



aging
with
HIV

Ryan White HIV/AIDS
Program Initiative

HIV-Endurance (HIVE) Clinic

Appendix

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This intervention was implemented by Boston Medical Center in the Health Resources and Services Administration Ryan White HIV/AIDS Program Part F Special Projects of National Significance aging with HIV initiative. Boston Medical Center used the following tools, intervention materials, process maps, operational guidance, and references when implementing the intervention.

Appendix A1

Medication Regimen Complexity Index (MRCI) Calculation Tool

The Medication Regimen Complexity Index (MRCI) Calculation Tool is used to measure and quantify medication regimen complexity in people with chronic medical conditions to identify patients for medication optimization and deprescribing interventions. The MRCI is a validated 65-item tool resulting in a sum of three sub-scores: dosage forms, dosage frequency, and need for additional instructions. A higher score indicates greater complexity in the medication regimen. While no validated cutoff exists, some authors have suggested an MRCI of over 11.25 to reflect high medication regimen complexity in people with HIV.

This reference provides instructions on calculating a Medication Regimen Complexity Index score and an Electronic Data Capture tool, developed by investigators from the University of Colorado Anschutz Medical Campus.

Standard Operating Procedures

Access the Database

1. Link to database here: <https://pharmacy.cuanschutz.edu/research/MRCTool>.
 - a. Download the ZIP file to run locally on your machine.
2. Open the access database.

Guidance

1. MRCI applies to both prescribed and over-the-counter medications. All entries are to be made only based on information on the label or drug chart (at time of dispensing or discharge). No assumptions are to be made based on clinical judgement.
2. There are three sections in the scale. Complete each section before proceeding to the next. Finally, add the scores for the three sections to calculate the MRCI.
3. If the same medication (same brand and dosage form) is present more than once in a different strength (e.g., Warfarin 5mg, 3mg, 1mg as directed), it is still considered one medication.
 - a. Count as two medications if there are two separate containers that the patient has to open.

4. If a dosage is optional, choose the dosing instructions with the smallest dose/frequency (e.g., Albuterol MDI 1-2 puffs, 2-3 times daily will receive weightings for 'metered dose inhalers', 'variable dose', and 'twice daily'; but not multiple units at one time).
5. In some instances, the dosing frequency needs to be calculated (e.g., Ranitidine 1 morning and 1 nightly is 1 tablet twice daily).
6. It is possible that with specific 'use as directed' instructions, their regimen will not get a score under dosing frequency (e.g., Prednisolone 5mg as directed).
7. If there is more than one dosing frequency direction, they should be scored for all the dosing frequency directions (e.g., Albuterol MDI 2 puffs twice daily and PRN, will receive scores for 'metered dose inhaler', 'multiple units at one time.')
8. Instances where two or more directions are mutually exclusive, they need to be scored twice or more as PRN with the recommended dosing frequency, e.g., Albuterol MDI or Albuterol nebulizer twice daily PRN will receive scores for both 'metered dose inhalers and 'nebulizer' under dosage forms but needs to be scored two times for 'twice daily PRN').
9. In cases where there is no matching option, choose the closest option (e.g., 6 times daily could be considered as 'q4h.')

Instructions

1. Assign a patient ID number (e.g., the first three numbers of the MRN).
2. Select "Disease RX" from the drop-down menu for "med type" to enter only the ARV medications.
 - a. Enter the medication count "in med count."
 - i. Then, Section A, calculate dosage form.
 - ii. Dosing Frequency.
 - iii. Additional instructions.
 1. Make sure to open the Rx in the chart sidebar to see the full instructions.
 2. "Take one tablet by mouth with food" would receive a check for tablet and a check for "relation to food."
3. Press the "next type" button once all antiretroviral (ART) medications have been entered
 - a. This will start the "other medications" access tab.
4. Count the number of medications (non-ART).
 - a. Do not include vaccines or special treatments issued in the clinic (syphilis or gonorrhea treatments).
 - b. Enter this number into the "med count" box in the grey box at the top of the box
 - c. Then check the types/forms of the medications (tablets vs powders, etc.).
 - i. Only one check per form (don't need to count how many tablets, etc.).
 - ii. Make sure you capture all medication instructions in the check boxes on the MRCI calculator.
 1. Example: "Take 1 tablet by mouth daily. Start 2 days before travel, daily while there, and for 7 days after travel."
 - a. Once a day, the box gets checked.

- b. Specific instructions: "Take/use as directed."
 - c. Make sure to pay attention to "PRN" vs non-PRN instructions. They have separate boxes in the access database.
5. Once medications have all been entered, click the "generate report button and save the PDF.
6. Then make sure to "delete the record" before moving on to the next patient.

NOTES

1. Do not count storage directions towards MRCI total (e.g., store in original container, etc.).
2. Do not count diabetic **supplies** towards MRCI total.
3. Do not count vaccines towards MRCI total.
4. Do not count durable medical equipment (DME) towards MRCI total.
5. Do not count clinic-administered medications (such as STD treatments) **EXCEPT** for Cabotegravir/Rilpivirine long-acting injectable (or other injectable ART), which are captured in the ART med count.

Appendix A2

Geriatric Depression Scale Screening

The Geriatric Screening Depression Scale² is a 15-item short tool used to screen for moderate to severe depression that will require a referral to mental health care. Scores of 0-4 are considered normal, depending on age, education, and complaints; 5-8 indicate mild depression; 9-11 indicate moderate depression; and 12-15 indicate severe depression.

[Geriatric Depression Scale](#)

Appendix A3

Rowland Universal Dementia Assessment Scale (RUDAS)

The Rowland Universal Dementia Assessment Scale (RUDAS)³ is a short (10 mins) cognitive screening instrument which has been designed to minimize the effects of cultural learning and language diversity on the assessment of cognitive performance (screening for cognitive impairment and dementia). It is scored from 0 to 30 points and includes six items.

The cognitive domains assessed are:

- registration,
- visuospatial orientation,
- praxis,
- visuoconstructional drawing,
- judgement,

- memory recall, and
- language.

A score of 22 or less is consistent with cognitive impairment and should prompt referral for further evaluation by a geriatric specialist or neurologist, as appropriate.

RUDAS

Appendix A4

Physical Frailty Phenotype

The Physical Frailty Phenotype⁴ is a five-item assessment for frailty, defined as a state of increased vulnerability to stressors resulting from physiologic decline. The items assessed include weight loss, weakness, exhaustion, low activity levels, and a slow walking speed. A positive finding on zero items indicates robustness, one to two items indicate pre-frailty, and three or more items indicate frailty, which should prompt evaluation of contributing factors to develop possible interventions.

Physical Frailty Phenotype

Appendix A5

Missouri Alliance for Home Care Fall Risk Assessment (MAHC-10)

The Missouri Alliance for Home Care Fall Risk Assessment (MAHC-10)⁵ is a 10-item scale used to screen for fall risk in the home health setting. Information to complete the tool may be gathered from the medical record and, if applicable, the patient or caregiver. A score of 6 or above indicates an increased risk of falls. It should prompt evaluation by a geriatrician or other relevant clinician to identify contributing factors and strategize risk reduction measures (e.g., mobility aids, physical therapy, home safety assessments).

MAHC-10

Appendix A6

Timed Up & Go (TUG)

The [Timed Up & Go \(TUG\) tool](#) is a physical performance measure that assesses a person's mobility, balance, and walking ability. An adult who takes more than 12 seconds to complete the exercise is at high risk of falling and should be referred for further evaluation and assistance. Materials required include a stopwatch, a tape measure, and 3 meters (10 meters) of walking space.

Appendix A7

Katz Activities of Daily Living (ADL)

The Katz Activities of Daily Living (ADL) tool is used to assess functional independence in completing basic activities of daily living, including bathing, dressing, toileting, transfer, continence, and feeding. Each item is evaluated to determine whether clients can complete it independently (score of 2), with help (score of 1), or are unable to complete it (score of 0), for a maximum score of 12. This tool is used to identify domains in which clients may require further resources and support.

[Katz ADL](#)

Appendix A8

Instrumental Activities of Daily Living (IADL)

The Instrumental Activities of Daily Living (IADL) assesses independence in instrumental activities of daily living, including using the telephone, traveling, shopping, meal preparation, housework, laundry, managing medications, and handling finances. Each item is assessed as to whether patients can complete this independently (score of 2), with help (score of 1), or are unable to complete it (score of 0), for a maximum score of 16. This tool is used to identify domains in which clients may require further resources and support.

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Appendix B1

Referral Order Template

Referral Order: This referral template was integrated into our electronic health record and used by infectious disease primary care providers to place referrals to the HIVE clinic.

Order Questions:

HIVE clinic referrals are only appropriate for people living with HIV aged 50 and older who receive primary care and DO NOT have ongoing follow-up in the geriatric clinic. Does the patient meet these requirements?

- Yes. No, please discuss with the HIVE team before placing a referral.

Please indicate whether the client has any of the following geriatric syndromes.

- Polypharmacy
- Frailty
- Functional Decline
- Falls/impaired mobility
- Cognitive Impairment/Dementia
- Failure to Thrive
- Other [Specify]
-

Please specify the contact/pager number for referring PCP:

Referring provider would like to be notified if appointment cannot be scheduled: Yes/No

Interpreter Required: Yes/No

Language:

Appendix B2

Screening Form Eligibility/Eligibility Checklist

Screening Form/Eligibility Checklist: This checklist is completed for each client referred to the HIVE clinic to ensure eligibility.

Data Collection

Screening data for patients referred to the HIVE clinic will be obtained from the referral order and electronic medical record (EMR) and stored securely in a spreadsheet. Demographic and clinical data, including information on medications, comorbidities, and geriatric assessments, will be obtained from the electronic medical record for all participants seen in the HIVE clinic, either through manual chart abstraction or via the EMR reporting workbench.

Screening

	INCLUSION CRITERIA <i>(Must all be marked YES to be eligible)</i>	YES	NO	Notes
1)	Aged ≥ 50 years old			
2)	Living with HIV			
3)	At least one geriatric syndrome			

Appendix B3

Intake Script

Intake Script: This script is used to contact patients referred to a geriatric care clinic visit.

Phone Call Script: Post Referral

Your primary care provider referred you to a one-time visit to a special clinic for older adults. During this visit, you will meet with several doctors and pharmacists who specialize in the health needs of adults aged 50 years and older.

They will work with you during your visit to create a special care plan that targets your health goals and needs. Your primary care provider would still be your main doctor.

Would you be interested in doing this?

Patient is NOT interested

If you change your mind in the future, let your provider know, and they can re-refer you back to us. Thank you for your time!

Patient is interested

Great! The visit will last approximately one and a half hours. You will be given several questionnaires to assess your mobility and lifestyle. The team will also review your medications and make sure you are on the best track to meet your goals.

Our next available appointment is _____, does that work with your schedule?

Scheduling

- We offer transportation [voucher, reimbursement, ride] to and from your appointment through a rideshare service for patients who need assistance. Are you interested in using this service to get to your appointment?
 - IF YES: Confirm pick up address, time, and if a wheelchair accessible car is needed. Forward this information to the HIVE Nurse to book the rideshare.
 - IF NO: N/A.
- Would you like to use interpreter services at this visit?
 - IF YES: Take note of which language is needed and forward to RA so they can note this in the appointment notes.
 - IF NO: N/A.
- Will anyone be coming with you to this appointment?

- IF YES: Ask for name and relationship (friend/family/etc.) and forward this info to the HIVE staff member so they can note this in the appointment notes.
- IF NO: N/A.
- Are there any health concerns you have that you would like addressed at this visit?
 - IF YES: Take note and communicate to the HIVE team so they can have this information ready for the pre-clinic huddle.
 - IF NO: N/A.
- Do you have a Health Care Proxy form on file?
 - IF YES: Take note and communicate to the HIVE team so they can have this information ready for the pre-clinic huddle.
 - IF NO: Take note and discuss at visit if appropriate.

Please be sure you bring **all** your medications with you to review with a pharmacist in person. This includes all your prescription bottles, over-the-counter medications, vitamins, and herbal supplements.

Okay, you're all set for your appointment on [APPOINTMENT DATE] at [APPOINTMENT TIME].

We will give a reminder call before your appointment. Thanks so much and have a great day!

Appendix B4

Intake Note Template

Intake Note Template: This electronic health record note template is used to document key elements of the HIVE intake call.

HIVE (HIV-Endurance) Clinic Intake Call

Called patient to discuss primary care provider (PCP) referral to HIVE clinic.

Interpreter Used: [Yes/No, Language:].

Introduced self and explained that [referring provider] had referred the patient to a new integrated geriatrics-ID clinic in the Center for Infectious Disease (CID) clinic. Explained that our focus is to create a unique care plan to address the needs of people aged 50 and older receiving primary care in CID.

Confirmed to the patient that this visit does not mean we are changing their provider, nor are we replacing their PCP; we are only assisting their PCP in making recommendations to improve health-related quality of life.

Explained that the visit is 1.5 hours long and will include visits with aging specialists, infectious disease specialists, medical care managers, and pharmacy.

Patient [is/is not] in agreement to attend the clinic session.

Transportation:

Requires transportation to clinic appointment: [Yes/No].

[Does/Does Not] need a wheelchair accessible car.

[CONFIRM ADDRESS].

Interpreter Service:

Requires Interpreter: [Yes/No, Language:].

Accompanying Person(s):

Care Priorities: Patient reports [document care priorities here].

Health Care Proxy: Patient [does/does not] have a healthcare proxy.

Please have the patient bring all medication bottles, vitamins, and supplements to the visit on [Date] at [Time]. Will provide a reminder call the day prior.

Appendix B5

Reminder Phone Call Script

Reminder Phone Call Script: This script is used to remind patients of their geriatric care clinic visit.

Phone Call Script: Reminder

Contact Made

Hello **[PATIENT'S NAME]**, this is **[YOUR NAME]** calling from **[INSTITUTION]**. Is this **[PATIENT NAME]**?

I'm calling to remind you of your appointment at the [clinic name] tomorrow at XX:XX PM at [location].

[Confirm that transport assistance has been booked if the patient requested this service during their intake call. Will need Pickup time, location, and wheelchair accessibility info.]

Please remember to bring all your medications with you to this appointment. This includes all of your prescription bottles, over-the-counter medications, vitamins, and any herbal supplements.

Feel free to call me back at [HIVE clinic number] if you have any questions.

Thanks so much and have a great day!

Voicemail

Hi **[PATIENT NAME]**, this is **[YOUR NAME]** calling from [institution].

I'm calling to remind you of your appointment tomorrow at XX:XX PM in [clinic location].

For this appointment, please bring all your medications, including any prescriptions, over-the-counter medications, vitamins, and supplements.

Feel free to call me back at [clinic number] if you have any questions or concerns about your appointment or if you need help getting a ride to the clinic.

Thanks so much and have a great day!

Appendix B6

HIVE Visit Note Template - Geriatrician

HIVE NEW Visit Note Template - Geriatrician: The electronic health record note template is used to document the findings of the geriatric clinic visit, including geriatric screenings and assessments, as well as the individualized care plan.

ID / Geriatrics CONSULTATION

PROGRESS NOTE

Language: [Enter Language of Encounter Here]

Interpreter: [Enter Interpreter ID and language, if used]

Subjective:

Patient seen today for a comprehensive geriatric assessment

Reason for consult:

Patient is accompanied by:

Chief complaint by pt/caregiver:

Chart review reveals: [List details of chart review]

Social History: [List social history]

- **Mind:**

- Memory: [Review subjective memory issues].
- Family History: [Review any family history of memory issues].
- Meds [Review any medications that are prescribed for memory or may affect memory].
- Mood: [Review subjective mood issues].
- Sleep: [Review sleep Habits, issues, concerns].

- **Mobility:**

- Falls/Gait/Balance: [Review self-report of falls or issues with gait/balance].
- Function: [Review ADLS and IADLS].

- **Multimorbidity:**

- Chronic Medical Issues: [Review comorbidities].
- Bowels: [Review bowel habits, e.g., constipation, frequency].
- Bladder: [Review bladder habits, e.g., incontinence, frequency].
- Appetite/Weight: [Review oral intake, weight trends].
- Vision/Hearing: [Review subjective vision and hearing issues].
- Dental/Chewing/Swallowing: [Review dental issues].

- **Medications:**

- System/Adherence [Review system for taking medications, any adherence concerns].

- **What Matters:**

- Goals: [Review Life and Health Goals].
- Healthcare Proxy: [Review if patient has healthcare proxy documented].
- Advance Care Planning: [Review if patient has advance directives].

- **Resources:** [Review any community resources the patient has].

Geriatrics Assessments: [Summarize Results from the Following assessments]

- Mind: Rowland Universal Dementia Assessment Scale (RUDAS), PHQ-9, GAD-7.
- Mobility: Missouri Alliance for Home Care Fall Risk Assessment (MAHC-10), Physical Frailty Phenotype, Timed Up and Go, Falls Assessment, ADLS/IADLS.

Objective:

Vitals: [List Vital Signs]

Weights: [List Last three weights]

Physical Exam:

[Document Physical Examination]

Labs/Studies

[Document pertinent lab results or imaging findings]

Assessment and Plan:

[Detail Assessment and Plan]

Conditions **screened** or **assessed FOR** at the visit

Conditions that received treatment/diagnosis **FOR** at the visit

Conditions that received referrals **TO** other specialists at the visit

Medications

[List Medications]

[Provider Name and Contact Details]

Appendix B7

HIVE Visit Note Template – Geriatric Nurse

HIVE NEW Visit Note Template – Geriatric Nurse: This electronic health record note template is used to document nursing assessments of geriatric patients, which include an evaluation of home resources and equipment.

Biographic Information

Language:

Interpreter:

Location of birth:

Childhood/siblings (alive or deceased):

Education:

Occupation:

Retirement:

Marital status:

Social supports:

Children/grandchildren/caregiver:

Religious beliefs:

Living Situation

Type of housing (house, apartment, condo):

Home safety: smoke detectors:

Tub mat: tub chair: grab bars:

Bedside commode: urinal: raised toilet seat:

Incontinence (bowel and/or bladder):

Personal emergency response system (PERS, e.g., Lifeline):

Medical ID:

Hospital bed:

Laundry: (in home/basement/none):

Guns/weapons:

Stairs: number of stairs from sidewalk to front door? With railings (If pt uses stairs to bedroom/basement):

Pets:

Income:

Community Services (e.g., Home Health Aide, Homemaker, Adult Day Health, Food Services)

Elder Agency/Case Worker information:

Adult Day Program:

Visiting Nurse Association (VNA) agency:

Medications:

General Function (what do you do all day)

Activities:

Drive (ever or still):

Knows 911 (line vs cell vs both):

Nutrition

How is your appetite:

Do you eat at least two meals daily (which ones):

Do you eat each of the food groups daily:

Are you on a specific diet:

Dental Issues

Dentition (do you have your own teeth vs dentures):

Last dental exam was:

Last dental exam was done at:

Vision and Hearing

Any vision problems:

Last eye exam was:

Last eye exam was done at:

Any hearing problems:

Last hearing evaluation was:

Last hearing evaluation was done at:

Substance Use

Smoking history (cigarette, pipe, cigar, chew):

Alcohol history:

Drug history:

Nursing recommendation: [Enter recommendations]

Appendix B8

HIVE Visit Note Template – Pharmacist Note

Subjective:

Patient ID:

Medication Reconciliation

- Morning medications:
- Evening medications:
- Other medications:
- Topical medications:
- As-needed medications:
- Patient reports/denies any adverse drug reaction or problems possibly related to any medications:

Pharmacy Information

- Current pharmacy provider:
- Problems with medication procurement:
- Special pharmacy services:

Objective

- Current outpatient medications:
- Polypharmacy calculation:
- Total number of medications in the patient's regimen:
- Number of medications for HIV:
- Medication regimen complexity index (MRCI) sub score for HIV:
- Number of non-HIV medications:
- MRCI subs core for non-HIV med:
- MRCI total score:

Assessment/Plan

Problem List Items Addressed This Visit

- Other:

- Polypharmacy:
- Current assessment & plan:
- Current assessment:
- Plan:
 - Recommendations:
 - Continue:
 - Sent refill requests to:
 - Follow-up with clinic pharmacist:

Appendix B9

HIVE Established Visit Note Template – ID Clinician

HIVE ESTABLISHED Visit Note Template – ID Clinician: This electronic health record (note template) is used to document the 1-month telemedicine follow-up visit, including progress on individualized care plan action items.

HIVE (HIVE-Endurance) Clinic 1 Month Follow-up: In-Person

[Patient Name] presents today for follow-up on the HIVE clinic visit

Interpreter Used: [Yes/No, Language:]

Patient reports [having questions or concerns post-HIVE // no questions or concerns post-HIVE]

Patient reports [new issues after HIVE clinic // no new issues after HIVE clinic]

- **Medication Reconciliation Follow-up:** [Review medication changes since HIVE clinic].
- Referrals Follow-up [Review HIVE Referral Progress and Outcomes].

Assessment and Plan: [Summarize Assessment and Plan]

HIVE Experience

Patient reported that they [were dissatisfied // satisfied] with their HIVE Clinic experience
 Patient expressed the following feedback for the clinic: [summarize feedback]

Will communicate the above to PCP

All questions answered. [Will // Will not] graduate patient from HIVE clinic follow-up

Appendix B10

Advanced Care Planning Video

The Advance Care Planning video provides actions patients can take to ensure they receive their preferred medical treatment, even if they're unable to advocate for themselves.

Resources such as advance directives and healthcare proxies are discussed in this video.

Advanced Care Planning (English): <https://www.youtube.com/watch?v=kOXag3i56dw>

Appendix B11

HIVE Geriatric Assessment Video

The Geriatric Assessment video explains what patients can expect during their first visit to the HIVE clinic.

Geriatric Assessment (English):

<https://www.youtube.com/watch?v=F8vWLup64Og&list=PLaG50ui9zfjug3eNnMV4kD1E5yyHAEnVW&index=31>

Appendix C1

Block Diagrams

Pre-Visit

Referrals received from patients' primary care providers	Patients screened for eligibility	Eligible patients contacted and scheduled
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HIVE Visit

Patient checks in for HIVE visit	Intake with infectious disease provider	A pharmacist encounters a patient to assess the medication regimen	Geriatrics team encounter for comprehensive assessment	Individualized care plan development
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Post-Visit

The HIVE team completes the care plan based on the care plan items	HIVE medical provider completes 1 month of telemedicine calls	2-3 months post-HIVE visit, the patient meets with primary care provider to complete coordinated care
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Appendix C2

Task Diagram

Check-In and Orientation	Infectious Disease (ID) Encounter	Pharmacist Encounter	Clinical Discussion	Geriatric Encounter (Part 1)	Geriatric Encounter (Part 2)	Check-Out	Post-HIVE
Patient arrives at front desk	ID provider enters exam room and greets patient	Pharmacist enters exam room	Pharmacist shares findings from visit with the geriatric and ID providers.	Geriatrician and nurse enter exam room and greet patient. Orient patient to assessments	Geriatrician completes healthcare proxy with patient and documents in EMR <i>(where applicable)</i>	Patient given documentation of referrals (if applicable)	Geriatrician documents visit in EMR
Reception requests patient's name and date of birth	If interpreter required, phone interpreter called (if in person interpreter is unavailable)	Pharmacist preforms medication reconciliation with patient	Geriatrician + ID review screening and assessment results. Strategize possible referrals	Geriatric team asks about and educates patient on healthcare proxy	Geriatric team explains care plan to patient and responds to any questions	Patient escorted to waiting room of clinic	ID provider updates primary care provider (PCP) via notes in EMR
Reception confirms insurance information, collects co-pays (if applicable) and completes check-in process	ID provider provides preliminary explanation of clinic flow and offers to answer any questions	Pharmacist assesses medication adherence	Providers develop and document care plan in EMR	Nurse completes appropriate screenings: GAD-7 ADL IADL PHQ-9 (if + PHQ-4) Loneliness Scale	Referrals reviewed with patient and geriatric team answers any questions regarding referrals	Patient exits clinic, uses provided transportation <i>(if requested)</i>	Pharmacist documents visit and coordinates with PCP on de-prescribing medications and updates in EMR <i>(if applicable)</i>
Reception checks in patient and asks patient to be seated in waiting area	ID provider exits exam room and notifies pharmacist or geriatric team <i>(depending on availability)</i> patient is ready	Pharmacist answers questions regarding medications	Providers orders referrals as needed	Geriatrician completes appropriate assessments based on patient priority: Frailty Scale RUDAS MoCA VACS	Geriatric team exits exam room and returns to charting room		HIVE nurse will support follow up and care plan
Reception notifies HIVE team of patient arrival	<i>OPTIONAL:</i> Show HIVE video	Pharmacist confirms and updates		Geriatrician conducts patient			

		preferred pharmacy		physical exam			
Patient roomed by clinic staff	Schedule patient for visit with their HIV PCP 2-3 months out	Pharmacist discusses possible changes (<i>if any</i>) with patient and records recommended changes to be confirmed with PCP		Geriatric team exits exam room and returns to charting room for additional clinical discussion based on the above results			
HIVE nurse arranges in person interpretation services if required and available		Pharmacist exits exam room					

Appendix D

Operational Guidance

Boston Medical Center created the operational guidance for the intervention. You can contact Archana Asundi, Archana.Asundi@bmc.org, with questions about the intervention.

The HIVE clinic can be held within the Infectious Disease (ID) clinic, HIV clinic, primary care clinic, or geriatric clinic. The HIV clinic is held monthly and is a multidisciplinary clinic involving members of the HIVE team, which includes an ID clinician, geriatrician, geriatric nurse, pharmacist, and medical case manager (MCM). One staff member (either the geriatric nurse or MCM) is designated as the HIVE coordinator and will be responsible for outreach and scheduling. The clinic session runs from 1:00 pm to 5:00 pm, and two new HIVE visits are held during this specialized clinic, each lasting 90 minutes. In the start-up phase, a single visit was conducted during the HIVE clinic sessions but eventually increased to two new HIVE visits per session. The addition of twice-monthly clinics, if additional bandwidth is needed, would allow for four patients to be seen per month.

Referral to HIVE Geriatric Clinic Visit

1. The infectious disease – primary care provider (ID-PCP) refers clients 50 years and older with at least one geriatric syndrome. These criteria were selected to identify older persons with HIV who may benefit from a comprehensive geriatric assessment to enhance health-related quality of life. The ID-PCP does not complete any specific screening but rather uses their clinical experience with the patient and judgment to determine whether referral is warranted.
 - a. Geriatric syndromes are health conditions affecting older persons that may have multiple causes and result in a variety of signs and symptoms. These include frailty, cognitive impairment/dementia, polypharmacy, urinary incontinence, and falls/mobility issues.
2. The primary care provider enters the referral using the EMR order (**Appendix B1**)
 - a. All HIVE staff receives referral and reviews the chart for eligibility criteria (**Appendix B2**) and enters the patient into the tracking log.
 - b. If there is any ambiguity as to eligibility criteria, HIVE staff confers with the HIVE ID clinician.
3. If determined ineligible, referral is declined in EMR, and the referring provider is automatically notified in EMR and may follow up with the HIVE team.
4. If determined eligible, HIVE staff may reach out to schedule the appointment.

Pre-Visit Patient Outreach and Scheduling

Intake Phone Call

1. HIVE staff coordinator can conduct a telephone intake call using the intake call script (**Appendix B3**).
 - a. If the patient declines the HIVE appointment or cannot be reached after three attempts, the referral is declined in EMR, and the referring provider should be notified through EMR.
 - b. If the client accepts the HIVE visit, HIVE staff follow the intake call script further to assess and address the following needs:
 - i. Transportation to the appointment.
 - ii. Interpreter availability.
 - iii. Accompaniment of caregiver or family member at the visit.
 - iv. Primary health concerns that the patient would like addressed at the visit.
 - v. Previous healthcare proxy documentation.
2. HIVE staff coordinator explains that a pharmacist will meet with the client during the visit to review their medications and asks the patient to bring their medications to the visit.
3. HIVE staff coordinator documents intake calls as a “Telephone Note” in EMR using note template (**Appendix B4**).
 - a. The note is routed to the HIVE team.
4. A HIVE staff member schedules patients for a HIVE visit in the EMR using blocked monthly visit slots.

Reminder Phone Call

1. One day before the visit, the HIVE coordinator conducts a reminder phone call using the script (**Appendix B5**).
2. The client is reminded to bring all medication bottles to the visit.
3. If the client requested transportation, a rideshare is scheduled for pick-up to allow for the anticipated clinic arrival at least 10 minutes ahead of the scheduled appointment.
4. If the client requires an interpreter, an in-person interpreter is requested for the visit.

Pre-Visit Preparation

1. A HIV staff member [receptionist, medical case manager, nurse] sends a reminder EMR message to the HIVE clinic team 1 week before the scheduled HIVE clinic visit.
2. Pharmacist calculates medication regimen complexity index (MRCI)¹ (**Appendix A1**) and enters results into EMR.
3. Pharmacist replies to reminder message with MRCI score and summary of medication optimization opportunities.
4. Geriatric nurse completes pre-visit chart review for the following items:
 - a. Demographic and insurance information to have in mind, and resources that will be available to them.
 - b. Review the most recent clinic visit notes for ongoing conditions that could require referral to a community resource.

- c. Printing of any useful forms such as food bank applications, medical orders for life-sustaining therapy, and healthcare proxy forms, local adult day health information, etc.

Client Intake, Rooming, and Orientation

1. Client is welcomed to the clinic, registered by front desk staff, and roomed by medical assistant.
2. It is optional to have HIVE clinic rooms equipped with mobility accommodations.
3. It is optimal for the HIV staff coordinator to ensure that an in-person interpreter is in the room, or a telephonic interpreter is available. HIV staff member asks client about need for interpretation during the intake.
4. ID clinician performs orientation, including:
 - a. Introduction of self to client and accompanying person or caregiver.
 - b. Outline of visit “agenda”
 1. “Welcome to the HIVE clinic. This is a special clinic, and the visit will be longer than your regular clinic visits. The purpose of this visit is to spend more time focusing on *you* and your health priorities. If you get tired or need a refreshment during the visit, please let us know. The visit will start with a meeting with a pharmacist, and then you will meet two aging specialists. After that, all of us will meet to discuss the next steps.”
 - c. Identifying priority issues for discussion.
 1. “Before we begin, is there anything specific you would like us to focus on during this visit?”

Medication Reconciliation and Optimization

1. ID clinician provides a warm handoff to the pharmacist, who enters the room and introduces themselves:
 - a. “I am the pharmacist; my role will be to go through your medications one-by-one and discuss them with you...”
2. Pharmacist performs “brown bag” medication reconciliation, including the following steps:
 - a. Obtain a printout of the current medication list from EMR.
 - b. Reconcile the EMR medication list with the medication bottles brought by the patient, updating the EMR list as appropriate.
 - c. Identify discrepancies: either non-adherence/intermittent adherence OR undocumented medications or supplements.
 - d. Review and counsel about the indication for each medication and any specific administration instructions (e.g., with food).
 - e. Identification of deprescribing opportunities.
 - f. Assess medication adherence and address medication-related challenges and barriers.
 - g. Address patient concerns and questions about medications.

- h. Identification of areas for medication optimization: Adverse drug reactions, therapy duplications, inappropriate medications, and opportunities to reduce medication regimen complexity.
 - i. Adjusts medications that are within the scope of practice.
- 3. Pharmacist develops and meets with the HIVE team to discuss a collaborative medication care plan between the ID clinician and the geriatrician.
- 4. Arrangement of separate pharmacy follow-up, if necessary, for example, if the patient requires additional time for education about medication administration or a separate encounter to arrange compliance packaging (i.e., medication packaging in organized and labeled blister packs to enhance adherence). This is arranged directly by the pharmacist.
- 5. Pharmacist completes EMR documentation of encounter in a separate pharmacy note **(Appendix B8)**.

Geriatric Assessment

1. The geriatrician and the Geriatric Nurse enter the clinic room with the patient and introduce themselves and their roles.
 - a. "I am a doctor, and this is a nurse who is a specialist in aging. We are going to spend some time talking to you about your daily life and environment. We will also do some exercises. Let us know if you have questions."
2. Geriatric nurse completes evaluation of the following items outlined in **Appendix B7**:
 - a. Demographics, including language, location of birth.
 - b. Background including education, occupation, retirement, marital status, social supports, and religious beliefs.
 - c. Living situation, including type of housing, home safety measures, incontinence, presence of lifeline, medical ID bracelet, hospital bed, laundry, guns/weapons, access (e.g., stairs, elevator), pets, and income.
 - d. Existing community services: home health aide, Visiting Nurse Association, elder agencies, adult day health program.
 - e. General Function and daily activities.
 - f. Transportation (particularly driving).
 - g. Knowledge of how to contact emergency services (e.g., 911).
 - h. Nutrition.
 - i. Dentition.
 - j. Vision and hearing problems.
 - k. Substance use.
3. Geriatrician completes Comprehensive Geriatric Assessment **(Appendix B6)**.
 - a. Assessment is generally tailored towards the reason for referral and patient needs/priorities but will generally organize around the 5Ms model of describing geriatric care (excepting medication, as this is reviewed in a pharmacy visit).
 - b. Geriatrician completes ALL below assessments unless patient declines or is fatigued:

Domain	Elements	Specific Assessments
Mind	Memory Mood Sleep Social Support	Rowland Universal Dementia Assessment Scale (RUDAS) (Appendix A3) Geriatric Depression Scale (GDS) (Appendix A2)
Mobility	Falls/Gait/Balance Function Frailty Assistive Devices Transportation	Missouri Alliance for Home Care Fall Risk Assessment Tool (MAHC-10) (Appendix A5) Timed Up & Go (Appendix A6) Activities of Daily Living (Appendix A7) Instrumental Activities of Daily Living (Appendix A8) Physical Frailty Phenotype (Appendix A4)
Multi-Morbidity	Chronic Medical Issues Bowels Bladder Appetite/Weight Vision/Hearing Dental/Chewing/Swallowing	
Matters Most	Goals Healthcare Proxy Advanced Care Planning	State-specific Health Care Proxy and Medical Orders for Life-Sustaining Treatment (MOLST) Forms

Individualized Care Plan Development

1. Geriatrician and geriatric nurse exit the exam room to meet and discuss findings with ID clinician in the HIVE team meeting.
 - a. Geriatrician leads free-form discussion by reviewing findings from geriatric assessment, including results of assessments done and other care priorities identified from the encounter.
 - i. Geriatric RN reviews findings from her assessment.
2. HIVE team collaboratively develops an individualized care plan in accordance with findings from the pharmacist, geriatrician, and geriatric nurse.
3. ID clinician summarizes action items and who is delegated responsibility clearly; if remaining items still need to be discussed with the patient, these are identified.
4. Geriatrician and geriatric nurse document Individualized care plan in EMR.
5. Geriatrician, geriatric nurse, and ID clinician return to the room.
6. ID clinician summarizes findings and plan with patient.
 - a. "Now that you have met with the pharmacist and the aging specialists, my purpose is to make sure that information is transmitted back to your PCP. It seems that your major health concern is XXX, and we discussed some things that may help address this, the following..."
7. HIVE team addresses any remaining issues or questions with the patient and the accompanying person.
8. ID clinician explains the purpose of a 1-month telemedicine visit to check in for updates on the care plan from the patient's perspective.

- a. "If it is ok with you, we will plan to have a telemedicine visit in 1 month so I can check and see how you are doing."
9. If the patient agrees with the care plan, the ID clinician schedules 1 1-month telemedicine visit and ensures there is a scheduled PCP follow-up within 3 months. This is done with front desk staff – reminders are printed and then handed to the patient.
10. HIVE nurse remains with the patient to complete any required paperwork necessary for the execution plan (e.g., referral forms, health care proxy). HIVE nurse will reiterate that there will be a 1-month telemedicine check with the HIVE ID clinician for any questions or concerns and will share their contact information if the patient wants to reach out directly.
11. HIVE staff coordinator or medical case manager schedules rideshare transportation home if requested.
12. Patient is offered an escort to transportation by HIVE staff coordinator or medical case manager.

Post Visit Care Coordination and Follow-Up

Care Coordination: Delegating, Communicating, and Tracking

1. Individualized care plan EMR and pharmacy notes are routed to the PCP in EMR once complete.
2. HIVE ID clinician creates a task list based on the EMR note of the individualized care plan
3. Each task will have a delegate to complete the task.
 - a. Examples of tasks and delegates include:
 - i. Obtaining approval from PCP about medication changes (ID clinician).
 - ii. VNA Referral (Geriatric RN).
4. Task progress and completion are discussed during a monthly virtual HIVE team meeting the week following the HIVE clinic sessions.
 - a. During this meeting, the client tracking tool is shared, and the patients seen in HIVE are discussed individually.
 - b. Each incomplete action item is brought up, and the responsible party is asked to share and update.
 - c. The plan is re-strategized if needed, and the timeline is adjusted.
 - d. Updates are reflected in the spreadsheet.
5. Additional communication about care coordination with the ID-PCP is achieved through the EMR messaging feature. This is initiated and led by the ID clinician.

Telemedicine Follow-up Visit

The purpose of the visit is to ensure that action items developed in the individualized care plan are completed or in progress and to ensure that the patient has received or is in the process of receiving services.

- All HIVE patients are scheduled for one month telemedicine follow-up with ID clinician, except for patients that already have an in-person visit with the same ID clinician in that time frame.

- HIVE telemedicine visits occur during the monthly HIVE clinic session while the pharmacist/geriatric team is completing their respective assessments for the new HIVE visit.
- ID clinician initiates video telemedicine visits at the time of appointment, with a telephone visit if video capabilities are not available.
 - If the patient cannot be reached after three attempts from the ID clinician, an EMR message is sent to the ID front desk to continue outreach attempts for rescheduling.
- ID clinician introduces self and reminds patient of the HIVE appointment one month ago, explains the purpose of the visit to discuss the care plan items that were summarized to the patient at the end of the visit.

“I am the doctor you met during that long appointment last month. At the end of that appointment, we discussed XYZ. I am going to go through the item; please share what you have heard of progress on this item, and I will share any developments on my end.”
- ID Clinician reviews elements of the individualized care plan to ensure referrals were made and appointments were scheduled.
- If any elements of the care plan were not accomplished, the ID clinician will reach out to the task delegate for a status update directly; this may occur within the team meeting or separately as appropriate.
- ID clinician documents telemedicine notes in EMR, which are automatically routed to PCP upon completion (**Appendix B9**).

HIVE Graduation

- HIVE patients are actively followed and discussed in monthly virtual team meetings until the following criteria are all met: all care items are completed.
- Following that, the EMR message was sent to the PCP by the ID clinician, summarizing the outcome and any remaining follow-up items with the option to re-engage the HIVE team as needed.