Foundation for Innovation and Safety in Healthcare

Observatory for innovation

Integrated and structured clinical networks

A summary of the best International and national practices for sustainable healthcare

The Management of Chronicity
In the Implementation of the National Plan for Chronicity

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Integrated and Structured Clinical Networks

A new model for the proactive management of chronicity and fragility

All citizens have equal social dignity ….
It is the duty of the Republic to remove those obstacles of an economic or social nature which constrain the freedom and equality of citizens, thereby impeding the full development of the human person. ..”
(Art. 3 Constitution of the Italian Republic).

Reasons for the change

In these last years, we have registered an increase in the prevalence of chronic diseases and conditions of fragility, due to the ageing of the population and the increased exposure to environmental, geographic and social risk factors.

It clearly appears that life expectancy is statistically related in a substantial way to the indices of social and material vulnerability: social factors such as the level of education, the increase in the number of people who are alone, revenue – the increase of poverty and the increase in unemployment, geographic factors such as residing in the so-called “internal areas” and environmental factors connected to outdoor and indoor pollution.

Simultaneously we see an earlier timing of the appearance of chronic diseases: the “poorly lived” years increase while the years with a healthy life decrease, risky behaviour grows (smoking, alcohol, sedentary life, unhealthy diets) and there is a rise in the number of people with disabilities (4.1 million Censis 2016).

Chronic diseases in western countries represent 80-85% of health costs and they cause around 86% of deaths. We see an increase in the so called “intermediate costs” and an overall increase in health care costs (both public and private) with an annual trend of about 2.6% which could bring about a doubling of costs in 2040 and therefore the unsustainability of the NHS.

The sustainability or unsustainability of the NHS consequently depends on how chronicity and fragility are managed. The present management model has shown its limits and inadequacy.

A new model is required.

It appears evident, that the National Health Service (and the Regional one, along with the strategic management of the health agencies) is called upon a new demanding “Priority Setting”, capable of assuring the greatest value for the adopted choices. The science of systems defines this as the capacity to simultaneously offer: improvement in the outcomes of cures (e.g. lower incidence of complications and, therefore, less need for hospitalization), improvement in the quality as perceived by our citizens and containment of costs. If in fact, to the International Agencies, the Italian National Health Service appears to

be an enviable model, to the eyes of a careful observer the system shows evident contradictions and a geographic differentiation. These are such that an “organizational re-

foundation" can no longer be postponed to ensure a different connection among the various welfare settings (between Hospital and Territory and between Hospitals) and a revision of the information systems to "allow" the transfer of data and images and promote adequate monitoring of the results and costs of the care (reporting system).

The new model must allow the elimination of any source of waste and unsuitability while facing the shortcomings of an organization created when the epidemiological framework and the possibilities for cures were very different, and this must be done, on the one hand, by seeking an economic sustainability of the system while avoiding dangerous cuts in technologic innovations and, on the other hand, by remaining anchored to ethics which impose services based on the fairness of the care and the participative sharing both for professionals and citizens.

There are numerous contributions available in the literature, both on a national and international level, aimed at: favoring the overcoming of fragmentation (silo type) of the welfare and health response, guaranteeing individual health plans (PAI) – i.e. integrated and personalized care plans – and along with this, the concentration of specialist knowledge in the hospitals and the multi-discipline teams for the taking in charge of and maintaining the continuity of the proximity care in the territory.

Today there is wide agreement that the role of primary care (General Practitioners and Free Choice Pediatricians) is central, and has been rendered more operative and efficient today by the new organizational models contemplated (and rendered mandatory) by L. 189/2012 (AFT – UCCP/Houses of Health) and by a multi-professional approach, keystone of the answer to complexity, through the essential support of the community nurse and the integrated social services between the ASL (Local Health Company) and the Municipalities.

Furthermore, the professional role of the pharmacist is significant, whether they operate in public or private territorial pharmacies – real strongholds that are actively present and widespread even in the poorest areas – to contribute to favoring the correction of lifestyles, the continuity of cures and, in particular, adherence to therapy, control of the interaction between drugs and the adverse reactions along with the correct use of medicines and Devices.

The model of the "Integrated and Structured Clinical Networks" is proposed as a new method for the management of chronicity and fragility.

In agreement with the indications of the National Chronicity Plan, the Model represents the practical fulfillment of "Population Health management" – which evolves from the principles that underpin the *Chronic Care Model*, already tested positively – and is based on an approach of an initiative medicine – proactive medicine for the management of chronicity, complexity and fragility.

The Italian experience in relation to the Chronic Care Model and the results of the American system of Kaiser Permanente have in fact proved that it is necessary to move from a "standby medicine", understood as the willingness to take care of the citizens only when the latter think that they require cures, to a "proactive initiative" assistance method, by defining prevention paths, early diagnosis and programmed follow-ups for the citizen.
Standby Medicine, which is the present management model of chronicity and fragility, has caused, on the one hand, the absolute lack of control in the progression of chronic diseases because we passively await the slow but inexorable evolution of the disease and the appearance of the complications, as we must face them "a posteriori". On the other, it has caused the impossibility of optimizing the care processes, both under the profile of the obtainable health results, and of the impossibility of optimizing costs, as there is a considerable variability of actions in the management of the chronic or fragile patient, which is highly independent from objective factors such as the seriousness of the disease, the determiners of social distress and/or the ease of access to cures, since these actions depend on the subjective perception of the need that each individual has.
Proactive Medicine – based on initiative is, in its essence, a methodological approach to the taking in charge of the treatment process of the patient, characterized by the interaction between the patient, who has been made an expert, and a multi-professional team and it consists in the periodic active recall of the patient to undergo educational, clinical assistance activities aimed at correcting lifestyles, empowerment, early diagnosis and monitoring of overt chronic disease in order to slow down their appearance, evolution and prevent complications.
The model of integrated and structured clinical networks operates schematically according to four essential guidelines - Pillars:
- Create a link of well-structured integrated networks between primary care doctors and the territorial and hospital specialists for proactive assistance pathways of chronicity.
- Reorganize the Territory and organize the Territory - Hospital - Territory care continuity.
- Achieve improved programmed mobility of the specialists within the network of hospitals.
- Achieve a link among the assistance settings through Information Systems that are capable of assuring (clearly with the consent of the assisted person) the transmission of the clinical dossier of the medical reports, the images, the laboratory data, the tele-consultation and the televised consultation between hospital doctors and territorial doctors with the hospital specialists of reference.

For what concerns the first point, it is necessary to start from the identification of the specific population, for whom to create the necessary answers.

The easiest method is that of creating Functional Territorial Aggregations (FTA), mono-professional aggregations of General Medicine/Pediatrics foreseen by L. 189/2012, in fact, by aggregating the general practitioners, we automatically identify the community of patients who have chosen them on the basis of a relationship of trust. Furthermore, by identifying by name the primary assistance doctors and those of Assistance Continuity of the FTA we create the "basic core" of the multi-professional team. By operating in the common premises of the FTA provided with office personnel, first level diagnostics and with an FTA information system capable of allowing the consultation of the health records of the citizens belonging to the same FTA, while respecting the Privacy laws, and integrated with all the other professional figures, the team will guarantee health related answers to that specific population.

Within the specified population, one must identify the people who suffer from the main chronic diseases: neurologic diseases (Parkinson's, Alzheimer, Multiple Sclerosis), rheumatoid

and osteo – articular diseases (Rheumatoid Arthritis, psoriasis in primis), diabetes, heart diseases (especially cardiac insufficiency), respiratory diseases (serious asthma and Chronic Obstructive Pulmonary Disease), oncologic diseases (follow-up), kidney diseases (chronic kidney failure), infectious diseases (e.g. HIV), but also the low hospitalization pathologies for example, in the area of mental health, addiction and palliative care.

One must also identify the conditions of social-assistance disadvantage.

In relation to every defined pathology, one must define a Diagnostic, Therapeutic and Assistance Pathway (DTAP) which defines "what to do" and every how often, on the basis of a "Real Life" reading of the Guide Line indications; at the same time allowing to identify the "quantity" of connected services, and also the "who does what" according to a ***cost-effective*** criterion among the various professional figures in the team, which must keep in mind the seriousness of the pathology in each individual. What follows is an integrated first-second level pathway, where the ordinary management of the pathology (primary Approach) is assigned to General Medicine and the base Team and where the when of the intervention of other professionals is defined, Specialists in particular.

The target population (identified through the archives of the GPs and the company databanks) is stratified on the basis of the gravity/complexity, so identified, "same-gravity" sub-populations for the cost/effectiveness of the activities.

Every single citizen must undergo a multidimensional health and social assistance evaluation on the basis of which the Individual Assistance Plan (IAP) will be created, and which will take charge of the person and not of the pathologies. It will be formulated by the multi-professional Team by taking into account of the DTPAs of the single pathologies of the patient and of the presence/absence of social-assistance problems, and correctly assessing the taking in charge method on the basis of the intensity of treatments and the appropriate assistance setting.

In fact, by keeping in mind both the health and social problems, all the way to non-self-sufficiency, it is possible to identify two macro groups of patients corresponding to two models of taking in charge based on the intensity of the treatments and two different assistance settings:

1. Patients with one or more chronic pathologies without social-assistance problems, who will be taken care of on the basis of an individual assistance plan essentially based on the "synchronization" of the DTPA of the single pathologies which affect the patient regarding which the appropriate assistance setting is represented by the common locations of the FTA, provided with personnel and diagnostics where a multi-professional team operates

2. Patients with chronic pathologies associated with social-assistance problems who will be looked after on the basis of and individual assistance Plan formulated on the basis of the results of a multi-dimensional health and social-assistance evaluation for which the appropriate assistance setting is represented firstly by their own domicile, appropriately "outfitted" by the institution of Integrated Home Assistance (IHA) or by the Residential System, where the domicile is not appropriate or lacks the formal or informal support network.

The formulation of the IAP and its supply will be carried out by a multi-professional team, whose nucleus is represented by a general practitioner (primary assistance and continuity of assistance

– tomorrow as a single role), a Nurse and Social Assistant to whom will be added, when required, a Specialist, Internist/Geriatrician or from the branch, a Physiotherapist, a Dietician and other professional figures that operate on the territory. The clinical coordinator of the Team is, "over time and also commissioning" the general practitioner chosen by the patient.

The interaction between specialists and primary care doctors will be rendered easier by an organization (all internal to the FTA) which identifies, among the family doctors those who have a special interest in some of the above mentioned pathologies (not "mini – specialists" but "internal consultants", who don't interfere with the trust relationship and who do not see the patients directly in clinics dedicated to the pathology). The so called "expert doctors", will progressively develop a practice of comparison and growth in the professional competencies required for the specific assistance pathway/*first opinion* towards their general practitioner colleagues of the FTA, in the situations of doubt or difficulty when managing the path and/or the connected diagnostics – but also a capacity for the transfer/implementation of the new knowledge according to a horizontal model and one of comparison inserted in the new "experience" type training path ("coach" of the FTA and "engine" of continuous updates).

The system to access the instrumental tests and the ensuing specialist examinations, will be carried out not long before the taking into charge (where we prescribe and we book), even in various outlying areas and following classes of priority which diversify the first visit (to be done rapidly because it is necessary for the diagnostic-therapeutic decision) from the control visit which requires a dedicated platform based on the forecast of the quantity of services required and connected to the IAP. Today the two very different prescription requirements "end" into the same container so that the 2nd (the control) – which represents from 50% to 60% of the requests – obstructs the 1st which – evidently – expresses a right that cannot be underestimated or slowed down by long waiting times.
A fundamental and essential characteristic of the multi-professional Team in the model of integrated and structured clinical Networks is the nominal identification of the various components pertinent to each FTA.

This approach finds a valid support in social sciences through what is defined, at the beginning of the nineties in the United States, as Communities of Practice (E. Wenger), i.e. groups of people who, although having different roles and competencies, aim at a common target with a mutual commitment and a shared repertory, in which learning consequently becomes a continuous and collective social phenomenon instead of an exclusively individual and mental fact.

This new vision implies a strong correlation between learning and identity; learning inside a community means learning to be and act as a member of the community, in our case intra and inter-professional. This way, we build new collective identities and professional competencies, which transform the capability of the professional to operate alone or by functional role, into a versatile identity capable of holistic vision and who can consult with others, take charge of the problems, while respecting the individual specializations in a synergic way.

The second pillar of the integrated and structured clinical networks model is represented by the re-organization of the Territory and the "structuring" of the care continuity relationship between the Territory and the Hospital, with the aim of making available a range of instruments – a network of structural locations, all intended as necessary "settings" for delivering the answers integrated with the needs issued by the multi-professional teams for a specific constituency of users in order to give an efficient and effective answer to the needs of the citizen.

From this point of view, the "Functionally Strong District", i.e. a District intended as a company structure having an organizational, managerial and facilitating role for the carrying out of the social and health activities within a territory – a homogenous community of citizens where the participation in governance is carried out.

The District is therefore the setting where the need and health demand of the reference population is evaluated; it has a priority role of protection and programming, and strengthening the role of governance, while the integrated territorial social and health activities are assigned to the teams, which in using the various territorial assistance settings rendered available by the same District, carry them out while assuring an authoritative taking in charge "over time", even connecting with the hospital activities (also commissioning) guaranteed by the same District.

The so defined District being the interface between the LHC (Local Health Company) and the community represents the organizational reference point capable of transmitting to the citizens the trust in the quality and security of the services supplied in the territory. It assures the Hospital – Territory continuity and favours the social-health integration and, for this aim, it adopts a system of targets and indicators to evaluate the efficiency, the quality and the safety of the assistance supplied.

Furthermore, the District represents the point of reference for home care (IAD, palliative cures) and the network of the various territorial social-health units – Residential systems, Intermediate Care – which includes, along with the health clinic activities and the residential cures, social-health units for prevention and care in specific areas (mental health, addictions).

It is therefore necessary to proceed with a re-examination of the IAD model, which must be able to give answers, in real time 24 hrs. a day, to a revision of the beds in the AHRs and in the intermediate health structures, both in number and in care intensity, by creating, wherever possible, new types like the Continuous Assistance Module (Co.A.M.), which is a module of territorial beds, which are located in the Hospital. The organizational management of which is handled by the territorial nurses and the clinical management by General Medicine (patient's general practitioner and clinical coordinator of the structure of general medicine), with short-medium hospital stay, but with a high intensity territorial assistance, with the aim of reducing the days of hospital stay by hastening discharge and avoiding improper hospitalization of chronic patients who have a sudden worsening.

The indispensable element to guarantee the effective continuity of care, Territory – Hospital – Territory, is the creation of an evaluation facilitation and planning organism represented by the Agency for the Hospital Territory Continuity (AHTC) in each District. The Agency's main aim is of favoring the interaction between hospital team and multi-professional territorial team to manage the "difficult discharges" efficiently and effectively, often the reason for a re-admittance within the first 30 days, when it is not correctly programmed, and to avoid improper admittance of complex chronic patients.

The third pillar of the model of integrated and structured clinical networks, i.e. the improved – programmed – mobility of the specialists in the network of Hospitals, must be created through a specialist projection in the various nodes of the network. This would also make it possible for the territorial or zonal Hospitals of reference (the so called "Small Hospitals", a name that must be changed), which give the elderly and/or chronically sick an irreplaceable proximity reply, to make use of a continuous branch update. At the same time, the referral to specialists will be consolidated, therefore becoming ever-more horizontal (at the same level), going beyond models which inevitably tend to create 1st, 2nd, 3rd class hospitals.

On the contrary, in the network of hospitals, appropriate activities must always be carried out, also guaranteeing an adequate saturation of the productive factors (SS.OO., PP.LL. technologies, fixed costs), to which follows a (proven) reduction in costs!

Following this logic, the Emergency Urgency System especially stands, it can guarantee, along with the promptness of action, the identification of the safest (and better equipped) hospital location to which the patient should arrive (e.g. in the case of heart attack: not the closest hospital!)

The re-organization of the hospital network is also aimed at identifying a hospital of reference for every FTA that "supplies" the team of specialists identified by name, and the Day Service activities for diagnostics and specialties foreseeable based on the IHAs.

Finally, the fourth pillar is represented by the need to support the model with a sturdy ICT system, capable of guaranteeing the use of the clinical records, the test results, the images, the lab data and the tele-medicine activities among the components of the multi-professional team and between the Territory and the Hospital.

Furthermore, the information systems must also allow a correct identification and layering of the target population. Simultaneously, they should help the system identify the trend of the assistance activities with respect to the targeted results and the adopted processes, by also highlighting cases of "overtreatment", as well as of "underuse", which constitute signs of slackening or delay in the taking into care, chosen by the community of professionals.

The phases for the fulfillment

The practical fulfillment of the model of integrated and structured clinical networks necessarily passes through the following steps:

- Reorganization of General medicine – Primary Care, by creating the Territorial Functional Aggregations, with the integration between Primary Assistance and Continuity of Assistance and the creation of an FTA information system for the consultation of the clinical records
- Identification of a specific population represented by citizens who have chosen the doctors of the FTA, and for which population build up the health responses
- Identification of the chronic pathologies, by defining the DTAP for each one and the conditions of social and health distress, therefore, by identifying the target population and by proceeding with the stratification of the "same-gravity" sub-populations for the cost/efficiency evaluation of the actions
- Management of chronicity and fragility by adopting the methods of initiative medicine,
- Creation of a multi-professional team for each FTA, in which, next to each general practitioner – clinical coordinator of the team and person in charge of the IAP of the

patient “over time” - Specialists, Nurses, Social Assistants and other professionals will be identified by name

- Definition of the ICT instruments, for the assessment of the multi-dimensional health and social assistance, then the definition of a “pro-active” Individual Assistance Plan for each patient, which takes into consideration the DTAP of the single pathologies from which the person suffers
- Structuring of the FTAs, identifying common locations staffed by office personnel and equipped with first level diagnostics and identification in each FTA of “Expert” General Practitioners, for the care of patients suffering from one or more of the chronic pathologies, but who do not have social-assistance problems
- Re-organization of the Territory while rethinking the District as a “strongly functional District” and redefinition of the system of IHA and of the Residential-Intermediate care which must become “instruments” available to the team for the care of patients with chronic pathologies associated to social-assistance problems
- Re-organization of the hospital system as a same level network in order to identify a Hospital of reference for each FTA/District
- Planning and creation of an information system which enables the exchange of social-health documents and the consultation of health records, the computerization of the multi-dimensional evaluation and the creation of an “IT dashboard” for the definition and subsequent application of the IAP, in support of the entire model.

Summary

Specific aspects of the integrated and structured Clinical Networks

- *Management of chronicity and fragility with initiative medicine methods*
- *Multi-dimensional health and social assistance evaluation of the single patient, with attention to the person and not to the pathologies*
- *Definition of the cures on the basis of the Individual Assistance Plan, which keeps in mind the DPTA of the single pathologies, with the aim of personalizing and humanizing care*
- *Provision of the care by a multi-professional team nominally identified*
- *Clinical responsibility of the patient by the “over time” General practitioner*
- *Re-organization of General medicine – Primary Care into functional Aggregations and their “structuring” with common locations, personnel and diagnostics*
- *Re-organization of the Homecare and Residential-Intermediate Care system which must become “ instruments” available to the team and “structuring” of the continuity of Hospital - Territory care*
- *Re-organization of the hospital system, as a “same level” network, with the aim of identifying a Hospital of reference for each FTA*
- *Creation of a sturdy ICT system to support the FTA, of the management of*