Establishment of the social health work process and its integration into clinical information systems in Catalan Health Institute hospitals

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Abstract

The evolution of clinical information systems has enabled the integration of processes at workstations, providing significant benefits for patient care. At the same time, the development of a social health work process (SHWP) has become a priority for our field. For this reason, the Social Work Coordination Unit at the Catalan Health Institute (ICS) set a goal of establishing an SHWP in ICS hospitals and integrating this process into electronic medical records.

To create the SHWP, the Social Health Work Information Systems task force (SHWIS) was formed. This group adapted an earlier project carried out at the primary care clinical workstation, which was based on a register of social variables. The SHWP developed consists of 6 stages: initiation of hospital care, social assessment, abuse, social health diagnosis, follow-up, and discharge. It thus aims to document the patient-family pathway during hospitalisation. Integration into the medical records was carried out by the SAP-ARGOS technical process team. In parallel, a dashboard was created to visualise the data entered.

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The SHWP has been implemented in all ICS hospitals, although data recording is not yet consistent. Measures are being applied to address this, including updating the social assessment conceptualisation document, reviewing dashboard data and creating sub-processes for specific clinical and social profiles.

Keywords: Social health work process, social variables, clinical information systems.

1. Introduction

1.1. Context

The goal of social health work is to deliver social healthcare services within the health system to individuals and their families who are at risk of losing their wellbeing owing to ill health or situations of social vulnerability (Salut Integral Barcelona, 2023). The person-centred care model is underpinned by social health assessment, and the intervention of social health workers (SHWs) is essential to ensure integrated care, encompassing both social and healthcare factors (Du Ranquet, 1996). In this context, establishing a social health work process (SHWP) is a priority for our field.

The evolution of clinical information systems has enabled the integration of clinical processes at workstations, providing significant benefits for patient care. A cross-disciplinary management system such as this entails the need for identifying the workflows and variables involved in each process. As a result, healthcare professionals view only the variables relevant to the clinical process they are dealing with. This approach also redesigns how information is compiled and displayed on the clinical workstation (Generalitat de Catalunya, 2017). The workstation serves as the platform where diagnostic, complementary test and treatment information is stored, forming the core of the patient's medical record (Act 16/2010).

Historically, social health workers have taken steps towards achieving this integration. In the second quarter of 1993, a group of professionals from healthcare centres requested a standardised software system to streamline the activities of social work teams. At the behest of the management of the Catalan Health Institute (ICS), a task force from both primary and hospital care sectors was set up to develop a standardised system for recording social data. In hospitals, the agreed approach focussed on defining data parameters and designing an electronic recording document. By late 1993, the first proposal for standardising social histories was drafted. However, this work was not implemented uniformly across all hospitals. While some centres developed digital tools, others continued using paper-based records. The hospitals that developed digital tools created two separate applications for recording social data: the SWU (Social Work Unit) application, designed by professionals at the Arnau de Vilanova University Hospital in Lleida; and the ISCCU (Information System for Citizen Care Units) application, which was exclusively used at Vall d'Hebron Hospital. For a time, both systems (SWU and ISCCU) coexisted until, around 2010, it was decided to adopt the ISCCU system across all ICS hospitals. Although the ISCCU system represented significant progress in standardising and unifying the recording of social data in hospitals, it remained an external software application. As a result, it was not integrated into patients' medical records and could not be accessed by other healthcare professionals involved in their care. Furthermore, the system did not allow for consistent social data exploitation across all ICS hospitals.

More recently, within the framework of the SISCAT Information Systems Master Plan (2016–2020), a task force composed of SHWs from various providers and care levels was set up (Catalan Ministry of Health, 2023a). This group laid out a new proposal for social health work information systems intended for community-based health services, incorporated into the Primary Care Clinical Workstation (PCCW) platform. Nevertheless, these latest developments were not introduced into the hospital-based social work sphere. Moreover, it was recognised as an opportunity to standardise the language and recording of hospital social work activities. This recognition led to a decision in early 2020, initiated by the ICS Social Work Coordination Unit and validated by the Directorate of Care, to develop an SHWP based on clinical processes and integrate it into the electronic health record system.

At ICS hospitals, the clinical workstation used for managing patient records is known as SAP-ARGOS. It is connected to the PCCW primary care platform, other clinical workstations within the institution, and the shared medical record system in Catalonia (HC3) (Catalan Ministry of Health, 2023b).

1.2. Theoretical framework

At present, as with all health organisations, hospitals must optimise outcomes and align with the needs of patients and other system users, and indeed with the professionals whose job it is to deliver healthcare services for them. This has driven hospitals to implement quality management systems aimed at achieving excellent outcomes within service provision along with a commitment to exceeding their own standards (Vom Brocke and Rosemann, 2015). This focus is a strategic factor of exceptional importance in the quality system embraced by the organisation. Consequently, clinical processes are critical in this context, as they form the foundation for ensuring both effectiveness and efficiency in healthcare delivery. Additionally, the continuous improvement of these processes enables a constant adaptation to the evolving needs and expectations of patients.

The concept of a "process" is defined in varying ways in the literature: a) According to standard ISO 9001:2008, it is a set of interrelated or interacting activities that transform inputs into outputs; b) The EFQM model describes it as a sequence of activities that adds value by producing a specific product or service from defined inputs. Both definitions emphasise the sequential organisation of activities as a vital component to produce predictable and satisfactory results, aimed at adding value for the patient by optimising tasks and continuously improving the quality of care (Lozano et al., 2012).

From a theoretical perspective, five basic principles underpin the design of processes. These are:

1. Patient- and population-centred process design: This involves exploring the needs and expectations of patients as the initial step in process design, introducing aspects that extend beyond

technical and scientific quality into professionals' perspective of quality, thereby encouraging cultural change within the organisation, establishing the patient as being the true focus of care.
2. Engagement of professionals in process design: Professionals are the main drivers of clinical management. Multidisciplinary working groups are necessary to foster continuous improvement in the organisation from a novel standpoint.
3. Appropriate clinical practice: The process can benefit from the necessary clinical recommendations, based on available evidence, in the form of clinical practice guidelines, protocols and standardised care plans, aiming to reduce variability in medical interventions.
4. Incorporation of an information system: This ensures the availability of data to monitor activity outcomes.
5. Continuity of care: This principle ensures cooperation and participation measures that facilitate the patient's transition between different levels of care and eliminate actions that do not add value to the care process (Hernández, 2021).

In the hospital setting, advances in technology and communication have been significant in recent years. The ICS began implementing clinical process organisation within the electronic health record (EHR) in late 2013. This multidisciplinary approach is structured around patients, prioritising the efficient, accessible and knowledge-generating management of information, with the patient and their interaction with the system as the central focus (Generalitat de Catalunya, 2017).

One of the primary goals of process-based management is to minimise clinical variability. This variability refers to systematic differences in standardised tasks for specific treatments or diagnostic procedures at a given population aggregation level. To address clinical variability, new technologies (such as EHR systems) and the development of protocols and guidelines are essential. However, barriers to process-based management have also been identified, including the need for training, aversion to change among some professionals, perceived increases in workload, lack of time and the absence of organisational software with integrated databases and evaluation programmes (Plazzotta et al., 2015).

Within this context, there have been reports of experiences in other healthcare specialities where process-based clinical approaches have facilitated professional interventions, improved patient care and satisfaction of their needs, and ensured continuity of care (Guadarrama-Ortega et al., 2017). For these reasons, the development of a SHWP within the electronic health record is a priority for advancing our speciality.

The objectives of this study are twofold: to develop an SHWP for ICS hospitals and to integrate this process into the electronic health record system.

2. Methodology

2.1. Set-up of the Social Health Work Information Systems Task Force (SHWIS)

As an initial step, a task force was set up, formed by one social health worker from each of the following hospitals: Joan XXIII University Hospital in Tarragona, Vall d'Hebron University Hospital in Barcelona, and Trueta University Hospital. Additionally, the coordinator of the Social Work Unit at Arnau de Vilanova University Hospital in Lleida participated as the leader of the task force. This task force received support from the project manager at the ICS Social Work Coordination Unit, who also spearheaded the implementation of this registration system in the hospital setting. Collaboration was also provided by the head of social work at the Catalan Institute of Oncology in L'Hospitalet and the technical process team of SAP-ARGOS from the Management Directorate of the ICS Information Systems Area. This task force was named the Social Work and Health Information Systems Task Force (SHWIS).

2.2. Planning of SHWIS sessions and operations

A timeline was created to plan the task force meetings. Initially intended as in-person sessions, the meetings were redesigned to adapt to the contextual characteristics associated with the SARS-CoV-2 pandemic (Royal Decree 463/2020). Ultimately, weekly virtual meetings were scheduled, each lasting a minimum of three hours over a six-month period in 2020. These meetings adhered to the planned schedule, with all task force members participating in each session.

2.3. Actions carried out for the design of the SHWP

2.3.1. Review of social variables

The SHWP within the SAP-ARGOS clinical workstation was developed according to the clinical intervention method for individual and family social work (Peña et al., 2012). This method involves a social intervention process based on the experimental sciences model, comprising: 1. Problem identification (following an analysis of the person-situation context); 2. Formulation of the social health diagnosis; and 3. Implementation of the intervention-treatment plan (Otero del Castillo et al., 2021; Mata, 2017).

The design and selection of social variables included in the SHWP were based on collaborative work carried out in 2019 by various social work professionals from the spheres of primary health care, mental health, addiction services and the PADES (Home Care and Support Teams) programme. This group focussed on certain social variables categorised under informative and descriptive perspectives and others based on protective and risk factors (Martínez et al., 2021; Riba, 2017).

Furthermore, two new specific social variables were designed for hospital care as part of the design of the SHWP:

1. Family dynamics: Created to capture resources and strengths as well as limitations or needs in family functioning that could promote a practical response to health situations. For instance, this may include family adjustment levels, boundaries and communication dynamics.
2. Culture and belonging: Designed to gather details about both protective factors and obstacles in managing one's health. This includes language barriers (leading to poor communication), cultural differences in defining difficulties or disabilities, and cultural expectations related to the patient role.

2.3.2. Review and incorporation of additional tools to support social assessment

Specific sections on scales and tools to assist with the social assessment were reviewed and added, along with detailed information on active social resources and benefits at the time of the social assessment (Riba, 2019).

2.3.3. Integration into the SAP-ARGOS electronic medical record

Once the social variables and tools to support social assessment were defined, this information was transferred to the SAP-ARGOS technical process team, who then went about integrating this data into the electronic medical record system. Subsequently, this technical team allowed testing (using "TEST" patients) to be conducted in order to ensure suitable functionality. All identified operational issues were discussed during the weekly task force meetings and resolved progressively.

2.3.4. Preparation of support documentation for the SHWP

A guide to the social health process in SAP-ARGOS and the social assessment conceptualisation document within hospital care were drawn up. These documents are available on the ICS intranet (Benages et al., 2021). The primary goal of these documents is to provide support to the social work team when it comes to recording and conducting social assessments, and to address the social and psychosocial dimensions associated with patients. From a practical standpoint, these documents summarise the overall structure of the SHWP and provide a description of the different social variables compiled during the social assessment, structured as a clinical dictionary.

2.3.5. Consideration of aspects relating to ethics and confidentiality

The development of the SHWP was carried out with due consideration for the ethical aspects of the care relationship. The social data compiled in this tool stem from a dynamic of trust established within this relationship. The principles of purpose (why the information is needed), proportionality (necessary and appropriate information), autonomy (own-

ership of information lies with the individual) and confidentiality (right to privacy) were adhered to (General Council of Social Work, 2014). It is necessary to bear in mind that a medical record is, in essence, an instrument intended to ensure proper care for individuals, documenting all information and materials related to each patient's care process, while ensuring privacy and restricted access to patient data (Organic Act 3/2018). Along these lines, the SHWP design incorporates a dedicated section for the compilation of social data, accessible only by the social health worker.

3. Results

3.1. Description of the stages in the SHWP

Six stages were defined in order to set out a standardised model for compiling the patient-family pathway starting from the first contact with the SHW until the point of hospital discharge. Each stage may be selected independently, allowing the professional to access a specific point in the social intervention as a whole. Within each stage, the SHW can also select the most relevant social variables for their intervention and/or provide a narrative description of the assessed situation. Moreover, the SHWP allows for the selection of information to be automatically incorporated into the patient's medical record, visible to other professionals involved in the patient's care. Consequently, the SHWP structure was organised as laid down in the following section. Stages of the SHWP (see also Table 1):

Stage 1: Initiation of social health work

This is the first stage of the SHWP and marks its opening. In this stage, data such as medical and social history, records of abuse and reasons for opening the SHWP are compiled. It also includes details such as the patient's location and hospitalisation service, admission date, previously open processes and information about the professional making the referral and healthcare coverage.

Stage 2. Social assessment

This stage includes social and psychosocial aspects that support the professional's judgment regarding the individual's social dimension. Specific data gathered here relate to the actual scope within the surrounding environment to enable care to be delivered suitably; for instance: the caregiver's health conditions, access to or availability of material and/or care resources, the family's perceived preparedness to face the illness, and psychological manifestations of the caregiving impact, among others. The social assessment stage is the most extensive and includes the following social variables: 1. Living situation and identity; 2. Support network; 3. Housing; 4. Economy; 5. Employment; 6. Education; 7. Level of training; 8. Legal and administrative situation; 9. Capacity to act; 10. Personal resources and strengths; 11. Services and resources; 12. Benefits; 13. Scales and

tools; 14. Family dynamics; 15. Culture and belonging; and, 16. Comments on the assessment.

Stage 3. Abuse

This is a sub-process within the overall SHWP, only visible if the SHW has previously identified an abuse situation during the initiation of social care. This stage includes a dropdown menu with indicators for recording each type of abuse based on current framework protocols: child abuse, elder abuse and male violence.

Stage 4. Social health diagnosis

This descriptive stage allows the professional to record a social diagnostic orientation, including the action plan, priority setting and determination of decisions about future actions and strategy implementation. It is a dynamic step, allowing the professional to build on it throughout the care process. Accordingly, when completed, it is automatically included in the patient's medical record and the process discharge report.

Stage 5. Social treatment and intervention follow-up

This stage enables the professional to log daily activities associated with the social intervention plan previously agreed upon with the patient/family and the medical team. It also incorporates a section where sensitive information that should not be included in the medical record can be duly detailed. Additionally, this stage allows information about the various social agents involved in the case to be recorded. These may include professionals from external institutions, such as social workers, social educators and child welfare experts, among others.

Stage 6. Hospital social discharge

The final stage in the process collects clinical and social variables at the time of the hospital social discharge. For instance, it records the destination upon discharge and the social work and healthcare professionals involved in the patient/family care. It also includes the type of resource provided upon discharge, both from a healthcare and social perspective. Moreover, the hospital social discharge stage enables the generation of a SHWP social report.

Table 1. Stages and social variables of the SHWP

Stages	Social variables
1. Initiation of social health work	Clinical and social history. Prior open processes. Reason for consultation. Admission date; SHW activation date. Patient location (A&E, hospitalised). Clinical service. Healthcare coverage. Service making the referral.
2. Social assessment	Living situation and identity. Support network. Housing. Economy. Employment status. Education. Level of training. Legal and administrative situation. Capacity to act. Resources and strengths. Social resources used. Economic benefits. Scales and tools. Family dynamics. Culture and belonging. Comments on the assessment.
3. Abuse	Male violence. Childhood and adolescence. Elder abuse.
4. Social health diagnosis	Social diagnostic orientation. Work plan.
5. Social treatment and intervention follow-up	Monitoring of social intervention. Social agents.
6. Hospital social discharge	Clinical data at discharge. Destination upon discharge. Social and healthcare services and resources at hospital discharge. Social discharge report.

Source: Compiled by the authors.

3.2. Recording of activity

The SHWP is also designed to allow the SHW to record their daily activities. To facilitate this, there is a feature called the "activity log" that can be selected as many times as needed and is linked to the patient's location (hospitalisation, A&E or outpatient clinics). This feature makes it possible to view information on daily activities, including the number of interviews conducted, coordination with other services and the number of social reports prepared, among other aspects (see Table 2).

Table 2. Recording of activity

Recording of activity	Initial social work visit. Follow-up social work visit. Inpatient interconsultation. A&E department interconsultation. Home hospitalisation interconsultation. Team meeting. Coordination with primary care centres (CAP/ABS). Coordination with social welfare services. Initial telephone social work visit. Follow-up telephone social work visit. Initial video-consultation social work visit. Follow-up video-consultation social work visit. Initial telematic social work visit. Follow-up telematic social work visit. Post-hospital discharge follow-up. Preparation of social report. Administrative tasks and procedures.

Source: Compiled by the authors.

3.3. Implementation of the SHWP in hospital care

Following a trial period, which unfolded in June 2020, at the end of the month an online training session was created for all SHW at ICS hospitals. The session was led by the technical manager for clinical processes and the head of the project office, with support from various members of the SHWIS task force. Delivered to all professionals, the training session was recorded to serve as a reference for future consultation. Once the training had concluded, during the last week of June 2020 SHW were able to use the tool and access the SHWP in "trial mode" for one week. During this period, all incidents were recorded, addressed and resolved. By early July 2020, definitive access and recording in the SHWP had commenced.

3.4. Creation of a dashboard

In parallel with the launch of the SHWP, a proposal for a dashboard of the processes entered by the professionals was developed in order to view the data. This dashboard constitutes the first attempt to compile a minimum level of standardised data across all ICS hospitals. The information can be gathered individually for each hospital and overall at the corporate ICS level. The dashboard includes the following components: 1. Number of initiated processes; 2. Average (days) from admission date to SHW activation date; 3. Average (days) from SHW activation date to social discharge date; 4. Average (days) from hospital discharge date to social discharge date; 5. Processes initiated by patient location; 6. Cases of violence addressed; 7. Total patients by age group; 8. Hospitalisation service; 9. Gender breakdown; 10. Completed processes; 11. Destination upon discharge; 12. Activity carried out, grouped according to services.

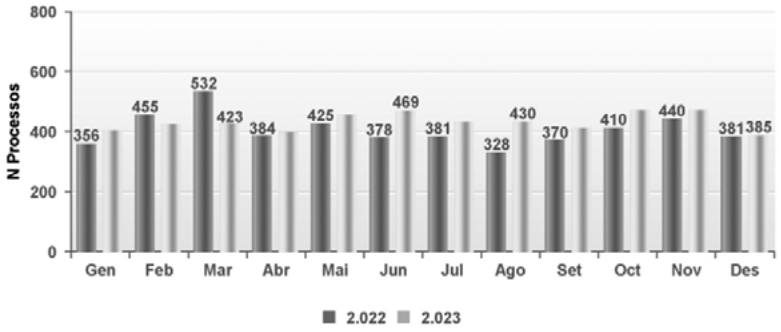
3.5. Assessment of the implementation of the SHWP and description of key data

The assessment of the implementation of the SHWP is carried out by the SHWIS task force. This group has recently expanded to include representation from all hospitals and holds monthly meetings. The goal of this task force is to monitor the SHWP, identifying issues encountered by professionals in their daily practice and proposing measures to improve the system. During the SHWIS follow-up meetings, it was confirmed that the SHWP has been fully implemented across all ICS hospitals, although it was revealed that some hospitals still face challenges in consistently registering social data. To address this, the document conceptualising social assessment (Benages et al., 2021) will be reviewed, updated and expanded this year, as not all social variables for every SHWP phase are fully defined. Additionally, information sheets have been created to support professionals in recording activity (e.g., registering activity when there is no consultation or open SHWP). Moreover, a request has been submitted to the Management Directorate of the Information Systems Area of SAP-ARGOS regarding the need to update the dashboard to incorporate new social data, such as the number of referrals to intermediate care. At the same time, an agreement has been reached within the SHWIS to establish two sub-processes (for paediatric patients and pregnant women at social risk) to compile more specific data for these groups, as the SHWP is currently too generic. Other difficulties identified as a result of the data collection include staff turnover and care workload pressures.

As an example, some of the most relevant data from Arnau de Vilanova Hospital in Lleida, currently one of the hospitals with the most standardised and advanced data recording systems, are described below. The number of initiated processes was 2,159, 4,811 and 5,182 in 2021, 2022 and 2023, respectively. The average number of days between the admission date and activation date was variable: 5.48, 10.21 and 7.39 in

2021, 2022 and 2023, respectively. Across the three years analysed, the highest percentage of initiated processes occurred in A&E and hospitalisation units. In contrast, the home hospitalisation service was the setting with the fewest SHWP initiations. Regarding cases of violence addressed, a progressive increase was recorded: 38 cases in 2021, 72 in 2022 and 94 in 2023. In terms of age groups, in all years analysed, over 55% of the processes were initiated for patients aged 75 and older. For completed processes, concerning destinations upon discharge, nearly half of the patients returned to their own homes: 49.28%, 43.24%, and 46.74% in 2021, 2022, and 2023, respectively. Lastly, regarding the reasons for social work consultations, the data show that the majority of referrals were for advice and information about community resources, followed by difficulties in managing tasks related to the illness process. Together, these two reasons accounted for 85% of all referrals. In order to offer additional examples, figures 1, 2 and 3 below are graphs showing a number of datasets from the dashboard to enable a better understanding of the structure. The figures show data from 2022 and 2023, although difference selections can be made according to viewing needs.

Figure 1. Number of initiated processes



Source: Screenshot from the ICS social health work process dashboard.

Figure 2. Initiated processes according to patient location and cases of violence addressed

Processos Iniciats					
Ubicació del Pacient	**12 / 2.023**	**12 / 2.022**	**∑ 2.023**	**∑ 2.022**	**Dif. ∑ (%)**
Sense ubicacio				6	-100,00%
Urgencies	203	210	2.740	2.611	4,94%
Hospitalitzacio	178	161	2.241	1.982	13,07%
Consultes externes	8	10	198	134	47,76%
Hospital de dia			2	1	100,00%
Hospitalitzacio a domicili			1	2	-50,00%
Total	**389**	**381**	**5.182**	**4.736**	**9,42%**
Situacions de violències tractades					
Violència Masclista	1	1	37	22	68,18%
Violència infantil	3	4	55	51	7,84%
Violència a la gent gran	3		3		
Total	**7**	**5**	**94**	**72**	**30,56%**

Source: Screenshot from the ICS social health work process dashboard.

Figure 3. Reason for consultation

Motiu de la Consulta					
Descripció	**12 / 2.023**	**12 / 2.022**	**∑ 2.023**	**∑ 2.022**	**Dif. ∑ (%)**
Multiples victimes				1	-100,00%
Proces EMMA-EFES				13	-100,00%
Trasplantaments				1	-100,00%
Necessitat de recurs comunitari informacioass	180	131	2.493	1.755	42,05%
Dificultatsgestions vinculades amb el proces	156	202	1.889	2.258	-16,34%
Sol.licitud dintervencio per dificultats a la	30	27	407	480	-15,21%
Proces EFES EMMA	5	6	104	51	103,92%
Maltractaments: de dona, de menors, de person	2	2	79	51	54,90%
Gestantpartera en situacio de risc social	3	5	58	30	93,33%
Risc psicosocial pediatric	1	3	49	52	-5,77%
Atencio social a Nounats amb dificultats del	7		25		
Altres processos		1	12	11	9,09%
Atencio al Dol		1	5	8	-37,50%
Programa especific de Salut Mental			1		
total:	**384**	**378**	**5.122**	**4.711**	**8,72%**

Source: Screenshot from the ICS social health work process dashboard.

4. Conclusions

An SHWP has been developed comprising six stages: initiation of hospital care, social assessment, abuse, social health diagnosis, follow-up and discharge. Its purpose is to document the patient-family pathway through the intervention of social health work during the hospital stay. This SHWP has been successfully integrated into the medical record and it has been determined that it operates appropriately. At the same time, a dashboard has been created to make it possible to view the data compiled by all ICS social work units. The assessment of the implementation reveals that the SHWP has been established in all ICS hospitals, although the recording of data is not consisted across all institutions. To address this, a number of measures are being implemented, including updating the social assessment conceptualisation document (Benages et al., 2021), reviewing the data on the dashboard, and establishing sub-processes for specific population groups.

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