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REVIEW ARTICLE

Developing new hospital-at-home models based on Comprehensive Geriatric Assessment: Implementation recommendations by the Working Group on Hospital-at-Home and Community Geriatrics of the Catalan Society of Geriatrics and Gerontology

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ABSTRACT

Last decade, the Government of Catalonia have urged an integrated care strategy for planning the care model to older populations living with frailty, multimorbidity and advanced illnesses. Based on international evidence that was reviewed by a group of experts from the Catalan Society of Gerontology and Geriatrics, we summarised some recommendation to adapt hospital-at-home care to older populations in our system. We defined Comprehensive Geriatric Assessment (CGA) hospital-at-home (HaH) as a specialised home hospitalisation service formed by interdisciplinary teams, characterised by using the clinical methodology of CGA, and by adapting geriatric units' protocols for the provision of person-centred care at home. Main benefits of CGA-HaH in these populations are: response to heath crises according to individualised care plans based on the *situational diagnosis* carried out by Primary Care teams; provision of a comprehensive health and social approach tailored to the complexity of cases and situations; and adaptation of multipurpose hospitalisation, by working on different person-centred care, aspects, such as caregivers support on care provision, focusing on function or home adaptation.

Desarrollo de nuevos modelos de hospitalización a domicilio basados en la valoración geriátrica integral: recomendaciones del grupo de trabajo de Hospitalización a domicilio y geriatría comunitaria de la Sociedad Catalana de Geriatría y Gerontología para su implementación

Palabras clave:
Hospitalización a domicilio
Valoración geriátrica integral
Cuidados integrados
Fragilidad
Paciente crónico complejo

RESUMEN

En la última década el gobierno de Cataluña ha diseñado un plan estratégico de atención integrada para planificar la atención del subgrupo de pacientes mayores con fragilidad, multimorbilidad y enfermedad avanzada, con la intención de mejorar la salud y el manejo clínico. Guiándonos en la evidencia internacional, revisada por un grupo de expertos de la *Societat Catalana de Geriatria i Gerontologia*, revisamos recomendaciones para adaptar los modelos a la población mayor de nuestro sistema. Así, definimos la hospitalización a domicilio geriátrica o basada en la valoración geriátrica integral (VGI) como

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una hospitalización a domicilio especializada basada en equipos interdisciplinares que utilizan la VGI como instrumento de trabajo de manera similar a las unidades de hospitalización geriátricas. Estas intervenciones ofrecen beneficios en responder a crisis de salud dando continuidad al diagnóstico situacional y a los planes individualizados planteados por los equipos de atención primaria, en realizar una valoración integral de la complejidad en todos sus aspectos, y en ofrecer una hospitalización integral centrada en la persona, trabajando aspectos como el apoyo a los cuidadores en la atención, la recuperación funcional y la adaptación del domicilio.

Introduction

The growing number of older populations living with frailty, multiple chronic conditions, and advanced illnesses, is a challenge by European systems and other health and social systems worldwide. Last decades, these systems have been facing a threat for their sustainability that have been worsened with the Covid-19 crisis. In the Catalan system, the care of complex patients accounts for up to 40% of healthcare costs, which are mostly in relation to hospital admission.[1] During the Covid-19 crisis, older adults have been one of the groups more negatively affected, in terms of mortality and in other consequences that impacted in their life.[2–4] Community dwelling older people that live with frailty and chronic conditions have several complexity profiles, that leads to high health and social needs. To cope with this situation, the Government of Catalonia urged an integrated care strategy for planning the care to these subgroups of older populations living with frailty and complex chronic conditions[5] by offering strategies to improve care, both in terms of health (person-centred care) and efficiency in their clinical management.

Despite there is strong evidence that hospital-based geriatric services, using Comprehensive Geriatric Assessment (CGA) have shown a higher probability of remaining patients alive and at home for up to one year after crises care,[6,7] it is known that inpatient care leads to an increase in complications in frail and complex chronic patients, with high likelihood of suffering functional decline, delirium, nutritional alterations, loss of muscle mass, among others. These complications have been considered by some authors as iatrogenic disability.[8] Environmental measures, early mobilisation and nutritional support are some of the actions taken in the care of the elderly units to avoid iatrogenic factors related to hospitalisation. In this sense, hospital-at-home units appeared decades ago as an alternative to conventional hospitalisation, providing a level of care similar than hospitalisation units, as a safe alternative in this patient profile, both in the modality of facilitating discharge from hospitalisation units as well as avoiding conventional hospital admission.[9–12]

In Spain[13] home hospitalisation was started and has grown heterogeneously, often in relation to certain hospital care trajectories, such as those for the treatment of infectious pathologies, rather than in person-centred needs in complex health crises. In the past few years progress has been made in building a regulatory framework for the future that promotes the development of home hospitalisation, in a homogeneous way throughout the territory, beyond the trajectories linked to hospitalisation units. Based on international evidence several authors have urged to adapt hospital-at-home services to older populations not only to medical and infectious health crises but also to disabling health crises.[14] In a previous scoping review published in this journal, Mas and Santaeugènia summarised, according to various needs of the system, how home hospitalisation of older patients should respond in different ways[15]: (a). alternative to acute geriatric hospitalisation, for those selected acute cases in which home care is safe; (b). alternative to intermediate care geriatric hospitalisation, for those subacute or acute cases with needs for continued geriatric intervention with a short-term rehabilitative component and a good prognosis; (c). support in the management of acute and subacute health crises selected in the care home setting; (d). support in the management of acute and subacute health crises treated by Primary Care services in the care of older patients with frailty and complex chronic conditions.

From the Catalan Society of Geriatrics and Gerontology we propose a model of hospital in the home care adapted to older populations living with frailty and other chronic and advanced conditions, and suffering acute and subacute health crises, where geriatrics plays a key role in the definition of alternatives to conventional hospital admission. Both the selection of patients requiring home admission and their appropriate diagnosis and management by means of the CGA are fundamental. The activity of home hospitalisation is being boosted in Catalonia and in other systems, by promoting one common framework that allows to reach a greater number and profiles of patients. In this scenario, the relationship between Primary Care and hospital-at-home units must be central to keep complex patients in the community when they suffer from health crises, especially older populations in need of integrated care response.

For the expansion of a hospital-at-home model tailored to older populations, the Catalan Society of Geriatrics and Gerontology created a multidisciplinary working group with members of different home hospitalisation units and primary care centres in Catalonia that use CGA in their healthcare home hospitalisation model. The group developed a consensus document with implementation recommendations, based on the complementary added value that could offer to primary care and community services. The aim of this paper is to summarise main scientific basis of these implementation recommendations and to highlight basic aspects of hospital-at-home services tailored to older adults, such as team composition or its functionality, to encourage the implementation of acute hospital-at-home and community geriatrics teams to response to health crises in the integrated care scenario of the future.

Modalities of intervention and scientific evidence of the geriatrics-led hospital-at-home model

In recent decades, specialised geriatric care formed by interdisciplinary teams, using CGA at different levels of care (acute care, intermediate care, or community care), have demonstrated consistent benefits in mortality, functional decline, and cognitive impairment in at-risk elderly population.[16] Crisis management in the older patient at home, by home hospitalisation units using CGA has also been evidenced with favourable results in the last years. Several studies demonstrated that interdisciplinary interventions by geriatrics-led hospital-at-home teams reduce complications, in addition to improving the degree of satisfaction on the part of caregivers and having an impact on costs for the system.[17] All this scientific evidence shows safety, efficacy and efficiency of home hospitalisation led by geriatricians in both modalities of hospital-at-home/hospital in the home admission avoidance (substitution

of conventional hospitalisation) and early discharge (shortening of the stay in the hospitalisation unit).

(i) Admission Avoidance (substitution for hospitalisation)

In these schemes, patients who require hospital care and are referred from a unit/service other than the conventional hospitalisation unit are referred to hospital-at-home. The origin of referrals would be hospital units: emergency departments and outpatient services, such as day hospitals, or Primary Care Teams and community services. Main patients' profiles could be: (a). Older patients in a health crisis at home (acute/subacute illness and/or decompensation of chronic illness); (b). Older patients with dementia and acute/subacute behavioural disorder of complex management. In this modality, several studies have shown that home hospitalisation by geriatricians is associated with a lower incidence of geriatric syndromes (such as confusion, acute urinary retention, constipation, and incontinence).[17] They also achieved functional improvement in instrumental activities of daily living, compared to conventional hospitalisation, with no differences in adverse events.[18,19] The Torino group, in Italy,[20–23] has shown that home hospitalisation led by geriatricians is effective in managing other complications during admission (such as behavioural disorders, pressure ulcers, alteration in nutritional status or in mood), with a positive impact on quality of life. This clinical impact has also been associated with a decrease in hospital readmissions for other causes unrelated to the previous admission during the following months of follow-up.[21–23] This fact suggests the possible effect of geriatric interdisciplinary assessment and intervention during the management of exacerbations and post-acute complications, due to the fact of intervening holistically, facilitating the continuity of the care at home by referring Primary Care professionals.[24] The average stay of patients admitted to geriatric home hospitalisation services was slightly higher than those in conventional acute hospitalisation, due to the integration of functional intervention at home by physiotherapists and occupational therapists, but none of the patients cared at home would require subsequent admission for functional rehabilitation after discharge from home hospitalisation. About 2 out of 10 patients admitted to conventional hospitalisation would require admission to intermediate care units for rehabilitation after discharge from the acute hospitalisation unit. This fact delays the return home of the most vulnerable patients. Avoiding conventional admission through geriatric home hospitalisation could improve this situation. In United Kingdom, Shepperd et al. found a relative reduction in long-term residential care for patients allocated in Comprehensive Geriatric Assessment hospital at home compared with hospital admission CGA at 6 and 12-months follow-up, and in delirium at one month, being a cost-effective alternative to admission to hospital CGA-based wards for selected older people.[25,26]

(ii) Early discharge (shortening of hospital admission)

In these schemes, patients are referred from conventional admission units to complete the treatment of acute or postacute intermediate care at home. The origin of referrals would be hospitalisation medical and surgical wards. Main patients' profiles could be (a) Patients with acute illness and clinical complexity related to geriatric profile (infectious and non-infectious); (b) Acute chronic pathology in older people; (c) Post-surgical older patients; (d) Patients with acute disability due to both medical and surgical processes. Several groups have published the role of hospital at home interventions led by geriatricians in this modality. The Sydney group, in Australia, published to role of these early discharge schemes in stay reduction in days of hospitalisation and in the decrease in the incidence of delirium,[27] among others.

In Spain, an adaptation of the geriatrics-led home hospitalisation model to the Catalan health system has been published from a group located in the metropolitan area of Barcelona.[28–31] The working methodology used by this scheme is very similar to that of geriatric acute and intermediate care wards: an interdisciplinary team works by using the CGA tools and in a coordinate way with other actors with the objective of avoiding fragmentation in the care of the frail and complex patient and improving the quality and efficiency of the health system in responding to crises. In patients with acute disabling processes (stroke or femoral fracture), the Catalan geriatric home hospitalisation intervention has shown a reduction in length of stay, with no increase in complications or readmission.[28–31]

Rationale of Comprehensive Geriatric Assessment Hospital-at-Home (CGA-HaH) as a geriatrics-led care model

Thus, we define CGA-HaH as a specialised home hospitalisation unit formed by interdisciplinary teams characterised by the use of the clinical methodology of the CGA with a similar operation to that of conventional geriatric hospitalisation units (acute care and subacute intermediate care wards).

Main candidate targeting populations for received CGA-HaH care are:

a. Older patients identified as frail, especially if they present geriatric syndromes such as falls, functional decline or cognitive impairment.
b. Older patients identified as complex chronic patients.
c. Older patients suffering advanced chronic illnesses.

Main criteria for admission to CGA-HaH services may be summarised as: (a). presenting hospital admission criteria; (b). absence of intensive monitoring criteria; (c). home located within the area of influence of the service; (d). existence of a capable caregiver with abilities appropriate to respond to the needs of the patient; (e). acceptance of the service by the patient and family/caregiver; (f). optimal hygiene and safety conditions at home; (g). availability of phone to contact with the healthcare team.

CGA-HaH multidisciplinary teams in the community and working plans on an integrated care scenario

Based on the reviewed international schemes, the basic composition of the interdisciplinary teams that we recommend is:

- Geriatricians: they are the main physicians of the unit. They have expertise in the care of frail older patients living with complex chronic conditions and advanced illnesses who are at risk of functional decline and other geriatric syndromes.
- Geriatric nurses: they are the key health professionals who take care of the older patient. The performance and operation of geriatric nurses depends on the competencies of their nursing profession. They aim to: a. Evaluate and plan individualised care plans using a systematic and organised method, implementing nursing techniques and procedures; b. Develop actions to promote health, disease prevention and health education in the different areas of practice, strengthening the levels of prevention; c. Provide comprehensive and coordinated care through interdisciplinary work; d. Give a professional and quality response to different nursing practice situations; e. Include in the practice the ethical and legal principles that guide the profession and consolidate the professional commitment to society through participation and involvement; f. Advise, guide and empower patients and relatives in home hospitalisation.

Table 1
Working plan components of the CGA-HaH model, based on recommendations of the Working Group on Hospital-at-Home and Community Geriatrics of the Catalan Society of Geriatrics and Gerontology.

- Interdisciplinary work carried out by a team of health and social professionals specialised in geriatrics.
- Use of the Comprehensive Geriatric Assessment tools to tailor individualised care plans.
- Consensus of complex interventions adapted to each individual case and views (depending on available caring resources at home and on what matters most to each older individual).
- Follow-up of outcomes and plans regularly monitored by the team in interdisciplinary meetings.

- Physiotherapists: they evaluate, plan, and carry out programmes of rehabilitation to improve and restore motor function, maximise movement, relieve painful syndromes, and treat and prevent physical alterations associated with illness, injury, and other disabilities. They apply a wide range of techniques, such as movement and physical means. They also develop and implement programmes for the prevention and detection of common physical illnesses and disorders. Physiotherapy involves interaction between the physiotherapist, patients, other health professionals, families, caregivers, and communities.
- Occupational therapists: they seek, through the assessment of the abilities and physical, mental, sensorial, and social problems of the individual and the appropriate treatment, to train him so that they can achieve the greatest possible degree of independence in their daily lives, contributing to the recovery from their illness and/or facilitating the adaptation to their disability.
- Social workers: they know the social determinants of health and the needs of the older person and his/her family affecting the health-illness process, identifying family and social networks, and promoting the use of available resources, through actions related to research, planning and programming, social education, promotion, prevention, social advice, and management of social and/or health resources, aimed at recovering health and the participation of individuals, groups and communities in health institutions. They will ensure that a socio-familial assessment is made of all patients admitted to home hospitalisation with the goal of identifying, at an early stage, patients in need of social intervention by link to the territory, home help service, telecare, dependency.

Although these are the professionals who most frequently make up a geriatric home hospitalisation team in the different international schemes reviewed, depending on patient profiles and interventions, other disciplines could be included into the interdisciplinary team. Example of other disciplines linked to these services are nutritionist, pharmacist, speech and language therapist, nurse assistants, between others.[15]

The care for health crises of the older adults with frailty and complexity should follow the same methodology developed and validated in the acute geriatric units, which is also commonly adapted to use in bed-based intermediate care, as shown in Table 1.

Tables 2 and 3 show how the work of the different disciplines should be carried out during home hospitalisation intervention to ensure a range of activities and complex interventions.

The different professionals in the team will seek maximum communication and coordination with the professionals in the relevant primary care team. Prior to discharge, the sheet of continuity of care will be filled in and sent ("Pre-discharge type"), at least 48 h in advance. The usual continuity resources (day hospital, reablement home rehabilitation, home care support teams such as hospice at home, etc.) relevant in each case could also be activated. Steps to follow to ensure continuity of care include a. Establish a discharge date, agreed at the interdisciplinary meeting and with the patient and primary caregiver. b. Coordinate follow-up plan with the different professionals of the Primary Care Team. c. Instruct about the need for continuity of care 24–48 h before of discharge. d. On the day of discharge, the discharge report updated by all team members and the updated electronic prescription will be delivered, and, if necessary or not delivered before, the orthopaedic prescriptions or other necessary products.

Table 2
Activities from the multidisciplinary CGA-HaH teamwork plan, based on recommendations of the Working Group on Hospital-at-Home and Community Geriatrics of the Catalan Society of Geriatrics and Gerontology.

Activities at admission
- Identification of the individual risk and potential complications associated to the degree of frailty and complexity of each person will be performed.
- Clinical history information will be collected, and pharmacological treatment will be reviewed.
- A comprehensive assessment of the patient and their caring environment will be carried out, considering the basal situation and the situation at the time of admission, for the elaboration of a multidimensional care plan based on the updated situational diagnosis.
- Functional and cognitive capacity will be systematically assessed, as well as the care capacity of the caring environment, in addition to the need for rehabilitative treatment arising from the possible loss of autonomy associated with the acute triggered process.
- Realistic therapeutic goals will be established with the patient and the family, agreed with the patient's reference teams.

Activities during hospitalisation
- During home hospitalisation, the problems detected will be reviewed and the objectives and care plan will be adapted according to the evolution.
- Interdisciplinary meetings will be held to discuss the therapeutic plan.
- Nursing techniques will be executed and strategies of support for the patient and the family, with a bio-psycho-social approach, will be encouraged.
- The caregiver will get help in order to avoid overload by monitoring the patient's social situation.
- The re-education of gait and the enhancement of maximum functionality will be worked on.
- The empowerment of the patient will be promoted to achieve the established goals.

Activities for discharge planning
- The clinical stability of the patients will be confirmed, and the report of discharge and continuity of care will be prepared.
- Interventions carried out during hospitalisation will be reinforced and doubts will be resolved.
- The functional, cognitive capacities and the level of autonomy achieved will be assessed in order to give continuity to the treatments carried out from Primary Care.
- There will be systematic coordination of the care plan with health services and social services for follow-up.

Interdisciplinary teamwork
- Problems during hospitalisation should be shared in a joint interdisciplinary meeting (physicians, nurses, therapists, social workers and other disciplines involved).
- The initial interdisciplinary meeting must be held during the first days of hospitalisation.
- The frequency of the meetings will depend on the patient's situation: every 24–48 h in the case of an acute patient and weekly in the case of a post-acute patient; these meetings will focus on following up and monitoring the unique therapeutic plan, with the intervention goals for each of the problems detected.
- There should be a specific record that includes problems, goals, and interventions for each case.
- At the time of the discharge there must be a record of the working plan, with the goals achieved, the evolution of the problems and the needs or resources at the discharge; this interdisciplinary report must be sent to the Primary Care Teams, to ensure the continuum of health care in effective post-discharge transitions of the unit.

Table 3
Main proactive clinical actions by involved disciplines of the CGA-Hospital-at-home teams, based on recommendations of the Working Group on Hospital-at-Home and Community Geriatrics of the Catalan Society of Geriatrics and Gerontology.

Geriatrician

Admission
- Collection of medical history
- Physical examination.
- Diagnostic and therapeutic plan.
- Chronic medication review.
- Use of specific Comprehensive Geriatric Assessment tools.

Hospitalisation
- Diagnosis, prognosis, and prevention.
- Medication review.
- Review of secondary prevention measures.
- Planning of discharge.

Discharge
- Write a hospitalisation discharge letter.
- Update of electronic prescription.
- Coordinate with leading health professionals.
- Request continuity of community rehabilitation, if necessary

Geriatric nursing

Admission
- Vital signs recording (ECG if necessary).
- Evaluation and planning of individualised care plans (nutrition, dysphagia, continence and intestinal habits, mood, skin integrity, sleep).
- Establish nursing diagnoses and prevention strategies.
- Health education on treatment and care recommendations.
- Advise and guide patients and relatives in the routine of home hospitalisation.
- Use of specific Comprehensive Geriatric Assessment tools.

Hospitalisation
- Perform nursing techniques and procedures (ECG, analytics, iv drugs, INR, etc.).
- Monitoring and reinforcement of individualised care plans.
- Educate on medication.
- Help prevent caregiver overload.
- Reinforce healthy lifestyles.

Discharge
- Complete care continuity report to send to the primary care team before discharge.
- Nursing discharge letter.
- Coordinate with leading health professionals

Social worker

Admission
- Socio-familial assessment.
- Assessment of the primary caregiver's abilities.
- Promote, guide and manage own resources.
- Coordinate, guide and manage community resources.
- Use of specific Comprehensive Geriatric Assessment (CGA)

Hospitalisation
- Monitoring the patient's social situation.
- Make a first social diagnosis of the patient's situation and a proposal for intervention.
- Inform of the work plan with the patient-family in case of intervention.
- Present strategies to accompany the patient and/or family from a bio-psycho-social perspective, if needed
- Coordination with the team and the network for the assessment and activation of social resources during hospitalisation and discharge

Discharge
- Reinforce the interventions carried out during the hospitalisation and guide in the doubts that arise to the patient and/or family.
- Coordinate with basic social services and relevant health professionals.
- Carry out a social report, if applicable, showing the intervention carried out.

Physiotherapist

Admission
- Specific physiotherapy assessment according to pathology.
- Assess and advise functional mobility and transfers.
- Advise on walking support products.
- Reeducation of gait.
- Patient and family health education in walking and fall prevention.
- Establish treatment goals agreed with patient and family.
- Use of specific Comprehensive Geriatric Assessment tools.

Hospitalisation
- Learning specific active and self-aided exercises.
- Performing manual therapy and application of physical agents based on needs.
- Static and dynamic balance techniques and re-education of indoor walking.
- Assess the feasibility of outdoor walking with the necessary support product.
- Patient empowerment, promoting the monitorisation of the physiotherapy plan at home to achieve the set goals.
- Assessment of the possibility of introducing ICT in the treatment.
- Joint work of physiotherapy and occupational therapy in the training of community activities.

Discharge
- Assess and make final recommendations on ambulation, stairs and exteriors.
- Guide on resource continuity of appropriate physiotherapy in case of need.

Table 3 (*Continued*)

Occupational therapist
Admission
• Specific occupational therapy assessment.
• Assessment of the environment and advice of health personnel and adaptations to the home.
• Training and advice on carrying out daily life activities for patients and families.
• Health education in fall prevention.
• Establish treatment goals agreed with patient and family members.
• Use of specific Comprehensive Geriatric Assessment tools.
Hospitalisation
• Training of transfer, basic activities and daily life tools.
• Promote the learning of recommended functional activities.
• Assess and train the support products needed for the activities of daily living.
• Assess the need for the use of splints and their preparation/advice.
• Assess support material in relation to advice on support products and adaptations.
• Empowerment of patients and families in order to promote the acquisition of autonomy at home
• Assessment of the possibility of introducing information and communication technologies in the treatment.
Discharge
• Make specific assessment of occupational therapy at discharge (according to functional and cognitive abilities and level of autonomy).
• Give final recommendations in order to give continuity to the treatment performed.

Implementation recommendations of the CGA-HaH model

In older adults patients at risk of complications (due to frailty or complexity – complex chronic patient/care model of advanced conditions), rapid activation, at home and care homes, of CGA-HaH services, adapted as an alternative to conventional hospital care, should be guaranteed from Primary care and community services whenever possible. In addition, if the patient has been cared for in the hospital setting, the process of home discharge should consider the activation of geriatric home hospitalisation whenever possible. The risk of complications in frail and complex elderly patients requires that when home hospitalisation is activated, the device responsible for care can ensure the provision of the comprehensive model of geriatric home hospitalisation. In these patients the role of geriatric home hospitalisation should be focused on responding to community crises, either by direct access at home, or after a short stay in the hospital.

From the Working Group on Hospital-at-Home and Community Geriatrics of the Catalan Society of Geriatrics and Gerontology, we propose four complementary ways to expand the model to the whole integrated care system:

a. The incorporation of professionals that are specialists in geriatrics in the existing home hospitalisation units.
b. The training in geriatrics of professionals from the different disciplines of the existing home hospitalisation units.
c. The development of new CGA-HaH units from geriatric departments in each territory.
d. The collaboration between primary care professionals and interdisciplinary teams specialising in geriatrics to ensure the continuity of care for vulnerable older patients, as long as specific home hospitalisation resources are guaranteed.

Discussion of these recommendations: the role of the CGA-HaH model in the integrated care systems of the future

The structure of geriatric hospital care established in recent decades on the basis of acute hospitalisation units (in acute hospitals) and intermediate care units (at intermediate care hospitals) is one of the values of integrated care systems worldwide. Despite the acute geriatric units and intermediate care geriatric units are open to access from Primary Care and community services, a similar development of geriatric units in the community working for the management of acute and subacute crises should be sought, in support of the maintenance of patients at home, in collaboration with Primary care Teams and community services. In this sense, several opportunities of extending the implementation of this model in integrated care system as the Catalan system include: a. to give continuity to the *situational diagnosis* carried out in Primary Care for the management of health crises; b. to carry out a comprehensive health and social approach to the complexity at the time of each health crisis and to cover post-crisis needs; c. to assess the clinical and social complexity from all dimensions and needs of the older person; d. to ensure continuity of the care plan with community services; e. to offer an adapted multipurpose hospitalisation with the possibility of working on different aspects of functional and health care interventions, both in a preventive and treatment way; f. to facilitate coordination of care and access to hospital care services when needed; g. to support new models and evaluations of person-centred care.

Key points for future implementation of this model

- The CGA-HaH model urged to respond to the complex needs of frail populations.
- CGA provided by home-based specialised multidisciplinary teams in crises should be useful to detect health and social complex needs of people living with frailty and complex conditions, such as dementia or advanced illnesses.
- The implementation of this model should be done in the context of integrated care strategies, where community geriatrics has a key role in the collaboration with primary care and community services, not only at home but in care homes.
- The CGA-HaH extension in the whole system requires estimating needs in the different territories, based on emergency department use and conventional hospitalisation use of frail populations.
- Providers and users should be involved in the adaptation of person-centred specific indicators. Acute care indicators such as Length of Stay should be adapted due to the characteristics of these services.

Conclusion

This paper aims to show the usefulness of a comprehensive model of home hospitalisation carried out by geriatric multidisciplinary teams, for the crisis management of frail and complex older patients, called CGA-HaH. At the same time, it suggests that these geriatric home hospitalisation resources led by multidisciplinary professionals with specialised training in geriatrics, should be available in the territorial home hospitalisation services, in order to expand the response to the growing number of elderly patients with high risk of complications. Direct access to geriatric home hospitalisation from Primary and Community Care teams or facil-

itating discharge from hospitalisation units, is key to maintaining vulnerable older patients in the community and minimising risks.

According to the available evidence reviewed by our expert group, we noticed how the home hospitalisation schemes provided by geriatric interdisciplinary teams are adapted to the high-risk patient, by defining complex interventions that holistically cover the needs of the patient and their caring environment,[32–33] both from a health and social perspective, with the aim of promoting reintegration into post-crisis community life,[34] with autonomy and quality of life. Overall, the potential of the geriatric home hospitalisation model, should focus on[35]: a. Reduction of complications during admission, such as delirium or functional decline, among other geriatric syndromes; b. Improving health outcomes after discharge. c. Decrease costs compared to conventional hospitalisation; d. Reduction of days of stay and readmissions

In the new research agenda in hospital-at-home[36] we have a good opportunity to spread and evaluate new models of hospital-at-home tailored to the older populations with complexities of care[37] in favour of holistic approaches, promoting individualised care tailored to complex needs, support and therapeutic education for patients, families, and caregivers, and facilitating post-crisis continuity of care,[38,39] in a person-centred way in patients' home.

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Conflict of interest

All authors declare that they have no conflict of interest.

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More information and resources from our group can be found at: http://scgig.cat/grup-hospitalitzacio.

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