A1C Less Than	Fasting Glucose mg/dL	Bedtime Glucose mg/dL	BP Less Than	Lipids
Healthy	Longer	7.5%	90-130	90-150	140/90	Statin
Complex	Intermediate	8.0%	90-150	100-180	140/90	Statin
Very Complex	Limited	8.5%	100-180	110-200	150/90	Consider benefit- less evidence supporting value

- Treatment individualization – categories are not all inclusive – clinical judgement
- Lower A1C goal may be set for an individual if achievable without recurrent or severe hypoglycemia or undue treatment burden
- Many conditions associated with increased red blood cell turnover, such as hemodialysis, recent blood loss or transfusion, or erythropoietin therapy, are commonly seen in older adults with functional limitations and can falsely increase or decrease A1C- plasma blood glucose and fingerstick readings should be used
- Self-management knowledge and skills should be reassessed when regimen changes are made, or an individual's functional abilities diminish

Pharmacologic Therapy



Recommendations and Considerations

- In older adults with type 2 diabetes at **increased risk of hypoglycemia**, medication classes with low risk of hypoglycemia are preferred
 - Increased risk for adverse drug events
 - **Age related changes** in pharmacokinetics (reduced renal elimination)
 - Pharmacodynamics – increased sensitivity to drug SEs
 - Decline in functional status- consider support structures- **important to match complexity of the treatment regimen to the self-management ability**
- Overtreatment of diabetes is common in older adults and should be avoided- **Polypharmacy- medication reviews are essential**
- **Our Focus and Strategy- Deintensification (or simplification)** of complex regimens is recommended to reduce the risk of hypoglycemia and polypharmacy, if it can be achieved within the individualized A1C targets
- **Consider costs (Fixed Incomes)** of care and insurance coverage rules when developing treatment plans in order to reduce risk of cost-related nonadherence- **overburdening increases costs and increases likelihood of treatment failure**
- Remember Older adults are commonly associated with low health literacy levels – Assess for disease treatment and self-management knowledge, **health literacy [REALM]**, and mathematical literacy (numeracy)[**Nutritional Label Education**] at the onset of treatment

Pharmacologic Therapy



Recommendations and Considerations

- **Metformin** – Is oral and therefore less complex. First line in older adults unless contraindicated. Consider:
 - **Renal Function (GFR Less than or equal to 30 mL/min)**
Contraindicated in patients with advanced renal insufficiency
 - **Increased risk of Lactic Acidosis** -Use caution in patients with impaired hepatic function or congestive heart failure
 - **GI-** increased risk for inadequate nutrition – reduced appetite
- **TZDs** – Use caution – those with or at risk for congestive heart failure, osteoporosis, falls or fractures, bladder cancer, and/or macular edema
- **Secretagogues - SUs-** use extreme caution. High risk for hypoglycemia- If used at all use shorter acting Glipizide or Glimepiride. Avoid Glyburide

Pharmacologic Therapy



Recommendations and Considerations

- Incretin Based Therapies- Consider Cost and Self management ability for injectables:
 - DDP4 Inhibitors- oral - few SEs, low risk of hypoglycemia
 - GLP1-RAs – demonstrated cardiovascular benefits among patients with established atherosclerotic cardiovascular disease. With exception of oral semaglutide the rest are injectable consider patient support structure and functional abilities – visual, motor, and cognitive status. Limiting factor may be GI side effects – N/V/D - may affect appetite- avoid in patients experiencing weight loss
- SGLT 2 inhibitors – oral – Cost - demonstrated cardiovascular benefits among patients with established atherosclerotic cardiovascular disease. This class of agents has also been found to be beneficial for patients with heart failure and to slow the progression of chronic kidney disease. Low risk of hypoglycemia. Caution with volume depletion, genital infections, and Urinary incontinence - common in older adults

Pharmacologic Therapy



Recommendations and Considerations

- **Insulin**
 - **Functional Status and Support Structure** - requires that patients or their caregivers have good visual and motor skills and cognitive ability – Pens are easier but more expensive
 - **High risk for hypoglycemia-** (nocturnal) especially with complex regimens
 - **Once-daily basal insulin injection therapy** is associated with minimal side effects and may be a reasonable option in many older patients
 - **Multiple daily injections of insulin** may be too complex for the older patient with advanced diabetes complications, life-limiting coexisting chronic illnesses

Pharmacologic Therapy



Recommendations and Considerations

- **Tailored care plan**- individualize treatment based on **patient preference**, functional status (motor, visual, cognitive), comorbidities, life expectancy, social support
- **Quality of Life** – independence is important in the older population - may require an approach that emphasizes comfort and symptom management- deemphasis on tight control
- **Living situation** – assisted living, nursing home, living with family, lives alone
- **Caregivers** – children, spouses/partners
- **Shared Decision Making** – **balanced discussions between patient preference and provider clinical focus** - include family and caregivers - emotional support for older adults with diabetes should be included in diabetes management discussions

Pharmacologic Therapy



**Rational for
deintensification
and simplification**

- Deintensification of regimens in patients taking noninsulin glucose-lowering medications can be achieved by either lowering the dose or discontinuing some medications, so long as the individualized glycemic target is maintained
 - i.e. glimepiride 4mg to glimepiride 2mg, or discontinue sulfonylurea altogether especially if hypoglycemia is evident
- Studies have shown deintensification is safe and possibly beneficial for older adults
- When patients are found to have difficulty with complex insulin regimens lowering the dose is not sufficient
- Simplification of the insulin regimen without worsening glycemic control has been shown to reduce hypoglycemia and disease related-distress
- Match an individual's self-management abilities
- Consider their available social and medical support systems

Simplification = decreasing complexity of regimen- fewer injections, administration times, calculations

Deintensification/deprescribing = decreasing the dose or frequency of administration of a treatment or discontinuing a treatment altogether

Health Status	A1C Less Than	Rational/ Considerations	Consider Simplification of insulin	Deintensification of regimen
Healthy	7.5%	<ul style="list-style-type: none"> Can generally perform complex tasks when in good health During acute illness, patients may be more at risk- hypoglycemia, falls 	<ul style="list-style-type: none"> Severe or recurrent hypoglycemia Wide glucose excursions Cognitive or functional decline occurs following acute illness 	<ul style="list-style-type: none"> Severe or recurrent hypoglycemia occurs in patients on noninsulin therapies Wide glucose excursions Polypharmacy
Complex	8.0%	<ul style="list-style-type: none"> Comorbidities may affect self-management abilities and capacity to avoid hypoglycemia Long-acting medication formulations may decrease pill burden and complexity 	<ul style="list-style-type: none"> Severe or recurrent hypoglycemia Unable to manage complexity Significant change in social circumstances – death of a spouse, financial 	<ul style="list-style-type: none"> Severe or recurrent hypoglycemia occurs in patients on noninsulin therapies Wide glucose excursions Polypharmacy
Community-dwelling patients receiving care in a skilled nursing facility for short-term rehabilitation	Avoid reliance on A1C Glucose target: 100–200 mg/dL	<ul style="list-style-type: none"> Glycemic control is important for recovery, wound healing, hydration, and avoidance of infections Patients recovering from illness may not have returned to baseline cognitive function at the time of discharge Consider support patient will receive at home 	<ul style="list-style-type: none"> If treatment regimen increased in complexity during hospitalization, it is reasonable, in many cases, to reinstate the prehospitalization medication regimen during the rehabilitation 	<ul style="list-style-type: none"> If the hospitalization for acute illness resulted in weight loss, anorexia, short-term cognitive decline, and/or loss of physical functioning
Very complex/poor health (long-term care or end-stage chronic illnesses or moderate-to severe cognitive impairment or 2+ ADL dependencies)	8.5%	<ul style="list-style-type: none"> Avoid tight control Avoid hypoglycemia Most important outcome is maintenance of cognitive and functional status 	<ul style="list-style-type: none"> Patient preference - the patient would like to decrease the number of injections and fingerstick blood glucose monitoring events each day Nutrition is compromised - Presence of an inconsistent eating pattern 	<ul style="list-style-type: none"> High hypoglycemia risk in the context of cognitive dysfunction, depression, anorexia, or inconsistent eating pattern If taking any medications without clear benefits i.e. indications, risk higher than benefit
End of Life	Avoid symptomatic hyperglycemia and hypoglycemia	<ul style="list-style-type: none"> Provide comfort and avoid tasks or interventions that cause pain or discomfort Caregivers are of high importance to provide care and quality of life 	<ul style="list-style-type: none"> Pain or discomfort caused by treatment (e.g., injections or fingersticks) Caregiver stress due to treatment complexity 	<ul style="list-style-type: none"> If taking any medications without clear benefits in improving symptoms and/or comfort

Pharmacologic Therapy



Patient Case

- Patient Maria- 72 y.o.- Hispanic with limited English. A1C- 6.8%
- Medical History of hypertension, hyperlipidemia, osteoporosis, urinary incontinence. Was hospitalized for hyperglycemia and insulin glargine 20 units daily at bedtime was added to her regimen in the hospital. Lost her husband 2 months ago. You are seeing her after 2 weeks of being discharged upon referral of primary doctor for medication management. She presents with 2 weeks worth of SMBG; 5 out of 12 readings in the morning are below 70mg/dL, rest are within range. Her mood is teary, appears distressed over her situation. She reports adherence with all medications but doesn't like the needles. She explains that after her husband passed away, she would typically forget to take her medications especially those that she was supposed to take multiple times in a day. She also has a history of falls, has had 2 falls in the last year that did not require hospitalization. She has lost 10 pounds since her husband died. Pertinent labs – LDL – 65 HDL – 37 BP in range 115/80.
- Current Medications-
 - Metformin 1000mg BID
 - Insulin glargine 20 units HS
 - Atorvastatin 40mg QD
 - Lisinopril 10mg QD
 - Alendronate 70mg once a week
 - Ditropan 5mg TID
 - BD-100 syringes

Pharmacologic Therapy



**Rational for
deintensification
and simplification**

- What medication(s) would you target for deintensification with respect to her diabetes treatment plan?
 - a. Metformin
 - b. Insulin glargine
 - c. Lisinopril
 - d. All of the above

- **Hypoglycemia** –A1C is 6.8% and she has multiple readings in the hypoglycemic range
Discontinue insulin glargine
Return to prehospitalization regimen with Metformin

- **Complex multiple chronic illnesses-** Cognitive decline after acute illness and she has had a significant loss
An A1C closer to 7.5% but even 8% would be reasonable
Cognitive assessment conducted regularly referral for further assessment
Referral to behavioral health for depression and continued support

- **Patient Preference** Prefers oral medication over injectables
Increased risk of non-adherence with injectable options

- **Other Potential Adverse Effects** – Increased risk falls and fractures
History of osteoporosis- Has had 2 falls in the last year
Syncope- reduce lisinopril dose - BP is 110/75. Target a BP goal closer to 140/90
Reports forgetfulness with multiple daily doses
Simplify Ditropan from TID to Ditropan XL monitor for blurred vision, dizziness, etc.

- **Monitoring, Follow up, Education-** Close/frequent monitoring and shared decision making throughout
Monitor adherence and side effects – GI with metformin – weight loss
Plate method, Hyperglycemia, Self management education

- **Quality of Life/Maintenance** Community resources, senior centers and NUTRITION – weight loss - food insecurity
Referral to dietician
Link to senior programs – i.e. International Council on Active Aging - help to preserve health status/cognitive function

Pharmacologic Therapy



Simplification of Complex Insulin Regimen

Basal Insulin

- Switch basal doses from bedtime to morning
- If on premixed insulin give 70% of total daily dose in the morning
- Titrate basal based on fasting fingersticks over one week – of fasting readings - goal – 90-150 mg/dL
- Remember to individualize targets based on health status – presence of comorbidities, social support and living situation, cognitive status, functional status, ability to self-manage, presence of symptomatic hyperglycemia or hypoglycemia
- If half of the fasting finger sticks are above goal increase by increments of 2 units
- If 2 or more readings below 80mg/dL decrease by increments of 2 units

Pharmacologic Therapy



Simplification of Complex Insulin Regimen

Mealtime Insulin

- Simplification applies whether the patient is on basal insulin or not, apply guideline for basal insulin as previously reviewed
- If mealtime insulin dose is more than 10 units per dose decrease dose by 50% and add a non-insulin agent
- If mealtime insulin dose is 10 units per dose or less discontinue mealtime insulin and add a second line agent
- Aim is to discontinue insulin (titrate down) as you optimize the dose of the non-insulin agent
- Non-insulin agent (Metformin, GLP1-RA, SGLT2)
 - Consider metformin first – (if GFR is 45 mL/min or more) start at lowest dose possible and titrate upward every 2 weeks – 500mg daily and titrate every 2 weeks to maximum tolerated dose
 - If metformin not tolerated, if patient is already on metformin or if GFR is less than 45 mL/min- consider a second line agent with special attention on renal function if renally impaired

Pharmacologic Therapy



Simplification of Complex Insulin Regimen

Additional Considerations and Tips

- Do not use short acting insulin at bedtime- recipe for disaster
- Minimize the use of complicated sliding scales, guideline recommends less complex scale. If premeal glucose is:
 - More than 250 mg/dL give 2 units of short acting
 - More than 350 mg/dL give 4 units of short acting
 - If not discontinue premeal insulin altogether
- Follow-up with patient every 2 weeks to either adjust insulin and/or medication doses
- Base recommendations on glucose readings over 2 weeks performed before lunch and dinner
- Individualize - In general we want to see between 90-150 mg/dL but adjust goal based on patient overall health status
- If 50% of premeal fingersticks over 2 weeks are above goal increase dose of insulin accordingly or add another agent
- Beware of hypoglycemia - If 2 or more premeal fingersticks are below 90mg/dL reduce dose of medication

Pharmacologic Therapy



Other Considerations

- Efficacy- High with Metformin, GLP, TZDs, SUs, highest with insulin
- Hypoglycemia- SUs and insulins (Later generation SU is recommended for lower risk – glimepiride) Watch combination medication formulations
- Weight change- Metformin may offer a potential for modest wt. loss, SGLT2s & GLP1s associated with loss Gain with TZDs, SUs, Insulin
- CV Effects- GLP1s liraglutide SGLT2 (emp & Cana) show benefit in CV risk, potential for risk with saxagliptin regarding HF and increase risk with TZDs
- Cost- Low - Metformin, TZDs, SUs, Human insulin High with all others and Analogs
- Oral/SQ- - patient preference
- Renal Effects- Benefit - SGLT2 (emp, cana, dapagliflozin), GLP1-RAs- liraglutide shows benefit, rest are neutral
- Renal dose adjustments required for exenatide and lixanatide and potential risk of acute kidney injury. SGLTs- renal dose adjustments required in canagliflozin, dapagliflozin, empagliflozin and ertugliflozin.
- Additional considerations- Adverse Effects and Contraindications (Metformin - $<30\text{mL}/\text{min}$) - GI, Bone Fractures (SGLT2-cana & TZDs), GU Infections & $\uparrow\text{LDL}$ (SGLT2 and TZDs), Pancreatitis (GLP1 & DPP4), HF risk- TZDs
- Injection site reactions GLP1 and insulin

Pharmacologic Therapy



Patient Case

- Patient Consuelo- 82 y.o.- Hispanic A1C- 6.7% History of hypertension, hyperlipidemia, osteoporosis, urinary incontinence, mild to moderate dementia. Lives with her daughter and family. Her daughter is her main caregiver and oversees her mother's medications and overall care. Daughter accompanies her mother to all of her medical visits. Daughter explains that her mother has progressively functionally declined since the death of her father 2 years ago and that is the reason why she brought her to live with her here in the US. She helps her mother bath and cares for all her personal needs including dressing, hair, nails and makeup, as well as administration of all her medications including insulin. Daughter works part time, has limited English proficiency and also cares for her 3 young children ages 5, 9 and 12. Daughter's spouse works 14 hours a day in a restaurant basically provides financial support. Patient is uninsured as she came to this country 2 years ago after the death of her spouse from Colombia and is not eligible for Medicare. You are seeing the patient upon referral of primary doctor for medication management. She presents with 2 weeks worth of SMBG; 10 out of 12 readings before lunch and dinner are below 90mg/dL, rest are within range. Daughter has been measuring her sugar 5 times daily, before and after breakfast, before lunch, before dinner, and before bedtime. Her medical history reviews a history of falls, has had 4 falls in the last year that did not require hospitalization. Pertinent labs – LDL – 65 HDL – 37 BP in range 110/75 all other labs and vitals are within normal range.

- Current Medications-

Insulin glargine 20 units HS

Insulin aspart – 12 units before breakfast, lunch and dinner

Atorvastatin 40mg QD

Lisinopril 10mg QD

Alendronate 70mg once a week

Ditropan 5mg XL QD

BD-100 syringes

Pharmacologic Therapy



Patient Case

- What critical areas of concern regarding this patient case would you focus your interventions on?
 - a. Simplification of insulin regimen
 - b. Caregiver education
 - c. Risk of Falls
 - d. All of the above

- **Hypoglycemia** - Fingersticks indicating multiple readings below 90 mg/dL.
Reduce premeal insulin by 50% - premeal insulin is >10 units per dose.
Switch the dose of basal from bedtime to morning - is safer

- **Intermediate complex multiple chronic illnesses-** Mild to moderate cognitive impairment and 2+ ADLs
An A1C closer to 8.0 to 8.5% would be a reasonable target
Start metformin starting at 500mg daily GFR >45 mL/min
Goal discontinue premeal insulin while titrating metformin as tolerated every two weeks until reaching optimal dose

- **Cost - Lack of insurance** Modifications would relieve financial burden, caregiver burden, and patient distress.
Generics where possible i.e. Ditropan, DC insulin also will help, Metformin is low cost
Linking patient to resources i.e., Medicaid, 340b, GoodRx
Reduce number of finger sticks – 2 to three times a day maximum

- **Other Potential Adverse Effects** – History of falls – 4 falls in one year
Syncope- reduce lisinopril dose - BP is 110/75. Target a BP goal closer to 140/90.

- **Monitoring, Follow up, Education-** Hyperglycemia, Hypoglycemia/Close monitoring/Shared decision
Do not overwhelm the patient and her caregiver (daughter)
Include caregiver - on board, agrees and understands all of the changes.

- **Quality of Life/Maintenance** Community resources, senior centers and NUTRITION – food insecurity
Link to senior programs – i.e. International Council on Active Aging - help to preserve health status/cognitive function
Referral for further assessment of cognitive function

Seniors



In Summary

- Have the highest level of prevalence with respect to diabetes
- We are more likely to encounter this patient population throughout our professional lives
- More likely to be complex patients with existing co-morbidities, risks, and complications
- Polypharmacy is more common and are more at risk of medication related problems
- Health status, cognitive impairment, functional status, social status, nutritional support, behavioral health, monitoring for ADEs/pADEs - should be at the forefront of our attention when considering a treatment plan and target goals
- Simplification and deintensification of treatment plans to avoid hypoglycemia, patient and caregiver burden, distress and improve adherence are reasonable
- Self management education, community resources, proper nutrition, and social support are beneficial and have been shown to improve quality of life, help preserve health status, cognitive and functional abilities, and help to support caregivers and families



SESSION 4:

Motivational Interviewing and Diabetes Care

DATE:

June 12, 2020 at 1:00 – 2:15
pm EDT

Registration Link:

<https://attendee.gotowebinar.com/register/4005408015980884236>

COMING UP NEXT:

Q&A



If you would like to ask the presenter a question, please submit it through the questions box on your control panel.



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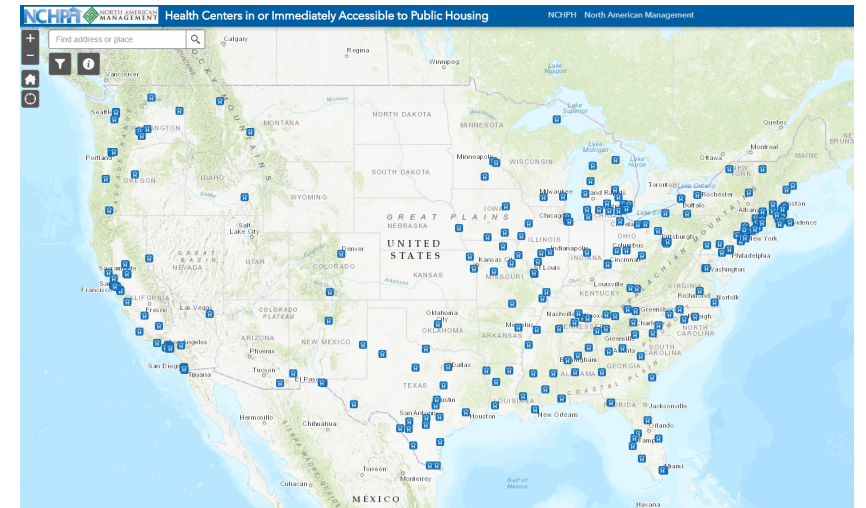
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The National Center for Health in Public Housing
Enhancing Health Care Delivery for Residents of Public Housing

A screenshot of the NCHPH website homepage. The header includes social media icons and a search bar. The navigation menu includes: HOME, ABOUT, PHPC PRIORITIES, POLICY, RESOURCE CENTER, TRAINING & TECHNICAL ASSISTANCE, UPCOMING EVENTS, CONTACT US. The main content area features a large blue background with a virus illustration and the text: "PUBLIC HOUSING PRIMARY CARE: COVID-19 BY THE NUMBERS". Below this, it states: "This publication by NCHPH provides the latest COVID-19 statistics, including updated race and ethnicity data." and includes a link: "To view publication, click here." At the bottom, it says "Welcome to The National Center for Health in Public Housing" and has a "READ MORE" button.

WHAT'S NEW FROM NCHPH

Bridging the Digital Divide:

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April 2020

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SOCIAL DETERMINANTS OF HEALTH FOR PUBLIC HOUSING RESIDENTS:

ACCESS TO HEALTHY FOOD

Using data and maps created by National Center for Health in Public Housing (NCHPH) and other national data sources, this publication is one in a series that identifies the prevalence of social factors and population health indicators that affect public housing residents. It is intended for non-clinical health center staff, decision makers, and public housing stakeholders.

April 2020

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