

ChipSoft Solutions

A healthy choice for healthcare IT



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About us

ChipSoft

ChipSoft is an innovative Dutch software company that has focused on providing ICT solutions for the healthcare sector ever since it was founded in 1986. As a PAS and EMR supplier, ChipSoft has become market leader in the Netherlands with a 60% market share in the hospital market.

ChipSoft now has over 290 employees at four offices in the Netherlands and Belgium, and in the near future ChipSoft will be opening an office in the UK.

ChipSoft's PAS / EMR is called CS-EHIS.Net and is developed on the Microsoft .Net platform. ChipSoft has a close relationship with Microsoft and, in 2010, was named Microsoft innovation partner of the year in the healthcare sector.

Complete and flexible IT solutions, a high degree of configurability and overall user-friendliness are the cornerstones upon which ChipSoft has been automating healthcare organisations for over 25 years. ChipSoft now supplies more than 85 healthcare organisations with solid and thorough healthcare IT solutions. Its customers include hospitals, nursing homes, mental healthcare institutions and private clinics. The number of users at each healthcare organisation utilising the same CS-EHIS.Net varies from a few to over 10,000 within University hospitals.



Colofon

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Our objective

ChipSoft has identified the following areas of special attention within the healthcare sector:

- *Care innovation*

The importance of transparency and management of healthcare processes is increasing.

- *Chain of care*

Sharing knowledge about (the treatment process of) the patient across organisational borders and transferring patients to other healthcare providers in the chain of care should be better supported.

- *Continuity of care*

The supply and demand of healthcare should be seamlessly connected. The care process should not comprise any gaps, overlaps or conflicts. Furthermore, future care provision should be assured.

- *Competiveness in care*

The degree of competition in quality and efficiency in care is increasing.

ChipSoft's objective is to contribute to supplementing and realising these areas of special attention by way of its software solutions and apply this contribution across a wide market.

First steps in the UK and USA

ChipSoft is a new player on the English market. Prior to this, it carried out intensive and thorough market research, looking at healthcare organisations, the working methods within those organisations, the demand in the market and the solutions offered by other suppliers. This convinced us of the added value that our products can offer in terms of effectiveness and quality in care. ChipSoft has years of experience with the role that ICT can play in the reorganisation of healthcare systems, which, as a result of the market opening up, makes it more important for care organisations to connect with customers and to manage matters based on the efficiency and quality of care. ►





Product portfolio

CS-EHIS.Net is an information system comprised of functional groups (modules) which, combined, can be used as a single integrated whole. These functional groups can, however, also be used as separate applications in an environment using a different PAS or EMR.

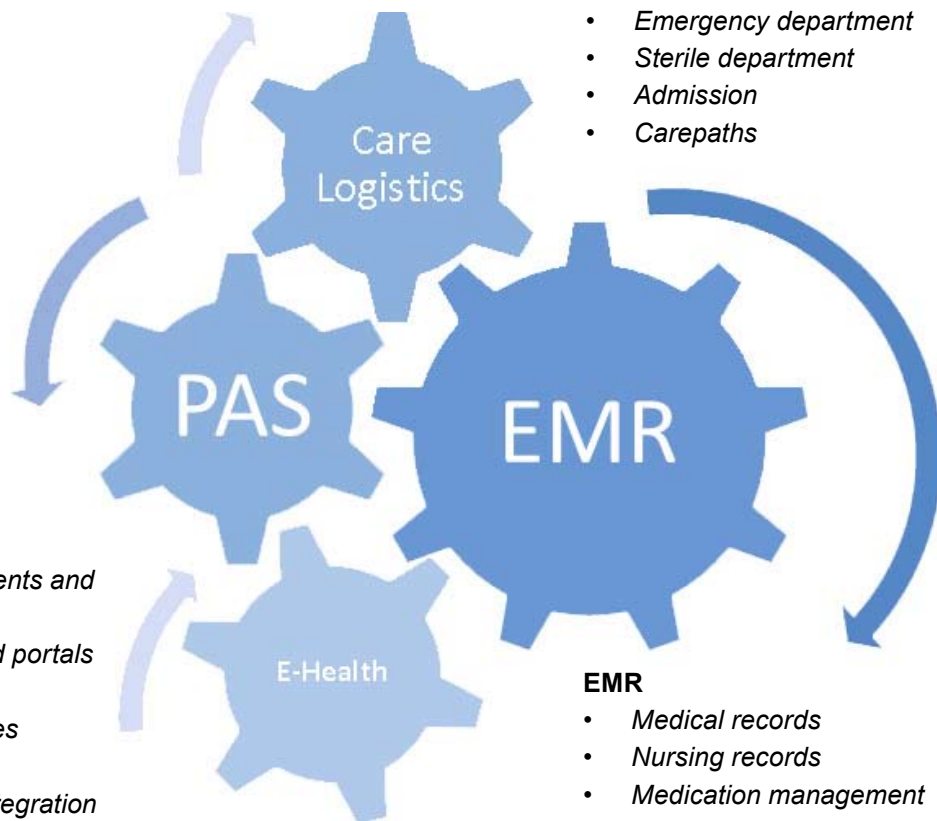
Below is a diagram of the main groups in ChipSoft's product portfolio. All of the underlying applications can be integrated to form a collaborative whole.

PAS

- Patient record
- Medical billing

E-Health

- Portals for patients and caretakers
- Disease related portals
- e-booking
- e-questionnaires
- e-consult
- HealthVault® integration
- Integration with EMR



Care Logistics

- Scheduling
- Operating theatre
- Radiology
- Emergency department
- Sterile department
- Admission
- Carepaths

EMR

- Medical records
- Nursing records
- Medication management
- Decision support
- CPOE
- Imaging solutions
- Patient Data Management



Our team

Implementations

An implementation process is no walk in the park; not for ChipSoft and certainly not for the client either. To ensure that the investment of time and energy and the associated work load for the customer is kept as manageable as possible, ChipSoft makes use of 'best-practice' implementations. These implementations are based on the set-up our clients employ and have proven to be 'the most suitable'.

In a joint implementation process this best-practice environment is aligned to the desired working methods within the healthcare organisation.

In short, every new customer uses (and learns from) the achievements of their predecessors. With over 290 employees ChipSoft can implement a full PAS/EMR by itself, but also works closely with (local) partners. [M](#)

Facts & Figures

Our company

<i>Founded</i>	1985
<i>Employees</i>	nearly 300
- Software engineers	140
- Consultants	120
<i>Situated in</i>	Netherlands, Belgium
<i>Locations</i>	4

Our customers

<i>Organisations using our solutions</i>	87
<i>Caretakers & other personnel using our solutions</i>	over 400.000
<i>Patients registered in ChipSoft software</i>	over 15 million
<i>Software solutions implemented</i>	over 2.500
<i>Type of organisations using our solutions</i>	Specialized hospitals including children's hospitals, university medical centers and psychiatric hospitals
	District hospitals
	General hospitals
	Mental care institutions
	Nursing homes
	Private practices / clinics



Your ideal clinical process

What would you think if all actions and registrations within the clinical process worked together in real time, in an integrated manner? And what if, in your own work environment, you could look at your colleagues' registrations so that you have an insight into the progress and status of your patient at any given point? What would you think if this was completely set up according to your working processes and personal working methods? If this sounds good to you, then ChipSoft has the solution you're looking for.

Experience

As you may have already read at the first pages of this Mediar, ChipSoft has more than 25 years of experience in the field of software development for the healthcare sector. One of the first applications that ChipSoft developed was a management and monitoring system for the Operating Theatre (OT).

Over the years, many related functionalities were developed for such things as preoperative screening, monitoring in the Intensive Care Unit, and instrument tracking. ChipSoft's integrated clinical suite, which is a total package to support all

clinical processes, provides the richest software available on the market in terms of functionality, with state-of-the-art technology. ChipSoft is the market leader in the Netherlands with over 60 successful installations.

The process

Preoperative

Assuming a common workflow, preoperative screening will be carried out before the operation. This is a transparent registration system within ChipSoft's clinical suite that supports the entire preoperative process. In addition to registering patients, recording a range of screening results and calculating scores, various (follow-up) tests and follow-up actions can be scheduled with other specialists. The basic principle at this stage is to immediately establish the required insight into all information concerning the preoperative process. Users can retrieve current information on the patient at any given point and see what stage of screening the patient is at. Pointers or blockades can also be entered if, on arrival in the OT, it is found that the screening has not yet been appro-

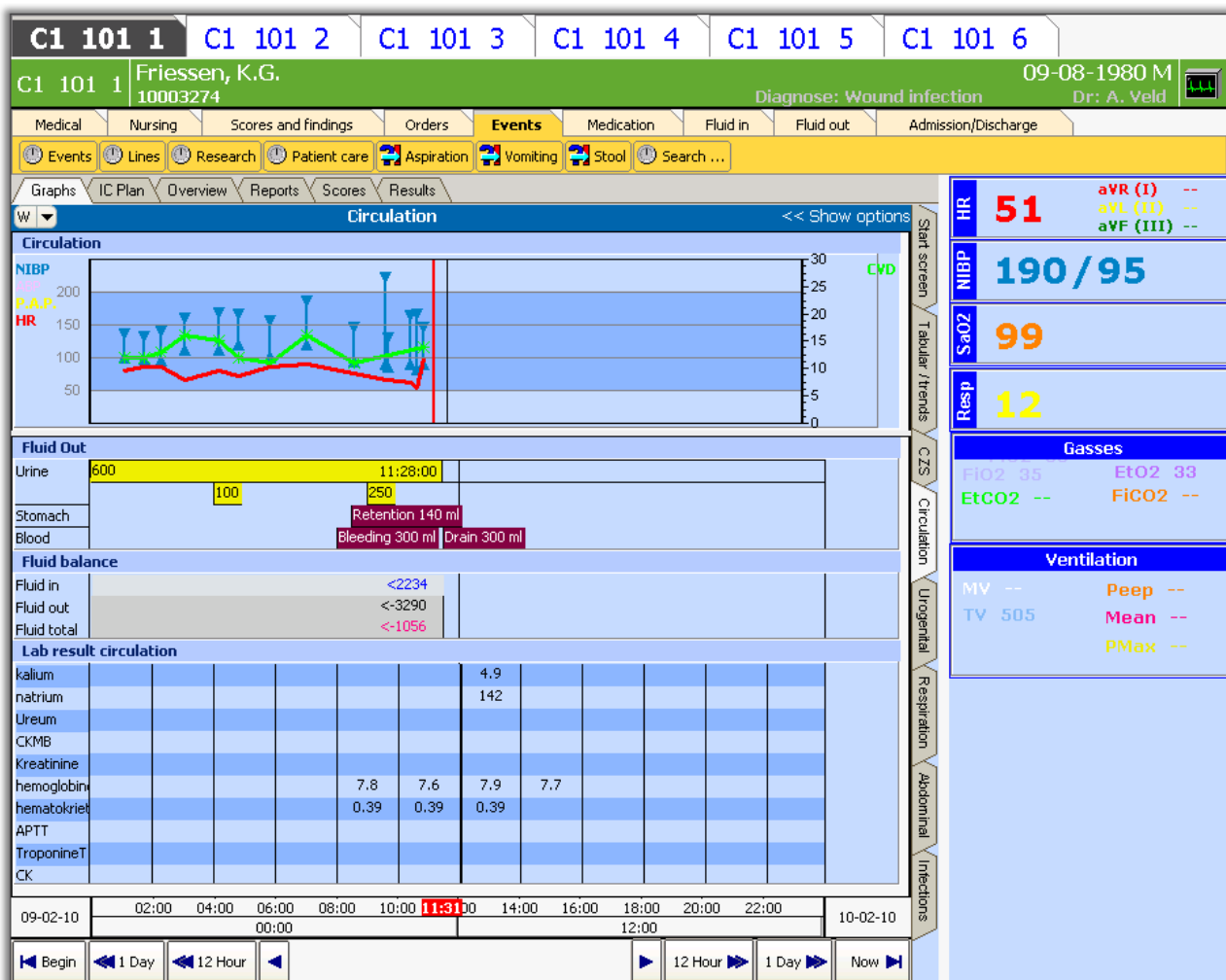
ved. Information that is important to the success of the operation – medical history, allergies, resuscitation policy, etc. – is, recorded and made accessible, increasing safety and efficiency.

At the OT complex

When the patient arrives at the OT complex, various functionalities are activated. The monitoring functions can already be used at Holding, while the first times are being recorded in the OT and staff at the central sterilisation department know exactly what instruments will need to be used during surgery. All of this information will already have been recorded by various users when scheduling the OT session. When scheduling this session, the system supports the planner in drawing up optimally efficient day programmes. When doing this, aspects such as historic

operating times are used for the specialists in question and for the procedure in question. This time, possibly along with the required instruments and the staff, can be copied by planning a standard procedure.

The clinical suite allows staff and specialists to record different pieces of information before (and during) the operation, such as registration times (the time when the patient is called, the time they arrive at the OT complex, the time at which the surgeon started the operation, etc.), but also the systems and instruments used, the actions taken and the staff present. By fully integrating all components a whole range of registration windows can be retrieved and information recorded in a straightforward, structured and user-friendly manner. Once all the information has been entered ►



Example of an Intensive Care Statement

and surgery has been completed, this can be checked and approved, and the patient will be automatically added to the postoperative list. This is the time to generate the operation report. Part of the functionality is a standard report into which all information registered during surgery can be copied. Any changes or additions can, of course, be added at a later date as well.

Data monitoring (PDMS)

Patient information can be collated before, during and after surgery, which is automatically saved using the bed-side equipment, e.g. patient monitors, respiratory equipment and infusion devices. Any changes to the patient's condition can be picked up immediately as a result. Dynamic screens, which are linked to the patient's condition, give doctors and nurses all the information that is required to take optimal decisions. Given that all the relevant information is shown on a single screen, they do not need to look up information in different places and can focus entirely on the patient and the right treatment. This integrated monitoring will automatically lead the user to the next and correct step in the process. The system also signals when equipment is not working or connected properly. A further advantage is that when new results arrive, they are immediately highlighted and can be removed with a single click of the mouse. If a patient needs to go to the Intensive Care Unit,

all of their information automatically follows and any further work is simply carried out in the same environment.

Management information

Reliable management information can be generated because information is systematically recorded in the same database within the clinical suite. These management overviews can be made available to the authorised user as a basic functionality. The hospital generally uses the management overviews to set policy. The budget overview is an overview that is always implemented and which management can use to perform checks of scheduled versus actually utilised capacity of operating theatres, operating sessions and specialists.

Finally

This article is too short to outline all of the functionalities and options but, in a nutshell, it shows that ChipSoft's clinical suite comprehensively supports the entire process, with all the expected advantages: the option to give people or groups rights that link to the workflow, the option to configure things yourself, to make overviews and generate letters, to launch CS-EZIS.Net in other departments in the hospital, and the option to link into your current core system. [M](#)



Nursing system brings structure to cope with the increasing overload

Do your nurses still have clear overview of all tasks assigned to them? Or has the torrent of information and procedures in your organisation's nursing departments also become so immense now that it has become increasingly difficult to see what needs to be done and where the priorities lie? ChipSoft provides a multidisciplinary record solution for nursing that gives nurses as well as doctors a total overview of the care that has to be provided at any given time.

ChipSoft's nursing system is an integrated total solution, which supports carers in an efficient manner with all nursing registrations and scheduling. All nursing registrations concerning a patient can be reviewed within a single system and entries can be made with a minimum number of actions. Key patient details only need to be entered once to then be available to all carers involved. This prevents double registrations, giving the nurses more time for the patient, increasing quality and efficiency.

Well-organised activity scheme

The activity scheme is the heart of the support software for nursing. This schedule allows nurses to see at a glance what treatment they (still) have to carry out for a patient. The basic characteristic of a nursing activity scheme is a combination of working according to protocols and flexible planning with a focus on the individual needs of a patients.

The activity schemes comprise protocol templates, which can be used with a single action when admitting a patient. All activities in the templates are laid out over the different days. Once the plan has been laid out, it is easy to make changes in the plan for the individual patient, if the situation requires this.

Combined care

You can also combine activity schemes. There's for example an activity scheme for a full hip

replacement and a pre- and postoperative activity scheme for diabetics, but should a patient be presented who requires a new hip and is a diabetic, both of the plans can be merged into a combined plan, so that the patient receives the right care for any care diagnoses.

Medical treatment laid out by the specialist for nursing automatically appears back on the activity scheme in the right place, so that the agreed policy is immediately visible to the nurse.

Optimal interaction

Orders to perform certain measurements can be placed in the activity scheme. Once this order has been carried out, a diagram of the results is immediately visible in the record and can continuously be reviewed by specialists. This creates an optimal interaction between the medical staff and nurses involved.

Using this software for nursing, carers can decide on nursing diagnoses according to accepted methodology (NANDA, Gordon, Carpenito, etc.) or according to their own working methods. These nursing diagnoses are what drive the nursing record and give nurses the option to lay out objectives and interventions for the nursing diagnoses established in the activity scheme. The solution offers structured objectives and interventions for the diagnoses established, but you can also add your own objectives and interventions easily.

Only relevant actions

Behind every task in the activity scheme is the relevant action, so that the nurse can determine the right registrations for the tasks without having to look anything up. Registrations such as medical history and reporting are also included in the activity scheme and will be opened when a task has been completed.▶

The medical history can be laid out according to different standard methodologies, such as Gordon, but can also be laid out according to your own methodology. The nursing record provides the option to register the right nursing diagnoses straightaway during admission. The report outlines the patient's general progress and can also include reporting on specific nursing diagnoses.

Different layouts

All of the key measurements for a patient are saved in the record and can be reviewed by all disciplines. The values measured can be registered directly from the activity scheme and are immediately shown in the patient's tabulated diagram. Not only does the nursing system convert the measurements into a diagrammatic overview, it also converts them into a graphical overview, allowing the course of the measurements in relation to time to be assessed.

The various fluid administrations and fluid losses are registered, as are the vital parameters, allo-

wing the system to automatically calculate the fluid balance. Fluid balances can be concluded for each day.

Score lists

The nurse also records a lot of scores. The ChipSoft solution has a large number of score lists that are included in the record and can be scheduled for the activity scheme. Depending on the answers given, the system automatically calculates the patient's score, e.g. an Ulcer risk score or an acute confusion score.

Multidisciplinary

It is not only nurses and specialists who have access to the nursing record; all disciplines involved in the care of a patient can have access to the record e.g. dieticians, physiotherapists and social workers. They can also indirectly register information in this record by recording their findings in their own specific record. These findings will then be automatically available in the nursing record.

	Friday 28-10-2011 Admission day1	Saturday 29-10-2011 Admission day2	Sunday 30-10-2011 Admission day3	Monday 31-10-2011 Admission day4
Reports	<input checked="" type="checkbox"/> Report day <input checked="" type="checkbox"/> Nursing history <input checked="" type="checkbox"/> Report evening <input checked="" type="checkbox"/> Report night	<input checked="" type="checkbox"/> Report day <input checked="" type="checkbox"/> Report evening <input checked="" type="checkbox"/> Nursing history <input checked="" type="checkbox"/> Report night	<input checked="" type="checkbox"/> Report day <input type="checkbox"/> Report evening <input type="checkbox"/> Report night	<input type="checkbox"/> Report day <input type="checkbox"/> Report evening <input type="checkbox"/> Report night
Health perception				
Nutritional metabolic	<input checked="" type="checkbox"/> Sober before surgery	<input type="checkbox"/> Sober before surgery		
Activity exercise			<input type="checkbox"/> Bed rest 24 hours after surgery	
Sleep rest				
Cognitive-perceptual				
Self-perception				
Role relationship				
Sexuality reproductive				
Coping stress				
Tolerance				
Value-based Pattern				
Measurements	<input checked="" type="checkbox"/> Vital measurements <input checked="" type="checkbox"/> Vital measurements	<input checked="" type="checkbox"/> Vital measurements	<input type="checkbox"/> Vital measurements	<input type="checkbox"/> Vital measurements
Woundcare			<input type="checkbox"/> Woundcare	<input type="checkbox"/> Woundcare
Physicians order				
Other disciplines				
Requests				

Example of an activity scheme



As a result, all of a patient's carers have a complete picture of the care required and offered, from the time the patient is admitted to the time they are discharged.

Scheduling shifts

The ChipSoft system also provides options for staff planning, as nursing shifts can be scheduled in this system well in advance. This allows nurses to be assigned to a patient for each department and for each shift. When assigning a nurse, their work schedule is immediately filled in, including the specific care needs and required actions concerning patients assigned to them.

Management info

As the management of a hospital or a department, you would like a total picture of outcome in a department and would like to be able to see this quickly too. Using the ChipSoft system, you can easily retrieve all kinds of relevant management information. For instance, you can see if there is any backlog, and which nurses are (or were) linked to which patients. The system clearly maps out staff and bed capacity as well as scheduling.

Time-saving solution

The multidisciplinary options and the straightforward registration options make Chipsoft's nursing solution a time-saving one that releases extra capacity for the patient and creates a clear overview of the nursing care for other carers. At a time when the torrent of information only continues to increase, the ChipSoft solution brings structure to the threatened overload. [M](#)

CS-Maps: See what's going on!

Can you see the wood for the trees? Or has the torrent of information from the nursing wards, emergency department, OR and Radiology in your organisation become so massive that it is getting increasingly difficult to see what's to be done and where priorities lie? Don't panic! CS-Maps offers a simple solution, clearly mapping all wards and corresponding care requirements!

CS-Maps is a dashboard and schedule all in one, showing entire wards on dynamic maps, including the outstanding tasks with respect to patients, beds and rooms. These tasks are shown on the map in real time and can be started up from this map as well. The program directly saves relevant registrations in the appropriate files.

All information at a glance

For instance, nurses can check the nursing department map to see at a glance that Mr Johnson's medication is due, that Ms Watson has an appointment with the physiotherapist, Mr Young is sche-

duled for surgery, new lab results are coming in for Ms Smith right now, Mr Baker's bed is due for cleaning, and so forth. CS-Maps instantly provides the information that nurses currently have to assimilate. All data in the ChipSoft Electronic Patient Files can be accessed through intuitive icons.

Extremely user-friendly

Medical staff can do more than access information from the map: they can also carry out tasks like admitting, discharging and transferring patients, ordering treatment, scheduling appointments, and so on. The system is extremely user-friendly. To give an example: patients shown on the screen can be easily moved from one bed to another by means of a simple drag and drop.

Excellent privacy protection

Dealing with information flows always entails the risk of sensitive private information appearing in undesired places. CS-Maps eliminates this risk completely as administrators can configure every map by the type of information for the appropriate clinicians. In this way, doctors, nurses and support workers can all use the same map, each with their own personal view of relevant information.

Overview rather than overload

CS-Maps can be used for all imaginable disciplines within care organisations. The system can, for instance, help to clearly map out the emergency department and Operating Theatre and their care-related requirements. It is also exceptionally at controlling equipment logistics within the organisation. CS-Maps provides visual representations of wards, rooms and care requirements, and arranges the information overload that many care organisations struggle with. The program offers a clear overview of the various processes to enable the organisation to focus more effectively on the quality of the care it provides. The available information and tasks can be seen at a glance, so you can treat your patients even better and faster. [M](#)





Nurses of the Dutch hospital *Westfriesgasthuis* work with CS-Maps. They have a perfect overview of all the patients and their care requirements. On the left page: At the ward the nurses use a COW (Computer on Wheels) which tells them exactly where patients are and what their care requirements are.

<p>Marshall, R. 61</p> <p>2</p>	<p>Moore, H. 73</p> <p>3</p>
<p>Campbell, G. 65</p> <p>1</p>	<p>Smith, H. 81</p> <p>4</p>

Bed vacant	Surgery	Pain score	No discharge date	Allergies
Bed occupied	Surgery today	Pain score completed	Preliminary discharge date	Contact isolation
Bed reserved	Appointments	Measure weight	Discharge date	NTRB [COW]
Bed blocked	Labresults (<2 hours old)	Administration	Patient details [COW]	Birthday

Close-up of CS-Maps and its possible alerts. It can be seen at a glance that new lab results are available for Mr Marshall, Ms Campbell has an allergy, Mr Moore's weight has to be measured, and so forth.

Easing the pressure on Eme

The urgent nature of the care provided in the Emergency Department often detracts from the pressure on registration. As doctors and nurses have to decide between immediately providing the patient with care and performing administrative duties, they, of course, choose the patient. Registrations, however, are also very important. To ensure that the patient and administration are given the attention they require, ChipSoft has developed specific software for Emergency Departments called CS-ED. This allows doctors and nurses to register information quickly and in a structured manner, thereby significantly reducing time pressure and ensuring that priorities are always clear and Emergency department logistics are streamlined.

The routing screen forms the axis of the software for the Emergency Department. This screen provides a clear overview of all the patients who are being treated in the department at that time, who are just about to be brought in by ambulance and/or who are sitting in the waiting room. The current status of patients that have been transferred to another department in the hospital are also visible. In addition to providing a clear overview, the routing screen also plays a logistics role; the available rooms are displayed and patients can be moved by one click of the mouse. The status of lab requests, X-rays and other types of inquiries can be viewed for each patient.

Quickly transparent priorities

When a patient arrives in the Emergency Department, the receptionist registers the reason for their visit. Triage then starts, after which a resourceful way of using colour clarifies the urgency of care needed. This allows you to see at a glance which patient has the highest priority. The use of all desired triage lists is supported.

Context-related registration

When registering complaints, doctors and nurses are supported in an efficient manner, as the follow-up steps in the registration process are also tied

in with the information already present. When an indication is made in the patient's record that they have suffered a severe head injury, an illustration of the human head immediately appears, on which the location of the injury can be indicated using a single click of the mouse. This is also the case for patients with burns: an illustration in the system can be used to indicate where the burns are and what percentage of the body has been burned. Using that information, the system then automatically determines the required liquid administration. This intelligent registration support is diagnostic: users are not burdened with information and registrations that are not relevant at that time.

Disasters

Whenever there are significant numbers of patients in the Emergency Department, because of a disaster for instance, nurses can call on the so-called disaster registration. Once activated, additional beds are available in the routing screen and a series of 'temporary' patients are created to expedite registration. This allows the most important details to be entered very quickly, which can be supplemented at a later (quieter) time.

Communication by CPOE

The software for the Emergency Department offers a range of options for treatment communication by Computerised Physician Order Entry (CPOE), giving doctors and nurses the option to quickly use each others' expertise and track laboratory requests, radiology tests, etc.

Record handling

The software supports complete record handling by nurses as well as doctors. Various sections in the record provide access to quick – and yet detailed – registrations. The medical record provides a comprehensive layout with content that has been designed for use in the Emergency Department. As a result, it is very easy to generate a GP's letter or to register a transfer. Doctor's assistants can use the specific questionnaires in the record to diagnose the patient's complaint and record the

Emergency Departments

patient's vital functions and fluid balance. Specific care questions, such as hand injuries and checking plaster, or questions concerning a child's record or a burns record are also worked out in more detail.

Time for the patient

All of the software's functionalities have been designed in such a way that they perfectly suit the context of the work that goes on in the department. Furthermore, many of the parameters are designed so that the user reaches the desired result

with a limited number of actions. Important information only needs to be entered once by a nurse or a doctor and can then be shared by all those involved. By offering functionalities combined in one screen, you don't need to switch between screens. This saves time for those entering the information; time that can be better spent on patients. This software for the Emergency Department provides doctors as well as nurses with quick, comprehensive registration options that provide optimal support for the work done in this department. [M](#)

The screenshot displays the 'Patient tracking location' interface. It features several data tables and a central patient list.

T	Time	Complaint	Age	G
Patient	15:13	Car accident		

T	Spec	Complaint	Age	G	Sign.
Jones, M.		Football injury knee	62	M	
Hall, K.M.		Broken leg	88	M	

T	Time	Complaint	Age	G
Patient	16:09	Broken hip	61	V

T	Time	Complaint	Age	G
Roberts, A.	15:32	Stroke	31	
Jones, J.	16:52	Chest pain	61	
Smith, L.	12:02	heart rhythm disorder	43	
Bakker, J.	14:14	fell off bike	83	
Champion, J.	15:30	ankle injury	41	

T	Time	Complaint	Age	G
Johnson, K.G.	15:10	Hand cut	31	
Adams, L.J.	13:28	Chest pain	31	
Djankovic, A.M.	09:29	fell off bike	56	
Green	18:15	Stomach pain	31	

T	Time	Complaint	Age	G	Spec

Example of a routing screen for the Emergency Department

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