

DATA COLLECTION: THE BASIS FOR ALL NURSING INTERVENTIONS

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Introduction

The collection of data is a professional nursing act forming the basis for all caregiving. Every element of nursing care flows from it. It is considered to be at the core of quality health care and serves initially to determine the required treatment. Subsequently, it serves to evaluate the course of the treatment in comparing the results with the initial data gathered.



But it is also useful in protecting the caregiver in cases of infection or the manifestation of violent behaviour. Forewarned is forearmed.

Gathering and recording data contributes to the visibility of the nurse's role. Moreover, in systematically gathering the information describing the state of the patient upon arrival and during the evolution of the illness and the treatment, the nurse demonstrates the pertinence of the planned interventions and the type of results obtained.

The objectives of collecting data

The collection of data constitutes the first logical step in a clinical approach. It enables the nurse

- to situate the problems of the patient and make a diagnosis
- to plan the necessary interventions
- to assure clinical surveillance during the provision of health care
- to determine the immediate needs of the person

The collection of data

- The collection of data is a professional nursing act which forms the basis of all health care interventions.
- Every element of nursing care flows from it.
- It is considered to be the fundamental element of quality health care and serves initially to determine the required treatment and later to evaluate it.
- It also serves to protect the caregiver. An infection problem or the possibility of violence can perhaps be prevented.
- By methodically gathering information describing the state of the patient upon their arrival and during the course of treatment, it demonstrates the pertinence of the postulated treatment and the nature of the results.

- to detect their global health needs
- to evaluate the progression of their condition
- to evaluate the treatment received
- to contribute to the medical decisions and the multidisciplinary team via the communication of information.

The notion of sound judgment

The notion of using sound judgment underlies the recourse to data collection. It refers to the professionals' commitment to competence. Since caregivers are at all times responsible for the acts, they are imputable for the decisions made in the exercise of their functions. They are thus obliged to use the decision-making process as well as the practices conforming to the actual state of scientific knowledge.

Data gathering : the notion of sound judgment

- The notion of sound judgment refers to the concern for competency.
- It is important because caregivers are always responsible for the acts that they carry out and are imputable for their professional decisions.
- Consequently, they must use the process of decision making and practice in conformity with actual scientific knowledge.
- This is why our actions must be imbued with sound judgment which underlines the responsibility of basing our treatment on solid data gathered using an approved process of examination and based on methodical observation, which means proceeding in a complete and precise manner in the collection of data.

For this reason they must exercise sound judgment, which underlies their responsibility to base their caregiving on solid data gathered using an approved process of examination and based on methodical observation that is, to proceed in a complete and precise manner in the collection of data.

This notion of sound judgment determines even the pertinence of the nurses' clinical examination which enables the correct evaluation of the condition of the patient, establishes the priorities

and objectives of the appropriate treatment, enables one to follow the evolution of the situation and to transmit to the members of the multidisciplinary team the verbal and written information, in a rigorous and exhaustive manner.

Observation – the foundation of data collection

Observation is a deliberate process of concentration and attention on the subject that one wants to investigate further and analyse. It can be defined as a focused and attentive look at a person or situation. It is fixing one's attention and concentration in order to grasp certain details and monitor their evolution objectively, without judgment or the desire to modify them¹. It is based in the first place on the five senses to capture information but also on several intellectual abilities

¹. Scientific method: http://en.wikipedia.org/wiki/Scientific_method

in order to assess volume, form and intensity. It brings into play not only our capacity for attention but also our comparative and deductive memory which serve in the recognition of phenomena from previously observed elements. Whatever the method and the tools employed for data collection, it is always based on observation.

When we observe a patient, we participate in the elaboration of the history of their problem, its treatment and the progression of their situation. We are thus part of the scientific therapeutic process. The nurse's capacity to observe is thus a primordial quality. Some people have a natural ability to observe and recognize important details but carrying out a methodical observation can be learned and the nurse must learn it.

OBSERVATION: SOME BENCHMARKS

- Get a global first impression of the person or the situation.
- Seek a detailed perception of the facial expressions, attitudes and behaviours.
- Enlarge your knowledge of what the person is experiencing, their antecedents and their support network.

The first rule: objectivity

The first rule is to be **objective**, which means being as emotionally neutral and impartial as possible. Judging, approving or seeking to modify an individual's behaviour or manner is not observing. Observing is simply using our senses to capture a visual, auditory, or tactile impression. When confronted with a situation, our normal reaction is often to pose a judgment and unfortunately, to develop from the start tenacious biases which influence our behaviour. Objectivity requires for example, that judgment be suspended during the period of observation and reinstated once we have gathered more complete information

How does one observe?

Humans are complex beings and references are needed to grasp all of their subtleties. Going from the general impression to the particular details is considered a proper method for observation. It is an active process made up of several stages which are presented in the following table.

What data should be collected?

In addition to the data collected upon the arrival of the patient and information of an urgent nature, the data gathered are diverse. They may be **subjective**, that is they regard what the patient says or complains of. They concern their discomfort, their pain, their worries and their expectations. This information is always very important in order to orient the nurse in the

clinical judgment. Certain information is considered to be **objective**, in that certain data result from the caregiver's observation or examination. They include the observed signs and symptoms, the patient's reactions, the treatments established and all that is happening around them: doctor's visit, etc.

Observation process

- **Step 1: Passive reception of information.** The eye captures a visual image of the person or situation. The ear perceives speech and the tone of voice. Touch during the physical examination reveals diverse sensations: heat, induration, roughness, etc.
- **Step 2: Active verification of the information:**
 - a) self-interrogation by the caregiver: "what do I see, hear, understand?"
 - b) questions, reformulations.
- **Step 3: Validating perceptions:**
 - a) questions to clarify details
 - b) patient's behaviour or words confirm or contradict what I think I understood.
- **Step 4: Interpreting our perceptions: clinical diagnosis.**

They are considered to be **actual** when they describe what is occurring in the present or has just occurred in the moments preceding the arrival of the patient. They are considered **past** if they refer to what has occurred in the past whether recent or remote. Moreover, certain data are personal whereas others may relate to the family (family illnesses, psychological or economic context). The data related to the

past and those related to the family are what we call **antecedents**.

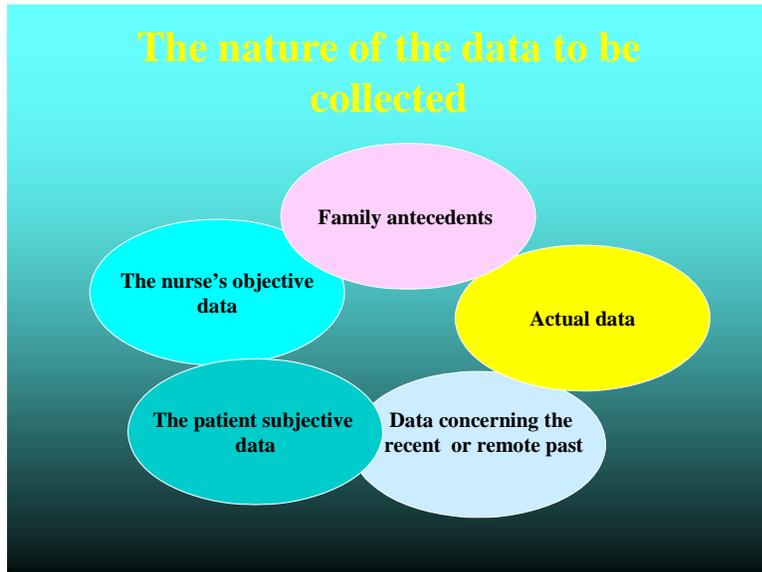
Data to be collected during the first meeting

Observation of the patient is crucial upon their arrival at the hospital or during the first meeting with the nurse in any health care unit.

The caregiver forms a strong first impression of what the person is experiencing. What the nurse notices at this moment must be noted as very often first impressions will orient subsequent clinical judgments and interventions.

During this first contact, the nurse sees the facial expression of the patient, their posture, their bearing and receives their complaints and confidences. The nurse observes, questions, interprets what the patient presents and already possesses the elements which will orient a judgment of the situation and establish a therapeutic plan.

This first impression is important but it must not bias our judgment. Influenced by anxiety, fear or pain, the patient who arrives in an unknown milieu might manifest aggressive behaviour which is not habitual and which they may later regret.



Amongst the manifestations which attract the attention of the nurse, the facial expression of the patient is most revealing of what they are experiencing and feeling. Thus we must stop and ask ourselves what it signifies and what attitude we should take^{2, 3}.

The fundamental aspects of the collection of data

The information gathered by the caregiver includes all the aspects of their experience of health/illness. The nurse must gather the data bearing on their situation, its relationship to their health problem and on the conditions and repercussions of this problem on their daily functioning and on the satisfaction of their needs. These data must enable the nurse to know what one must do immediately and then to plan the therapeutic treatment. For example, the data will enable the nurse to know:

- If the person has respiratory problems? Skeletal problems? Can they get up, walk? With what precautions? Do they need to take up a particular position?
- Are they in pain, anxious? What psychological support do they need?
- Can they eat, drink and how?
- Are there particular precautions which must be taken to eliminate? Can they go to the bathroom with or without help?
- Are they agitated? Confused? What do we need to foresee in order to protect them?
- Is there a risk of aggression?
- Can they speak, express their needs?

The first contact

- This gives us a global vision of the person, their facial expression, physical aspect, major difficulties, the degree of suffering and their most obvious behaviour.
- This first impression may be useful while we await further information.
- But it may also be a trap which creates a bias in our perceptions.

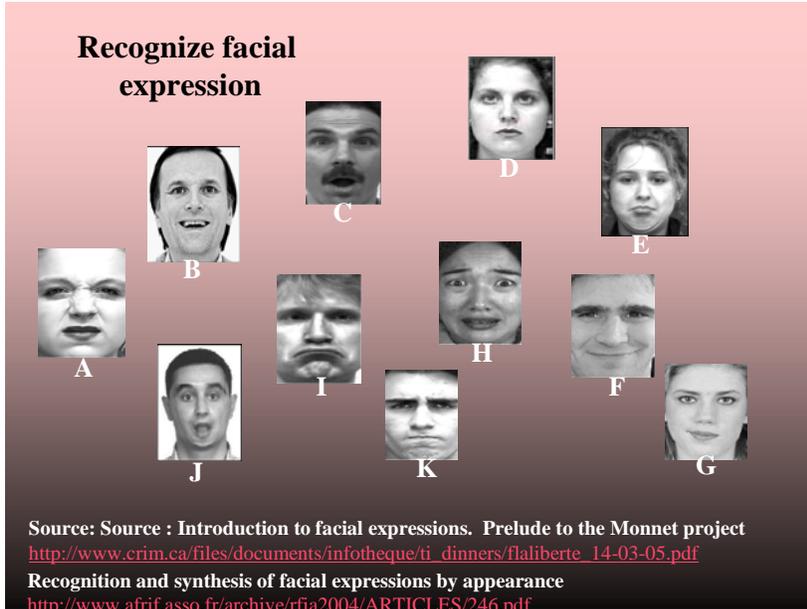
². France Laliberté. *Introduction aux expressions faciales – Prélude au projet Monnet*
http://www.crim.ca/files/documents/infotheque/ti_dinners/flaliberte_14-03-05.pdf

³. Bouchra Abboud, Franck Davoine et Mô Dang. *Reconnaissance et synthèse d'expressions faciales par modèle d'apparence* : <http://www.afrif.asso.fr/archive/rfia2004/ARTICLES/246.pdf>

- Does one need to contact their next of kin in order to inform them or ask for their help?
- What does the patient need to know at this moment?
- Do they have someplace to go on discharge?

Their lifestyle

It is also important to know the patient's customary behaviour or condition for these will have repercussions on their health and the possibility of healing. It is useful to know:



- Do they smoke? How much?
- What are their eating habits? The quality of their food, diet, appetite?
- The quality of their sleep? Insomnia, nightmares?
- Do they have problems urinating or passing stools?
- Is there evidence of alcohol, drug or medication abuse?
- Is their lifestyle active or sedentary?

- What medication are they presently taking and for what problems?

All these data enable the nurse to identify certain problems and guarantees the satisfaction of the needs of the person and assures the quality of their well-being during their stay in the health care centre. The data should be collected and registered on the forms provided. Let us not forget that data and interventions which are not written up in the files have no legal value.

The methods of data collection

Observation is basically the method used to gather data. It is done by different means but whatever the method employed, the interview with the patient is essential.

Answers for the interpretation of facial expressions:

- A) Disgust
- B) Cheerfulness
- C) Fear or astonishment
- D) Anger, withdrawal
- E) Sulking
- F) Good humour
- G) Doubt or indifference
- H) Great fear or intense pain
- I) Aggressiveness or rejection
- J) Astonishment
- K) Interrogation or discontent

The interview to collect information

The interview includes the conversation which the nurse establishes on the arrival of the person in order to gather the information which is needed to plan their treatment. However, it is not the only moment when the nurse can proceed in gathering information since she must observe the patient during their entire stay in the health care centre.

The efficacy of this exchange is based on several factors. The main ones being the capacity of the nurse:

Information gathered on arrival

- Note the context of the admission: emergency, on a stretcher, in a wheelchair, walking, accompanied or not, etc.
- Evaluate the immediate risk. Physiological state: shock, bleeding, pain. Psychological state: aggressiveness, violence towards self or others.
- Note the state of consciousness, orientation, contact with reality.
- Note the ingestion of substances such as: alcohol, medication, drugs, other.
- Write up the recent history of their problems: when did the symptoms start, what form did they take, duration, violent behaviour: mutilation, suicide attempt.
- Note the level of autonomy of the person for their basic needs: to get up, eat, wash themselves, go to the toilet.
- Ask for the name of a person who can be contacted in case of need.

- to listen with respect
- to manifest empathy in order to establish a relationship of confidence
- to create with the person a therapeutic partnership
- to use questions in order to gather the information needed.

The nurse may use a guide in order to orient the observation process. It will serve at the same time as the form for recording the data. Let us remember that one should avoid writing during the entire conversation. The ideal is to take a few notes which will serve to recall the useful details in order to fill out the form after the interview. In this way, the attention of the nurse remains centred on the person and the communication is not interrupted.

The clinical examination

- The clinical examination serves to objectify the data gathered verbally during the interview.
- It is an important part of the process of data collection.
- In it one finds different methods of observation and assessment.

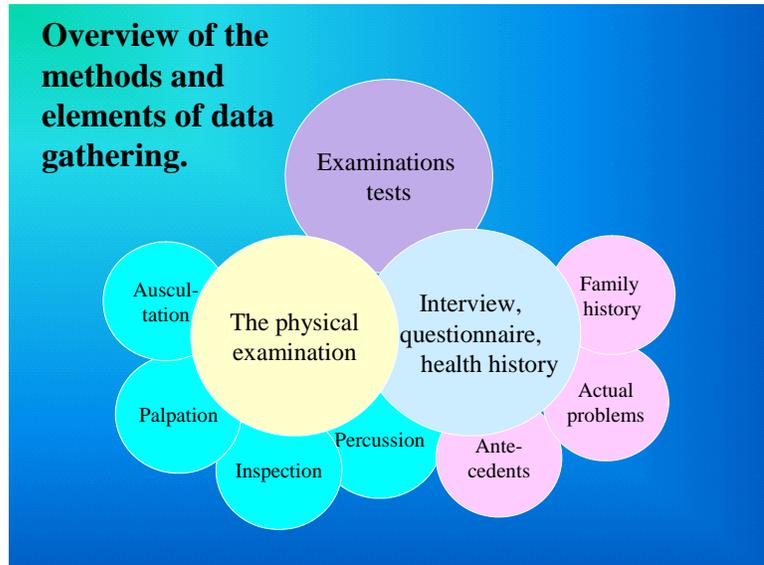
The interview

The interview enables us to get the person to talk so as to access the information that we need. Closed or semi-closed questions enable the gathering of precise data such as age, the number of times they have urinated etc., but they are not of much use to express feelings or emotions. Moreover, as they do not greatly encourage communication the conversation ends rapidly. Generally, the open question is recommended because it leaves the patients freer to express themselves, it does not lead them in a predetermined direction and furthermore, incites them to communicate freely.

The clinical examination

The clinical examination serves to objectify the data gathered verbally during the interview. It is an important part of the preliminary information required to plan the treatment. It includes various techniques of observation and measurement.

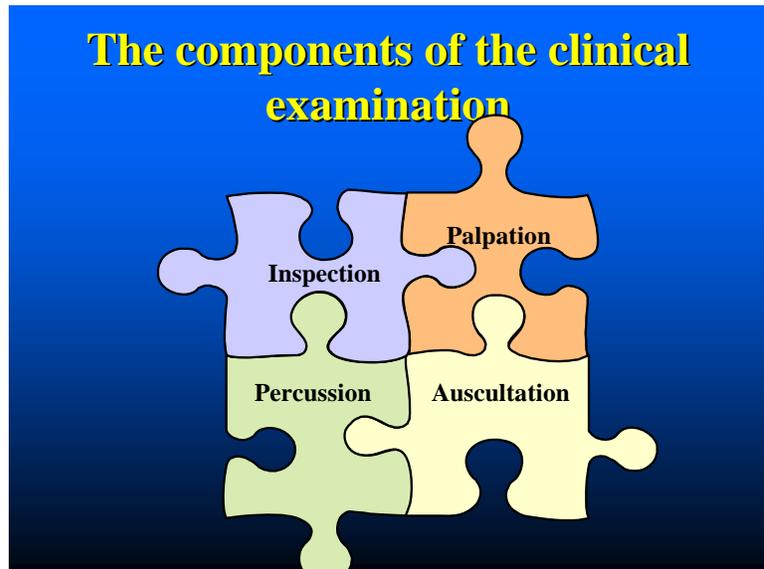
The techniques employed are inspection, palpation, percussion and auscultation. They are used in order to carry out a complete and meticulous evaluation of the functions or the organ examined.



Inspection

This is a careful global examination which takes into consideration visual, auditive and olfactive information⁴.

To access a video on **inspection**, click on the hyperlink number 4 at the bottom of this page. Then, under the heading Inspection select: “Reconnaître l’hippocratism digital”



⁴. Vidéo. *Inspection* : reconnaître l’hippocratism digital : http://web1.univ-rouen.fr/med/semiologie/ap_resp/index_apresp.htm

This examination is further refined by dwelling on each part of the body. Inspection gives us certain visual information such as:

- the general appearance, the morphology specific to particular anatomical regions⁴
- the behaviour
- the gait and balance
- the nutritional state (height, weight, obvious signs of dehydration, loss of muscle, cachexia)
- the speech (coherent, logical, tone, rhythm).

Palpation

After the inspection we palpate certain zones or members which require further attention. This mode of observation makes use of touch in order to determine the characteristics of an organ, a tissue or a lesion⁵.

Palpation enables us to assess numerous parameters:

- the texture of the skin;
- the temperature of the body;
- the humidity and turgescence of the tissues
- the volume of an organ: liver, abdominal mass;
- the presence of edema (Godet);
- the regularity and strength of the pulse;
- muscular tonus;
- the crackling due to pulmonary emphysema;
- cysts, tumours, ganglions;
- the site of pain.

Percussion

This technique consists of hitting the surface of the body in order to provoke the emission of sounds so that we can perceive the density of the underlying tissues⁶.

It enables us to estimate the volume, location and density of an organ. The information gathered enables us to note dullness (presence of liquid, hemothorax), the sound (normal or abnormal pulmonary tissues), tympanic sound (distended abdomen).

For a video on **palpation** : click on footnote number 5 at the bottom of this page. On the website of the University of Rouen, under the heading **Palpation** choose: “Connaître les aires de palpation ganglionnaire axillaires, sus-claviculaires et jugulo-carotidiens.”

For a video on **percussion** click on footnote number 6. Once on the website of the University of Rouen under the heading **Percussion** choose: “Connaître la technique de percussion du thorax”.

⁵. Vidéo. *Connaître les aires de palpation ganglionnaire axillaires, sus-claviculaires et jugulo-carotidien* : http://web1.univ-rouen.fr/med/semiologie/ap_resp/index_apresp.htm

⁶. Vidéo. *Connaître la technique de percussion du thorax* : http://web1.univ-rouen.fr/med/semiologie/ap_resp/index_apresp.htm

Auscultation

This consists of listening to the noises produced by the organs (intestines, heart, lungs, blood vessels) in order to assess their intensity and quality. It is done with a stethoscope⁷.



Auscultation is a method of collecting information using a stethoscope. It is mostly used to amplify cardiac, pulmonary and abdominal noises.

The collection of data by different methods enables us to obtain an ensemble of information covering the various problems of the patient. See other videos^{8,9}.

For a video on **auscultation**: click on reference number 7. Once on the website of the University of Rouen, under the heading Auscultation choose: “Connaître les zones d’auscultation du thorax”⁷.

Mental condition

This examination relates to mood, thought processes, the capacity to concentrate, delirium, hyperactivity, withdrawal, hallucinations, suicidal thoughts¹⁰.

Tegumentary function

During this examination one notes: cuts, scratches, burns, bruises, sores, pruritis, dry skin, redness, dermatitis, inflammation, edema, colouration/dicolouration of the skin, protuberances. One must also assess the state of the hair and nails.

Observation of the head and neck region

This part of the examination serves to observe: diplopia, hazy vision, scotoma, redness and irritation, edema of the eyelids, presence of bruises, lacrymation, otalgia, deafness, tinnitus, otorrhea, lesions of the external ear, epistaxis, rhinorrhea, presence of a cervical mass, state of the teeth and the mucous membranes of the mouth, the presence of prosthesis (dentures, hearing aids, glasses or contact lenses) and pain.

⁷. Vidéo. *Connaître les zones d’auscultation du thorax* : http://web1.univ-rouen.fr/med/semiologie/ap_resp/index_apresp.htm

⁸. Vidéo. *Les bruits cardiaques normaux* : <http://www.sante.ujf-grenoble.fr/SANTE/CardioCD/cardio/chapitre/popup/son001.htm>

⁹. Vidéo. Sous cas cliniques : *Récapitulatif des sons* (pulmonaires): http://web1.univ-rouen.fr/med/semiologie/ap_resp/index_apresp.htm

¹⁰. Phaneuf Margot. *Psychiatric Observation: A Skill Worth Developing* Infiressources, Clinical Crossroad, section “Psychiatric Care”: http://www.infiressources.ca/fer/Depotdocument_anglais/Psychiatric_observation_a_skill_worth_developing.pdf

Neurological function

Here one observes the actual state of consciousness of the person, their temporal, spatial and relational orientation, their memory, presence of headaches, vertigo, dizziness, convulsions, loss of consciousness, paresis, paresthesia, and paralysis. One must also assess the various reflexes: Babinski, pupil, etc., as well as the patient's capacity to communicate and the quality of their speech.

Respiratory function

One notes breathing frequency, dyspnea, coughing, pain and thoracic distortion, the type of breathing, the presence of drawing, hemoptysis, digital hypocratism, cyanosis, speed of capillary flow, expectorations and nasal secretions, their colour and consistency.

Cardiac function

In order to assess the cardiac function one measures the pulse, notes precordial pain, orthopnea, dyspnea, effort intolerance, the presence of palpitations, syncope, lipothymia, inhabitual fatigue and one takes the blood pressure.

To hear the **normal noises** of the heart, go to reference number 8.

For another video on auscultation: click on reference number 9. Once on the site of the University of Rouen, under the heading Cas cliniques choose: "Récapitulatif des sons".

Vascular system

We observe specific (Godet) or generalized edema, numbness, intermittent claudication, cyanosis, colouration/dicolouration of the skin of the various members, the quality and frequency of the pedal, poplitea pulse, the presence of varicose veins and the speed of capillary filling.

Digestive function

The observation of digestive function should include nutrition, hydration, digestion, regurgitation, gastroesophageal reflux, nausea, vomiting, hematemesis, flatulence, icterus, pain, heartburn, constipation, diarrhea, melena, the colour of stools, hemorrhoids, pruritis, gain or loss of weight, appetite or loss of appetite and difficulty swallowing.

Locomotor function

This includes all which limits the amplitude of movements, claudication, cramps, stiffness, bone, muscle or articular pain, amputation, carpal tunnel syndrome.

Genito-urinary function

Woman: vaginal bleeding, dysmenorrhea, secretions, pruritis, abdominal, vaginal or vulvar pain, excrescence, dyspareunia, pregnancy.

Breasts: mass, pain, if breastfeeding note chafing, fissures and nipple discharge.

Man: urethral discharge, localized lesions, scrotal hypertrophy, penile malformation, mass in the groin, impotence.

Both genders: dysuria, bleeding, presence of a mass or lesions, frequency of urination, characteristics of the urine, incontinence, in which case what measures have been implemented.

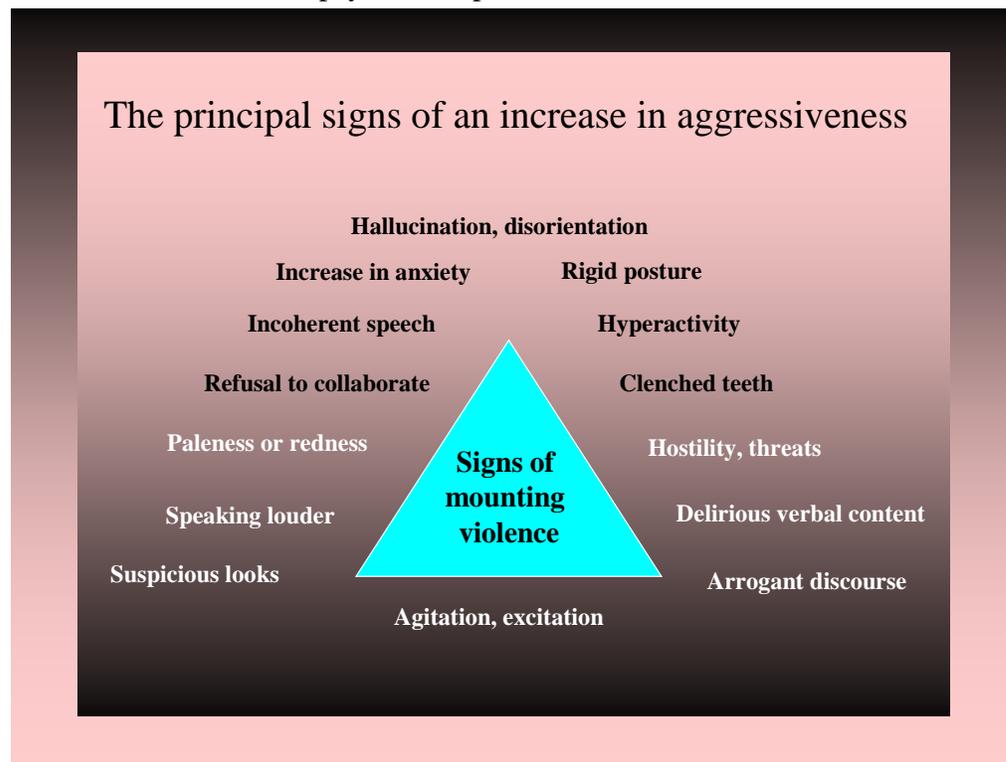
Information required to protect the caregivers

It is also essential to indicate any signs of risk for the caregivers in order that they may take the necessary precautions. Infection is certainly an important risk factor. But one should not neglect the signs and symptoms of anger or aggressiveness of the patients under our care.

In order to do this, we must notice the signs which indicate mounting aggression and violence. Even though this is more often related to psychiatric patients it is not limited to them. The indicators of mounting hostility and the imminence of a crisis are presented in the following chart.¹¹

Psychiatric information

The patient who suffers from psychiatric problems presents a particular symptomatology requiring the collection of specific data¹².

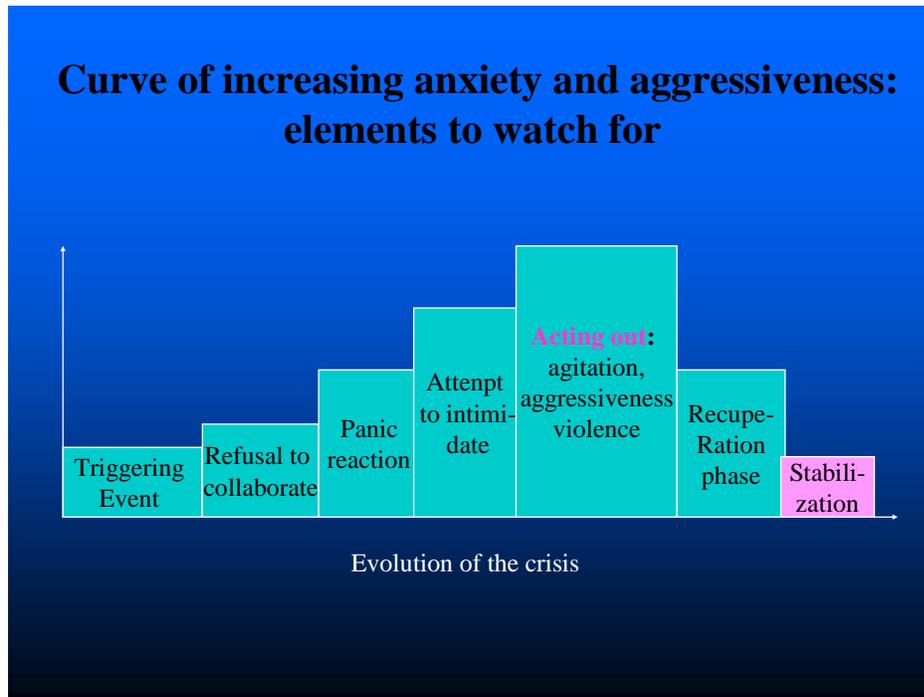


¹¹. Phaneuf Margot. *Psychiatric Observation: A Skill Worth Developing* Infiressources, Clinical Crossroad, section "Psychiatric Care":

http://www.infiressources.ca/fer/Depotdocument_anglais/Psychiatric_observation_a_skill_worth_developing.pdf

¹². Idem

What should be observed?



One must note the context of the admission.

- Evaluate the immediate risk: self-mutilation, suicide.
- Get the patient to express their aggressive or violent feelings.
- Get the patient to express their suicidal ideas.
 - Gather information on recent

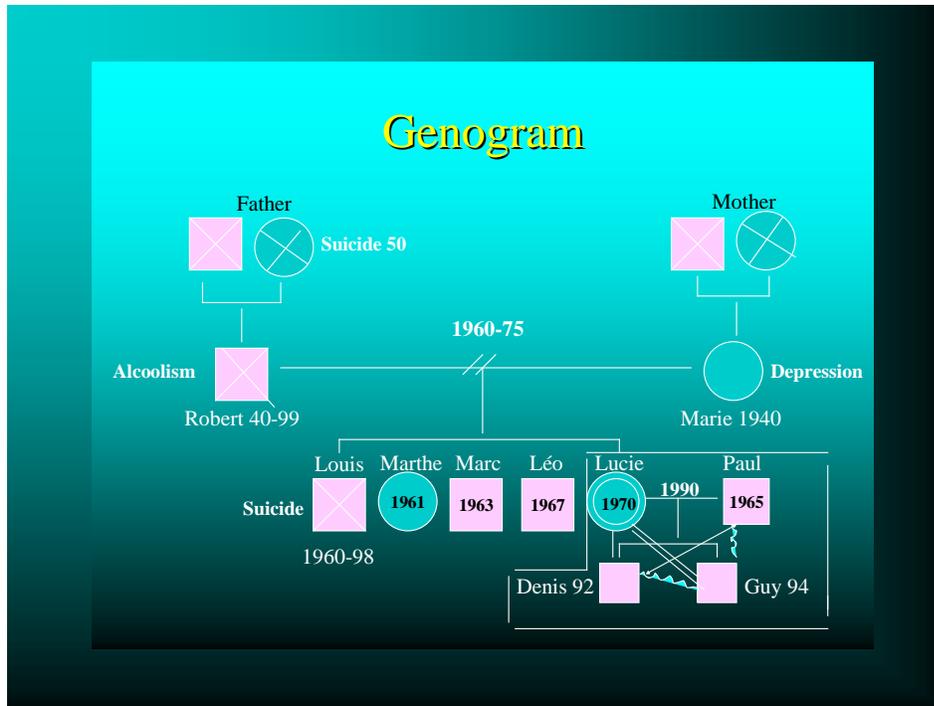
behaviour.

- Ask questions about the antecedents: aggressive, antisocial or disruptive behaviour, problems with the law going back more than 5 weeks.
- Ask about the family antecedents and the support network.
- Ask about substance abuse: alcohol, drugs.

Information about the social network

For the psychiatric patient and at times for other patients, it is necessary to get information concerning their social network. It may be important to have more precise information concerning the family: are the parents deceased, of what did they die, are there similar cases among their relatives, etc.

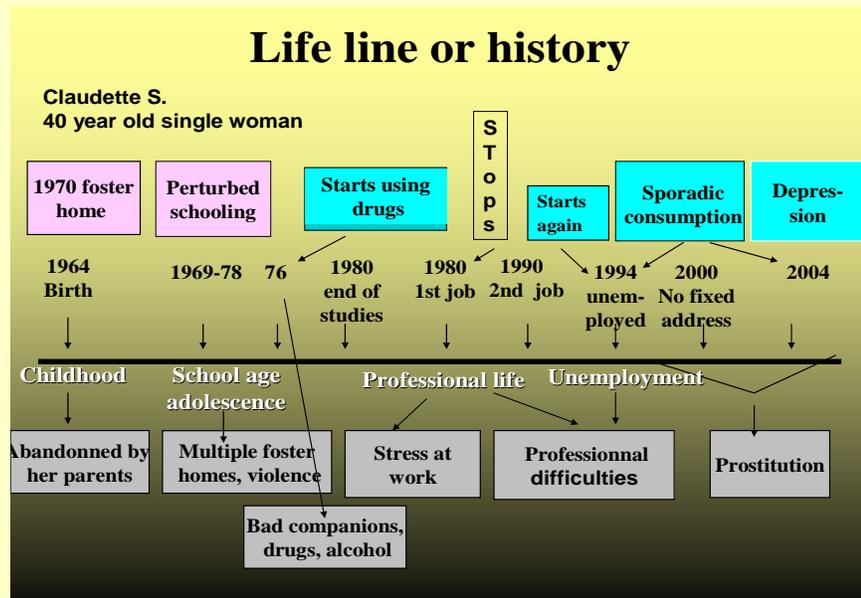




A most useful tool to collect these data is the **genogram**. It presents a strong visual image which gives us information at a glance¹³.

The **life line** is another tool which enables us to present in a visual manner the information about a person and certain important events in their lives (death of parents, start of a cure, abandonment of studies,

hospitalizations, illnesses, successes and failures, amorous relationships, marriage, divorce, etc.) It can also include other more personal information such as certain behaviours or habits (drugs, alcoholism, dependence on medication). The **sociogram** is another useful instrument for the data-gathering. It completes the genogram^{14 15}.



¹³. Phaneuf Margot. *The genogram, a means of enriching the interview: the principles and creation (Part I and Part II)* Infiressources, Clinical Crossroad, section "Mental Health and Communication";

¹⁴. Phaneuf Margot. *Psychiatric Observation: A Skill Worth Developing* Infiressources, Clinical Crossroad, section "Psychiatric Care";

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¹⁵. Phaneuf, Margot. *The sociogram, a complementary tool to the genogram and a means of enriching the interview* Infiressources, Clinical Crossroad, section "Mental Health and Communication";

http://www.infiressources.ca/fer/Depotdocument_anglais/The_sociogram.pdf

The PQRST

The PQRST is a mnemonic model which is an interesting tool for collecting data. This memory aid is a global model which can be adapted to all types of information concerning physical conditions regardless of the system involved.

It enables us to note the information regarding the origin of the symptom (P, that is, what provokes it), its description: (Q) quality, quantity and intensity, the region involved (R), the associated symptoms (S) and the moment of appearance and the duration of the symptom (T) for time¹⁶.

PQRST Model			
	Notion	Explanation	Example
P	Provoke Palliate	What provokes the onset of the symptoms? What relieves them?	How did the pain arise? Are you using analgesics?
Q	Quality Quantity	Description of symptom, frequency.	What are you experiencing (approximately): burning, drumming, etc. What is your level of pain on a scale of 1 to 10?
R	Region (site) affected by irradiation	Site of the symptom. Other sites affected.	Tell me where you are feeling uncomfortable? Or show me with your finger! Do you feel discomfort elsewhere?
S	Accompanying Symptoms	Other accompanying symptoms.	Is there any other discomfort accompanying this symptom?
T	Time, duration Adapted from Mario Brulé & Lyne Cloutier, 2001	Moment symptom appeared, duration.	When did the discomfort appear? Is it still present or intermittent? How many times per day or per week?

Conclusion

The gathering of data offers many advantages for the patient, for the health professionals and for the institution for which they work.

The implementation of this process presupposes that a prior decision regarding its importance has been made and the required documents furnished. During the nurse's training, special effort ought to be placed on teaching the clinical procedure and the step of data collection which lies at its core. Without good data collection, there is a risk that the nurse's therapeutic plan rests on fragile footing. The planning of health care requires all of our attention and without this essential step, nothing is really possible. The process of its implementation proceeds from the scientific method which is based essentially on rigorous observation. And even if we claim that it takes time, nothing really valuable is done in haste.

¹⁶. Le PQRST, source : Brulé, Mario et Lyne Cloutier (2001) *L'examen clinique*. Montréal, Erpi.

Nietzsche in his book “Human, all too human” (“Humain trop humain”) stated that the suffering of another is something which should be learned and which we can never fully appreciate¹⁷. This underlies the necessity for an efficient process of observation. It is the necessary condition for coming as close as we can to the reality of the suffering of our patient. Let us remember that pain is not always visible and that the “cup of suffering is not the same for everyone”¹⁸.

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