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Abstract

Background: A growing number of older adults live in senior affordable housing, many with limited support systems and representing underserved or disadvantaged populations. Staff in these buildings are in a unique position to identify and address the healthcare and biopsychosocial needs of their residents and link them to services and supports.

Methods: Staff in four affordable housing sites received training on the 4Ms approach to caring for older adults and conducting resident health assessments. They learned to collect comprehensive health information using a 4Ms Resident Health Risk Assessment (4Ms-RHRA) and results are entered into a customized electronic database. Embedded flags identify potential risk factors and initiate a follow-up process for documenting interventions and tracking referrals to healthcare and supportive services.

Results: Eighty-one percent of the 221 4Ms-RHRAs completed with residents (63% female, mean age 71.1 years, 73% live alone) were flagged for at least one concern (Mean = 2.2 flags). Items addressing What Matters were most frequently flagged: resident's "most important health issue" (55%) and Advance Care Planning (ACP: 48%). In response, staff provided Advance Directive forms and Five Wishes pamphlets to interested residents and reminded residents to review ACP documents annually.

This article is part of a special collection edited by Nina Tumosa, titled *Geriatrics Workforce Enhancement Program Compendium*. Once complete, you can explore the rest of the collection here: https://agsjournals.onlinelibrary.wiley.com/hub/journal/15325415/special-collections.

Conclusion: Training affordable housing staff, precepting faculty, and students to conduct health assessments based on the 4Ms framework and longitudinally track interventions related to resident-centered needs and manage long-term service and supports is a first step in creating an interprofessional workforce capable of addressing the complex needs of older individuals in affordable housing.

KEYWORDS

4Ms framework, health assessment, interprofessional, senior affordable housing

INTRODUCTION

More than one quarter of older adults living in the community live alone with the proportion increasing with age. Growing income inequality among older individuals, increasing cost burdens, and widening racial and ethnic disparities impact housing security. For those on limited incomes, with fewer support systems representing underserved or disadvantaged populations and having multiple chronic conditions, federally funded Housing and Urban Development (HUD) or other affordable senior housing is an important option as the cost of health care and housing continues to rise.[1,2]

In the estimated 5.1 million publicly subsidized housing units in the United States more than 40% are occupied by residents 62 years and older, with annual household incomes just over $17,000; of these, more than 100,000 are Section 202 units where very low-income older adults live independently but receive support services.[3] Approximately 68% of individuals aged 65 and older residing in affordable housing are Medicare and Medicaid recipients and more than half are diagnosed with multiple chronic conditions and/or disability and are higher utilizers of healthcare services, including home health care, primary care, and hospital emergency room care.[1,4,5] They are impacted by social determinants of health that limit their access to health care, care coordination, supportive services, or may have been affected by trauma.[6,7]

Staff in senior affordable housing are uniquely positioned to identify residents' needs using voluntary health assessments. Under fair housing laws, residents can be assessed if the assessment is not used to deny admission or for purposes of eviction.[8,9] Assessments should be evidence-based, gauge health status, functional and other limitations, and be used to identify needed resources or services. Based on the 4Ms framework, assessments can address "what matters" for each individual and document contextual factors in the local community, including access to hospitals, medical and behavioral health care, healthy food, transportation, supportive services, and safe places to exercise, live, and work.

Key points

- Implementing 4Ms-focused health assessments in affordable housing is replicable.
- Monitoring residents' health and healthcare needs enables provision of appropriate services and supports.

Why does this paper matter?

Utilizing the 4Ms framework for health assessments in affordable housing supports interprofessional training and workforce development.

To identify and act upon the residents' needs, building staff require education and training about the aging process, age-related health, cognitive and functional concerns, mental health, and addiction issues. By acquiring the skills to assess residents' needs and develop person-centered plans of care, they learn to link residents to needed services and supports, and knowledge of community-based resources will allow them to respond to residents' needs and monitor recommendations and changes over time.

This article describes the creation of a structure and process for assessing residents in senior affordable housing using a voluntary Resident Health Risk Assessment (RHRA) based on the 4Ms framework (4Ms-RHRA). The project is funded by the DHHS-HRSA Geriatrics Workforce Enhancement Program (GWEP). It is a collaboration between the New Jersey Geriatrics Workforce Enhancement Program (NJGWEP), the New Jersey Housing and Mortgage Finance Agency (NJHMFA), two community-based partners, two academic partners, and four affordable housing sites in southern New Jersey. The approach builds foundational

knowledge by educating staff, precepting faculty, and health professions students to conduct voluntary health assessments of building residents by providing ongoing team-based training. The structure and process guides practice, recommendations for intervention, and monitoring within the 4Ms framework. This approach addresses challenges related to monitoring outcomes and impact encountered in other interventional studies[6,7,10–16] and is flexible enough to be replicated in other affordable housing settings with different staffing configurations and changes in workflow.

METHODS

Site selection

The NJGWEP developed the assessment in 2017 and modified it in 2019 to include the 4Ms framework. Initial implementation was in a 302-unit privately owned, nonprofit affordable housing high rise in Camden, New Jersey where basic social service assessments were completed as part of a previous project. Building staff comprised of social workers and bilingual Community Health Workers (CHWs) identified residents who were high utilizers of health services and recorded data in an electronic database called TrackVia.[7] Their experience providing community-based rotations for health professions students of multiple disciplines, collecting data for grant reporting, and supporting aging in place for its residents prepared them to provide critical feedback on project replication and mentorship to faculty and staff at new project sites. Three additional affordable housing sites serving underserved, disadvantaged populations in southern New Jersey were selected for replication of the 4Ms-RHRA. These buildings have different resources and capabilities (e.g., WiFi access for teleconferencing), staff configurations (e.g., service coordinators vs. community managers), and are in communities with varied social determinants of health. A 246-unit high rise that provides HUD Section 202 housing staffed by a service coordinator and social worker and two smaller low-rise buildings (a 100-unit tax credit building with a community manager and a 73-unit HUD Section 202 building with a service coordinator and part-time wellness nurse) were identified in collaboration with NJHMFA. In addition to staff training on the 4Ms and geriatric evidence-based practices, three of the sites train health professions students to conduct voluntary 4Ms-RHRAs and interprofessional case-based reviews with faculty from the NJGWEP and two academic partners. At one of the four sites, 4Ms-RHRAs are conducted by building staff only.

Interprofessional education

All building staff receive initial training on the Aging Process, Dementia, Depression, Delirium, Medications, and Polypharmacy as a foundation for caring for older adults. To prepare staff, faculty, and students for 4Ms assessment, orientation and training materials were created and are delivered via a hybrid learning approach (e.g., in-person, virtual, and self-directed). The orientation packet includes a review of the 4Ms Framework (What Matters, Medication, Mentation, and Mobility), validated screening tools, and training videos depicting how to administer the evidence-based screening tools (i.e., Mini-Cog, Beers Criteria, Activities of Daily Living [ADLs], Instrumental Activities of Daily Living [IADLs], Patient Health Questionnaire [PHQ-2], Timed Up and Go [TUG], and the STEADI toolkit for falls risk assessment).[17–25] NJGWEP provides academic faculty from the Rowan-Virtua School of Osteopathic Medicine, Rutgers School of Nursing-Camden, and Stockton University to mentor site staff, precept health professions students, and participate in interprofessional case-based reviews and project evaluation. Virtual quarterly stakeholder meetings with the NJGWEP team, affordable housing, and academic partners provide a forum for sharing experiences, identifying training needs, problem-solving, and addressing challenges encountered as the project progresses.

Process, workflow, and data collection

Affordable housing residents are recruited to volunteer for a 4Ms-RHRA through staff outreach, discussion groups, and flyers. A formal consent process was not required by the Institutional Review Board (IRB) since this is an education and training program to improve quality of care for building residents where affordable housing staff conduct the assessments as part of their daily work. Participation is not required to remain a building resident and residents can refuse to participate at any time. The residents' agreement to participate is reconfirmed with every assessment. Building staff schedule assessment times and pairs of trained staff and students conduct assessments in the resident's apartment or in a designated private space. 4Ms-RHRAs are conducted annually and in response to a health or related emergency or a care transition. Most sites complete individual 4Ms-RHRAs in more than one sitting because of time constraints and to avoid resident fatigue. For ease of use and reassurance that data will not be lost, staff collect the data on paper and maintain records in a secured area. At regular intervals, designated staff enter the 4Ms-RHRA

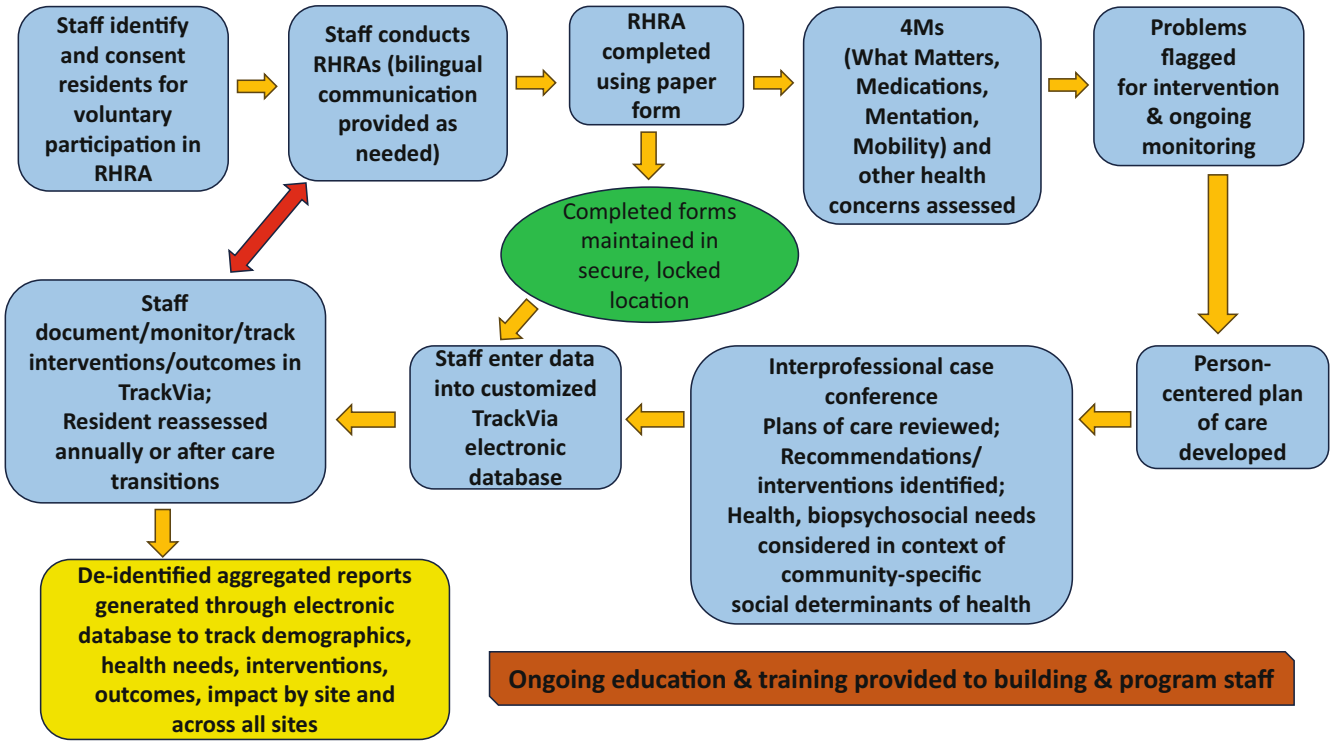

FIGURE 1 4Ms resident health risk assessment (4Ms-RHRA) workflow.

information into the password-protected TrackVia database to enable longitudinal monitoring of referrals at each site and allow for aggregated data reports across sites. To call attention to areas of need, "flags" were added as forced response items in TrackVia that must be answered for each section before continuing data entry. If an issue is flagged, the system auto-populates another text field to record resolutions or suggested interventions for each flag (Figure 1).

4Ms-resident health risk assessment (4Ms-RHRA)

The 4Ms-RHRA utilizes the 4Ms framework to evaluate residents' health and biopsychosocial needs. In addition to collecting demographics and medical histories, the assessment includes a What Matters Most question, details on Advance Directive (AD) documents, a grid to identify high risk medications with prompts to ask if the resident knows what condition the medication is for and if they are taking it as prescribed, two mentation screening tools (Mini-Cog for cognition and PHQ-2/PHQ-9 for depression),[19,23] and a falls risk assessment (TUG)[24] along with the Katz Index of Independence in ADLs[21] and Lawton-Brody IADLs[22] to assess mobility and function. Three validated tools assess social determinants of health: Social Isolation scale,[26] Three-Item Loneliness scale,[27] and Hunger Vital Sign™ two-item screening tool to detect food insecurity.[28] The AUDIT-C for Alcohol Use,[29] other questions ascertaining street drug use, and details on hospitalizations including visits to the ER reveal other healthcare concerns. Embedded flags in the 4Ms-RHRA identify potential risk factors which trigger staff to monitor those issues and initiate recommendations or referrals to link the residents to needed services and supports. Ongoing consultations between NJGWEP faculty and site staff facilitated the evolution of the 4Ms-RHRA, creating the flexibility to obtain information related to emergent issues (e.g., willingness to use telehealth during the pandemic).

Customized electronic database

An existing cloud-based case management platform, TrackVia, was customized to address the project workflow and support data capture on the evolving 4Ms-RHRA tool. User-friendly data entry screens accommodate staff with differing levels of comfort with technology and data-driven care. Camden Coalition created a self-directed online training module for staff responsible for conducting 4Ms-RHRAs and were available to address questions and provide real-time support. To maintain security of personal health data, only designated staff from participating sites enter data into TrackVia and

view residents' records based on their assigned site. NJGWEP staff receive de-identified data for grant reporting from Camden Coalition or the individual affordable housing sites.

RESULTS

Participants

Between 2019 and 2023, building staff at the four sites completed 221 4Ms-RHRAs with unique residents, the majority of whom were female (63%), ranging in age from 56 to 94 years (mean age 71.1 years, SD 8.0) who predominantly live alone (73%). Nearly one-half (42%) have less than a high school education and Spanish is the primary language for 27%. One third (36%) of the residents were Hispanic (White, Black, or Other), 34% were Non-Hispanic Black, 25% were Non-Hispanic White, and 5% were Non-Hispanic Other. Approximately 23% self-reported a fall, 30% visited the ER, and 20% were hospitalized in the past 6 months.

4Ms-RHRA directed interventions

A substantial portion of residents (81%) were flagged for at least one concern (Median of two flags, Mean = 2.2 [SD 1.9], Range 0–8). Flags occurred most frequently for the "most important health issue" identified by the resident (55%) and ACP (48%), followed by cognition concerns (31%) and falls risk (26%) [Table 1]. Overall, chronic conditions generated a flag for 18%, however, 62% of the residents have three or more chronic conditions (Median of three chronic conditions, Mean = 3.0 [SD 1.7], Range 0 to 8). Social determinants of health were also flagged for residents (Food Insecurity 17%; Loneliness and Social Isolation 15%). Figure 2 displays the percentage of residents assessed and flagged for each measure.

Impact of flags

The structure and process for implementing the 4Ms-RHRA and entering the data into TrackVia provides a mechanism for the staff to record health and biopsychosocial needs of residents and referral and follow-up information related to flagged concerns. Specific actions were taken in response to each flag. Follow-ups/actions related to ACP include providing copies of AD documents and the Five Wishes pamphlet and recommending discussing health goals with family and/or a healthcare professional. Residents with a flagged Mini-Cog score are advised to share that information with their doctor. Residents flagged for depression received assistance with mental health referral and explanations about insurance coverage. Residents with a falls risk are encouraged to use their assistive devices (e.g., cane, walker, rollator), to have a conversation with their doctor about situations related to falls risk (e.g., medications or other health conditions) or may be recommended for a Physical Therapy evaluation. Residents flagged for social isolation and loneliness are referred to community programs and activities and those flagged for food insecurity are signed up for a commodities program.

DISCUSSION

Training staff to implement the 4Ms-RHRA across multiple senior housing sites creates a replicable and sustainable standardized structure and process for screening, assessing, documenting, and monitoring changes in the health and biopsychosocial needs of older residents. The process facilitates the development of person-centered plans of care, triggers referrals to services, and alerts staff where additional support might be needed. Implementation of a user-friendly database that utilizes "flags" to identify important needs, supports data collection, prompts staff to record referrals and follow-up information for flagged issues, and permits monitoring interventions and impact over time. Continuous quality improvement informed modification of structure and process related to the 4Ms-RHRA and the electronic database. The building staffs' limited knowledge of existing services and resources impacted their ability to act upon flagged concerns and provide care recommendations. To address staffs' lack of experience with technology, creation of a self-directed learning module supplemented by personal guidance was crucial in building staff comfort levels and facilitated problem-solving encountered with the electronic platform. Staff can benefit from additional training on linking community-based resources to address residents' needs identified in person-centered plans of care. Developing staff skills in utilizing data to guide clinical decision-making and monitor recommended interventions as part of the regular workflow will improve their ability to address the complex needs of residents and is a critical part of workforce development.

Limitations and opportunities

The generalizability of findings from health assessments in senior affordable housing is limited by small sample

TABLE 1 4Ms resident health risk assessment screening measures, flags, referrals, and interventions recorded in TrackVia.

Resident health risk assessment	Assessed $N = 221$, n (%)[a]	Flagged after assessment n (%)[b]	Follow-up/Referral/ action taken n (%)[c]	Resolution/interventions noted n (%)[d]
4Ms framework				
What matters				
Most important health issue	143 (64.7)	78 (54.5)	2 (2.6)	0 (0)
ACP/AD	202 (91.4)	96 (47.5)	26 (27.1)	0 (0)
Medications				
Medication list	189 (85.5)	23 (12.2)	5 (21.7)	2 (40.0)
Mentation				
Mini-Cog	187 (84.6)	58 (31.0)	11 (19.0)	4 (36.4)
PHQ-2	215 (97.3)	29 (13.5)	8 (27.6)	0 (0)
Mobility				
TUG (Falls Risk)	163 (73.8)	57 (25.8)	16 (28.1)	4 (25.0)
ADLS/IADLS	215 (97.3)	15 (7.0)	4 (26.7)	1 (25.0)
Social determinants of health				
Loneliness and social isolation	219 (99.1)	33 (15.1)	8 (24.2)	1 (12.5)
Food insecurity	214 (96.8)	36 (16.8)	10 (27.8)	4 (40.0)
Chronic conditions	220 (100.0)	40 (18.1)	5 (12.5)	0 (0)
	Incidence n (%)[a]	**Assistance requested n (%)[e]**		
Hypertension	154 (72.6)	10 (6.5)		
Diabetes	93 (47.4)	7 (7.1)		
COPD	37 (18.0)	1 (2.7)		
CHF	20 (9.2)	2 (10.0)		
High cholesterol	93 (45.6)			
Arrhythmia	19 (8.7)			
Arthritis	130 (60.2)			
Asthma	59 (28.6)			
Dementia	7 (3.6)			
Depression	56 (29.9)			
Three or more chronic conditions	136 (61.5)			

Abbreviations: ACP, advance care planning; AD, advance directive; ADLS, activities of daily living; CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease; IADLS, instrumental activities of daily living; PHQ-2, patient health questionnaire; TUG, timed up and go.

[a]Number and % of the total for each item (minimal missing data for some items).

[b]Number and % of flags for those assessed.

[c]Number and % of follow-ups for those flagged.

[d]Number and % of resolutions for those with follow-up.

[e]Number and % requesting assistance of those with the chronic condition; assistance request asked only for the conditions with data listed.

size, local social determinants of health, and self-selection bias, since residents volunteer to participate. Sustainability beyond project funding requires an ongoing interprofessional approach to staff training and intervention models that move beyond traditional educational programming. Academic partnerships and interprofessional experiential training for staff and health professions students in senior affordable housing sites have the potential to build a direct care workforce that can address the needs of older, multiply compromised residents to support aging in place. It offers a viable, effective approach to establishing interventions that can be implemented, refined, and evaluated in the growing senior affordable housing environment.

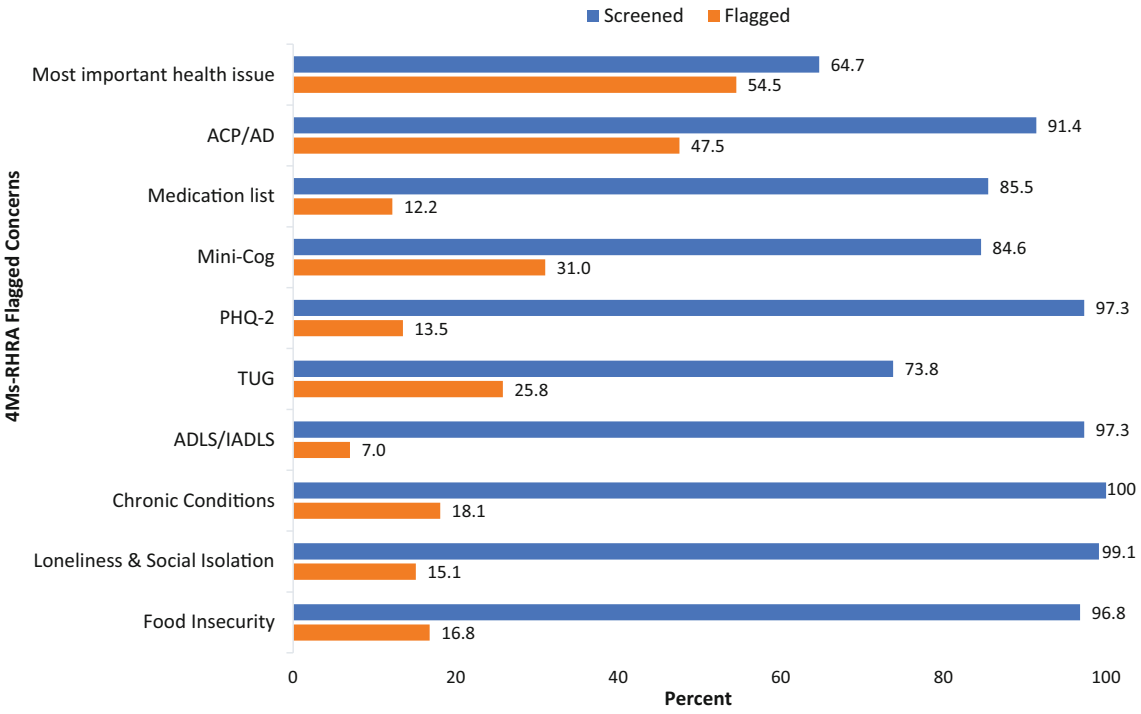

FIGURE 2 4Ms resident health risk assessment screening measures and flags.

CONCLUSION

The 4Ms-RHRA structure and process provides a framework and creates a shared mental model that promotes interprofessional team-based care that can be used for staff education, faculty development, and training health professions students of multiple disciplines and the direct care workforce. The framework creates opportunities for new academic partnerships and for collaboration with other providers and community-based organizations. It provides an option for co-location of services in the affordable housing buildings and facilitating direct linkages to existing community-based services and supports. This approach offers a different perspective on aging in place that adds to previous work that focuses on enhancing wellness, health promotion/disease prevention activities, and healthcare cost savings[6,7,10–16] by adding a replicable 4Ms-RHRA that incorporates interprofessional education, experiential training, and team-based care. It provides a foundational element upon which to base a core interprofessional curriculum with a real-time immersive community-based experience in affordable housing for undergraduate and graduate level health professions students, precepting faculty, and affordable housing staff. The 4Ms-RHRA structure and process has flexibility and potential to prepare a workforce able to fulfill the quintuple aim by addressing population health, enhancing the care experience, reducing cost, fostering care team well-being, and advancing health equity.[30]

AUTHOR CONTRIBUTIONS

Elyse Perweiler, Marilyn Mock, Margaret Avallone, Jennifer DeGennaro, and Sherry Pomerantz conceptualized the project, wrote the initial draft of the paper, and collaborated to create the 4Ms Resident Health Risk Assessment. Elyse Perweiler, Marilyn Mock, and Margaret Avallone developed the interprofessional education materials, trained and oriented faculty, students, and staff, facilitated interprofessional case reviews, and monitored ongoing program evaluation. Jennifer DeGennaro and Sherry Pomerantz provided staff guidance, managed data collection, and analyzed and interpreted the data for this article. Aaron Truchil and Stephen Singer customized the TrackVia database, developed self-directed training for staff, and provided aggregated data reports. All authors contributed to the preparation, revision, and final approval of the manuscript.

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CONFLICT OF INTEREST STATEMENT

None.

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