

# Developing a Comprehensive Geriatric Genogram Assessment Tool

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**ABSTRACT:** **Background:** The use of graphic depictions (pictorials) to represent medical conditions is an accepted method that can complement standard methodology of comprehensive geriatric assessment.

**Objectives:** To use the clinical pathway method to develop a comprehensive geriatric genogram assessment tool (CGGAT), which could supplement a written summary letter and recommendations.

**Methods:** We used the critical paths method to develop a tool to facilitate implementation of the comprehensive geriatric assessment recommendations. A multidisciplinary group of clinicians used the critical pathways method to develop a CGGAT.

**Results:** We used the CGGAT to depict the physical and functional status of patients and to complement the textual historical information, family dynamics, and current patient issues. CGGAT is a simple instrument that provides a visual structure and it can facilitate the sharing of information among team members, encourage interdisciplinary dialogue, enhance understanding and adherence on the part of patients and professionals, and reduce the burden on the clinicians who conduct the initial comprehensive geriatric assessment.

**Conclusions:** We showed the benefits and obstacles related to the adaptation of this new tool and provide recommendations for further development.

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**KEY WORDS:** clinical pathway, comprehensive geriatric assessment (CGA), elderly, genogram

or screening tests for central assessment domains, the team decides whether to refer the patient to an expanded team. This expanded team should include physical and occupational therapists, nutritionists, pharmacists, and psychiatrists.

During the CGA, patients undergo various tests, including a functional assessment of basic activities of daily living (e.g., the Barthel Index [2]), assessment of instrumental activities of daily living (e.g., the Older Americans Resources and Services Activity of Daily Living scale [3]), a cognitive assessment (e.g., the Mini-Mental State Examination [4] or Clock Drawing Test [5]), an assessment of symptoms of depression (e.g., the Patient Health Questionnaire [6]), a nutritional assessment (e.g., the Mini Nutritional Assessment [7]), a balance and mobility assessment (e.g., Timed Up and Go test [8]), and co-morbidity indices (e.g., the Charlson Comorbidity Index [9]). In addition, the caregiver's burden is often evaluated by the Zarit Burden Inventory (ZBI [10]). An essential part of the process is the medication reconciliation [11].

The implementation of CGA recommendations can benefit both patients and the healthcare system. However, the CGA process is challenging and difficult because of its length, the scope of domains, the duration, and the diversity of professionals involved in the process. While a large body of important information can be gathered during the process, different studies have shown that the adherence rates for CGA recommendations are as low as 49–79% [12–14]. Thus, a critical challenge is to convey CGA recommendations to healthcare providers in a manner that facilitates their implementation.

## PATIENTS AND METHODS

We used the critical paths (CP) method to develop a tool to facilitate implementation of the CGA recommendations. The CP method involves two steps. First, critical tasks and interdisciplinary processes are identified. Second, standardized key elements are documented to ensure standard of care for patients and provide an overview of the entire care process. This step includes different sources of information such as the results of assessments, consultations and diagnostic tests, and outcomes

A comprehensive geriatric assessment (CGA) is defined as a multidimensional interdisciplinary diagnostic process used to delineate the medical, functional, psychosocial, nutritional, and environmental needs of an elderly patient. A CGA also is used to develop a comprehensive plan for care and long-term follow-up [1].

A CGA requires contributions from many healthcare professionals. The core team should consist of a geriatrician, a nurse, and a social worker. Following a brief initial assessment

of interventions [15]. The CP method is considered the best practice tool for organizing and integrating different levels of healthcare. Using the CP method, our multidisciplinary group developed a Comprehensive Geriatric Genogram Assessment tool (CGGAT), which can supplement the CGA written summary letter and list of recommendations. Our group included a geriatric physician, two family physicians, and a healthcare social worker. We identified critical tasks, diagnostic tests, and interdisciplinary processes related to the medical, functional, psychosocial, nutritional, and environmental state of the elderly patient. A symbol was matched to each domain based on domain characteristics (test result, functional state, and emotional relationship). The usual genogram symbols [1] were used to represent family structure, family history, household members, significant dates, and relationships among family members [16].

**RESULTS**

Figure 1 shows our CGGAT worksheet and Figure S1 shows the symbols that were included in our CGGAT. All icons were downloaded (with permission) from Flaticon (www.flaticon.com). The genogram was drawn using the GenoPro software program (https://www.genopro.com/). GenoPro can facilitate the presentation of essential information about the patient and other family members by integrating both the genogram technique, which describes family structure and relationships among family members [16], and a series of symbols that describe fundamental geriatric conditions. The medical genogram can then be used for recording information about patients and families. It has a standard format to present family history and structure for at least three generations and to identify the type of bonds between family members and nonrelative household members and the individual characteristics of key family members. The genogram includes the primary medical problems of all family members; dates of marriages, divorces, deaths; and cause of death.

A genogram can also be used to verify whether there are recurrent relationship patterns and emotional or physical disruptions. The genogram originated within the discipline of family assessment and family therapy, and has been adapted to the needs of other healthcare settings such as genetic risk, sexuality, forensics, identification of cardiovascular risk, evaluation of needs, resources in end-of-life situations and bereavement, and care of patients with dementia [17-23]. There is a general consensus that the genogram is a valuable tool for assessments of complex situations.

**HYPOTHETICAL CASE STUDY**

We demonstrated the use of the CGGAT with a hypothetical case study. In our hypothetical case, Mr. David Cohen, was referred for CGA by his family physician due to memory

**Figure 1.** Comprehensive geriatric genogram worksheet

**Comprehensive Geriatric Genogram worksheet**

Patient Name: \_\_\_\_\_ Address: \_\_\_\_\_  
 Phone No: \_\_\_\_\_ Referrer: \_\_\_\_\_ Date: \_\_\_\_\_

**Legal issues:**

Y/N \_\_\_\_\_  
 \_\_\_\_\_ \_\_\_\_\_

**Medical issues:**

\_\_\_\_\_

**Functional issues:**

\_\_\_\_\_

**Financial issues:**

\_\_\_\_\_

**Environmental & Social issues:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Draw the patient genogram and ecomap here

Test	Date / score	Date / score	Date / score	Geriatric syndrome	Date
MMSE <sup>a</sup>					
CTD <sup>b</sup>					
PHQ <sup>c</sup>					
Barthel Index					
IADL <sup>d</sup>					
TU&G <sup>f</sup>					
MNA <sup>e</sup>					
Charlson's Score					
ZBI <sup>g</sup>					

<sup>a</sup>Mini-Mental State Examination, <sup>b</sup>Clock Drowning Test, <sup>c</sup>Patient Health Questionnaire, <sup>d</sup>Instrumental Activities of Daily Living, <sup>e</sup>Mini Nutritional Assessment, <sup>f</sup>Timed Up and Go test, <sup>g</sup>Zarit Burden Inventory

All icons were downloaded (with permission) from "Flaticon" (www.flaticon.com)

problems, general deterioration in everyday coping abilities, and recurrent falls. During the first visit David was assessed by a nurse, a social worker, an occupational therapist, and a geriatric physician. Figure 2 shows how the CGGAT was used to present the information collected at the first CGA.

In the genogram Mr. Cohen, a 78-year-old patient, is represented by a double square figure at his first visit to the geriatric clinic. As shown by the curved line under his name, he married Rebecca in 1961, after both immigrated to Israel. The Cohen couple's parents died, as shown by the cross and the year above their names, indicating both the fact that they are deceased and the year they died. The Cohen couple have two adult children (Rachel and Josef). Their son is divorced and their daughter is married and has one daughter. Mr. Cohen, his wife, and his son, live in the same house, as depicted by the dotted line surrounding them. Their daughter lives with her family in a separate house.





Figure S1. Geriatric symbol key

Medical issues		Primary caregiver aspects	
	Recurrent falls		Primary caregiver name
	Incontinence	<b>Environmental &amp; Social issues</b>	
	Drug sensitivity		Entitlement for daily home care within the framework of long term insurance. The number indicates level of entitlement
	Repeated hospitalization		Entitlement for home care long term insurance - 24 hours' assistance.
	Polypharmacy		Resident in a building without an elevator. The number beside the icon indicates the apartment floor
Functional issues			Adjustment of housing conditions is required
	Cane dependent		Emergency call-button at home
	Walker dependent		Holocaust survivor
	Wheelchair dependent		Visiting a Geriatric day care center as part of the entitlement of long term insurance
	Bed ridden		Permanent residence in a nursing home
	Hearing aid dependent	Legal issues	
	Vision limitation		End of life treatment preference - yes or no
Financial issues		Yes/No	
	Level of income: +/- means above /below average income		The appointed guardian name. Blank line indicates no appointed guardian
	Residence ownership: O – private, R – free rent P – public rent		Medical power of attorney name. Blank line indicates no appointment

All icons were downloaded (with permission) from "Flaticon" (www.flaticon.com)

tool to a written reference. Such a pictorial assessment might eliminate the need for a long written medical summary.

**CONCLUSIONS**

Using the CGGAT to complement the written assessment could help to formulate a treatment plan and simplify the provision of medical information. It is a short, user-friendly way to discuss recommendations with patients, their primary care teams, and their families. In geriatric medicine, the treatment plan usually encompasses all aspects of the patient's life, as assessed during the CGA. Using the CGGAT can improve communication with primary care physicians and families, thus improving implementation rates for CGA-based geriatric recommendations.

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