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Chapter 1 : MEVP - Clinical: Methemoglobinemia Evaluation

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about the best way to treat a particular condition. In these cases, you may want to consult with different practitioners to decide the best course of treatment for you. In reviewing information, use your judgment, recognizing that evaluating quality is something of an art. Although very few sources will have all the criteria for credibility and accuracy, familiarizing yourself with these criteria can help you sift through information more critically and will provide important cues that will help you differentiate between good quality and poor quality information. This information is for educational purposes only and is not intended to replace the advice of your doctor or health care provider. We encourage you to discuss with your doctor any questions or concerns you may have. How to Reach Us.

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Chapter 2 : A Practical Guide to Clinical Medicine

Collecting and analyzing data involve problem identification, generation of general and specific hypotheses, methodical information gathering during evaluation and analysis, and assembling of pertinent clinical clues as problems to direct further investigation and treatment.

Appraisal of pertinent data Stage 2 9. General considerations In order to determine the value of the data identified in stage 1, the evaluators should appraise each individual document in terms of its contribution to the evaluation of the clinical performance and clinical safety of the device. Uncertainty arises from two sources: Both sources of uncertainty should be analysed to determine a weighting for each data set. The evaluators should therefore: The appraisal plan To ensure systematic and unbiased appraisal of the data, the evaluators should set up an appraisal plan that describes the procedure and the criteria to be used for the appraisal. The appraisal plan typically includes: The appraisal should be thorough and objective, i. The criteria adopted for the appraisal should reflect the nature, history and intended clinical use of the device. There are many acceptable ways, both qualitative and quantitative, by which the appraisal can be carried out The evaluation criteria should be adjusted accordingly. The appraisal plan should be documented in the clinical evaluation report. Conduct of the appraisal The evaluators should follow the pre-defined appraisal plan strictly and apply its criteria consistently throughout the appraisal; base their appraisal on the full text of publications and of other documents not abstracts or summaries , so as to review all of the contents, the methodology employed, the reporting of results, the validity of conclusions drawn from the investigation or report, and evaluate any limitations and potential sources of error in the data; document the appraisal in the clinical evaluation report to the extent that it can be critically reviewed by others. Examples of aspects that can be taken into consideration for evaluating the methodological quality and the scientific validity of the evidence are detailed below. Study design of pre-market and post-market clinical investigations Considerations may need to include: Additional aspects for appraisal of the quality of clinical investigations generated and held by the manufacturer Where a clinical investigation has been carried out by or on behalf of a manufacturer, it is expected that documentation relating to the design, ethical and regulatory approvals, conduct, results and conclusions of the investigation needed for the clinical evaluation will be available for consideration, as appropriate. The clinical investigation plan sets out how the study was intended to be conducted. It contains important information about the study design such as the selection and assignment of participants to treatment, masking blinding of participants and investigators and measurement of responses to treatment, which may be important sources of bias that can be assessed and possibly discounted when trying to determine the actual performance of the device. In addition the clinical investigation plan sets out the intended participant follow-up, approaches to statistical analyses and methods for recording outcomes, which may impact on the quality, completeness and validity of results obtained for performance and safety outcomes. Also, by having the clinical investigation plan, its amendments and the clinical investigation report available, the evaluators will be able to assess the extent to which the investigation was conducted as planned and, where deviations from the original plan have occurred, the impact those deviations had on the veracity of the data generated and the conclusions that can be drawn from the investigation about the performance and safety of the device. The clinical investigation report should be signed by the sponsor and the coordinating or principal investigator to provide assurance that the report is an accurate reflection of the conduct and results of the clinical investigation. Another important consideration of the evaluation will be to assess whether the conduct of the investigation was in accordance with applicable regulations, and in accordance with the current applicable ethical standards that have their origin in the Declaration of Helsinki. The reasons should be noted in the report. Information derived from vigilance data, device registry data, case series, patient dossiers, and other use data Evaluators need to consider significant differences between sources of information in respect to: Under-reporting or lack of reporting of expected side effects or complications by users is common. Therefore,

the vigilance system does not typically deliver adequate information about the true frequency of expected undesirable side-effects and complications. Systematic scientific data are needed for such purposes. Vigilance data, including trend analysis, should be used for identification of unexpected risks. In case of information based on device registries, case series, retrospective analyses of patient dossiers, and other use data, the retrieval of information about outcomes may be incomplete and unreliable have all the patients been considered? Significant differences may exist between device registries. For instance, they may offer an important or limited coverage of a country. The evaluators should take into account the possibility of patients leaving the coverage of a registry or the follow-up of a professional when experiencing serious adverse outcomes. In routine practice, there are also significant differences in the duration of the follow-up of patients by surgeons and other professionals, and in the quality of patient dossiers and data retrieval. For clinical experience data it is important that any reports or collations of data e. Reports of clinical experience that are not adequately supported by data, such as anecdotal reports or opinions, may contribute to the evaluation, e. Data processing and statistics Aspects to consider may include:

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Chapter 3 : Overview of Basic Methods to Collect Information

9. Appraisal of pertinent data (Stage 2) General considerations. In order to determine the value of the data identified in stage 1, the evaluators should appraise each individual document in terms of its contribution to the evaluation of the clinical performance and clinical safety of the device.

Hospitals; state, local, and private 7 Some psychologists work alone, doing independent research, consulting with clients, or counseling patients. Others work as part of a healthcare team, collaborating with physicians , social workers , and others to treat illness and promote overall wellness. Psychologist Work Schedules Psychologists in private practice often set their own hours, and many work part time as independent consultants. They may work evenings or weekends to accommodate clients. Those employed in hospitals or other healthcare facilities may also have evening or weekend shifts. Most psychologists in clinics, government, industry, or schools work full-time schedules during regular business hours. Get the education you need: Find schools for Psychologists near you! Psychologists in clinical practice need a license. Education for Psychologists Most clinical, counseling, and research psychologists need a doctoral degree. Students can complete a Ph. In clinical, counseling, school, or health service settings, students usually complete a 1-year internship as part of the doctoral program. School psychologists need an advanced degree and either certification or licensure to work. Common advanced degrees include education specialist degrees Ed. Licenses, Certifications, and Registrations for Psychologists In most states, practicing psychology or using the title "psychologist" requires licensure. In all states and the District of Columbia, psychologists who practice independently must be licensed where they work. Licensing laws vary by state and by type of position. Most clinical and counseling psychologists need a doctorate in psychology, an internship, and at least 1 to 2 years of supervised professional experience. They also must pass the Examination for Professional Practice in Psychology. Information on specific state requirements can be obtained from the Association of State and Provincial Psychology Boards. In many states, licensed psychologists must complete continuing education courses to keep their licenses. The American Board of Professional Psychology awards specialty certification in 15 areas of psychology, such as clinical health psychology, couple and family psychology, and rehabilitation psychology. The American Board of Clinical Neuropsychology offers certification in neuropsychology. Board certification can demonstrate professional expertise in a specialty area. Certification is not required for most psychologists, but some hospitals and clinics do require certification. In those cases, candidates must have a doctoral degree in psychology, a state license or certification, and any additional criteria required by the specialty field. Psychologist Training Most prospective psychologists must have pre- or postdoctoral supervised experience, including an internship. Internships allow students to gain experience in an applied setting. Candidates must complete an internship before they can qualify for state licensure. The required number of hours of the internship varies by state. Important Qualities for Psychologists Analytical skills. Psychologists must examine the information they collect and draw logical conclusions. Psychologists must have strong communication skills because they spend much of their time listening to and speaking with patients or describing their research. Psychologists study and help individuals, so they must be able to work well with clients, patients, and other professionals. Psychologists study attitude and behavior. They must understand the possible meanings of facial expressions, body positions, actions, and interactions. Psychologists must demonstrate patience, because conducting research or treating patients may take a long time. Psychologists need problem-solving skills to collect information, design research, evaluate programs, and find treatments or solutions to mental and behavioral problems.

Chapter 4 : Collecting and Analyzing Data: Doing and Thinking - Clinical Methods - NCBI Bookshelf

Any pertinent additional clinical data including HPV status, socioeconomic status, smoking, drinking history, and pertinent features related to oral health will be obtained. A central pathology review for all biopsy results will be performed and incorporated into the final analyses.

Iran J Nurs Midwifery Res. This article has been cited by other articles in PMC. A qualitative exploratory approach was used in this study at Shiraz Nursing and Midwifery School in A purposeful sample of 8 nursing instructors and 40 nursing students was interviewed and the data on their opinions about the problems of the clinical evaluation were collected through semi-structured deep interviews. Initially, four open-ended questions, which were related to the clinical evaluation status, problems, were used to stimulate discussions in the interview sessions. Content analysis was employed in order to analyze the transcribed data. The recorded interviews were initially transcribed, read, and reread on a number of occasions to get an overall feeling of what the participants were saying. The codes were compared for similarity and differences, merged together, and categorized. Finally, five themes emerged: In appropriate clinical evaluation method, problems of clinical evaluation Process, problems related to clinical instructors, unsuitable programming of clinical education, and organizational shortcomings. Besides focusing on upgrading the current clinical evaluation forms, nursing trainers should improve their knowledge about a complete and comprehensive clinical evaluation. They should also apply other appropriate and objective clinical evaluation methods and tools, and perform a formative and summative clinical evaluation. Also, workload adjustment of the nursing trainers needs revision. Clinical training is considered as an indispensable and very important part of professional nursing education. Nursing teachers must be in charge of clinical practice because they are the ones ultimately responsible for learning in the clinical practice. The development of competent practice is a primary goal for nursing education. Nursing literature abounds with papers that discuss this long-running and difficult problem. Much of the discussion centers on the thorny issue of subjectivity and a plethora of clinical evaluation tools has been devised and abandoned in the quest to overcome this ongoing dilemma. Wood proposes that the problem probably persists because clinical evaluation relies upon the observation of the performance of one individual by another, which itself is inevitably subjective. This suggests that the issue of subjectivity might be addressed only if some other methods of clinical evaluation were to be devised. Students often register complaints of variations in teacher expectation and of subjectivity in grading. On the other hand, in some studies, the students stated that clinical evaluation by the clinical instructors is one of the major problems experienced in the clinical practice. Following the announcement of the clinical evaluation results, many students protest about their evaluation scores to the clinical instructors and raise various issues. Despite some considerable efforts made in order to solve the problem, clinical evaluation challenges are still continuing. Their teachers also have similar attitude, disagree with the current clinical evaluation, and do not consider it appropriate. The research findings also indicated that This view has also been transferred to the next generations. A purposeful sample of 8 nursing instructors and 40 nursing students was interviewed and the data on their opinions about the problems of the clinical evaluation were collected through face-to-face deep semi-structured interviews. The enrolment criteria were as follows: Each deep interview lasted for at least 2 h. Data collection and analysis proceeded concurrently, and once the themes were identified and data saturation was achieved, the interviews were discontinued. A written explanation was also provided to the participants and accepted by them through a written consent form. None of the participants had any concerns about signing the consent. Initially, four open-ended questions, which were related to the clinical evaluation status, were developed and used to stimulate discussions in the interview sessions [Table 1]. Initial analysis focused on understanding the information, and developing codes and categories through identification of persistent words, phrases, themes, or concepts within the data. For coding the transcript, it was necessary to go through the transcripts line by line and paragraph by paragraph to look for significant statements and codes according to the topics addressed.

Overall, three levels of coding were selected as appropriate to code the data. Examining the data line by line and making codes taken from the language of the subjects who attended the focus groups and deep interviews Level 2: Comparing the coded data with other data and creating the categories. In fact, the categories are simply the coded data which seem to cluster together and may result from condensing of the codes Level 3: Describing the clinical evaluation problem which is the title given to the central themes that emerge from the categories. Codes were then compared for similarity and differences, merged together, and categorized. Table 2 shows the three levels of codes for one of the themes. Table 2 Open in a separate window Through this process of analysis and comparison, the following themes emerged: Inappropriate clinical evaluation method, problems of clinical evaluation Process, Problems related to clinical instructors, unsuitable programming of clinical education, and organizational shortcomings. The results of the present study were shown to 10 participants, who confirmed the findings as being a reflection of their original descriptions. Applicability is considered as the extent to which the study findings fit outside contexts. It was enhanced in the present study by returning to the participants of the study for confirmation of the findings. Consistency reflects the extent to which the study can be judged as auditable. It was enhanced in the study by ensuring that the interview situation was stable and consistent throughout the data gathering. The interviews were recorded, so that they could be listened over and over again. Neutrality should be judged in qualitative research by confirmability, which is achieved through auditability, applicability, and consistency. This proved to be useful because the researcher had a lot of experience in the field of nursing education. In addition, permission to conduct the study was obtained from the Dean of the Faculty of Nursing and Midwifery. The qualitative analysis led to the emergence of five major themes from the deep interview data. Nursing instructors also admit that these evaluation forms are necessary but not adequate for clinical nursing evaluation. To measure some clinical competencies, particularly clinical procedure skills and clinical decision-making skills, through objective nursing process, other tools are required. Since the clinical evaluation forms are more widely used and these instruments are the only evaluation tools, the inclusion of all clinical learning objectives in these forms leads to problems in scoring the nursing students, resulting in their protest. As the findings indicated, since the learning objectives of the current clinical evaluation forms are numerous, hard to understand, and are not practical, the instructors tend to perform a subjective evaluation and rely on their mentality in order to evaluate the students. Inappropriate evaluation forms for evaluation of other clinical capabilities of nursing students Nursing students stated thus: The learning objectives of the current clinical evaluation forms are numerous and hard to understand. The learning objectives of the current clinical evaluation are not practical too. They are not able to evaluate the competent students. They cannot distinguish the competent students from the moderately competent ones. These forms emphasize professional skill the affective learning objectives of the nursing students more. They are necessary but not efficient. My own evaluation method as an instructor also has problems. We should work more on them. We have revised the current evaluation forms each semester. We should definitely use other evaluation methods in addition to the current evaluation forms to do better clinical evaluation. The current evaluation forms should be revised. In order to improve clinical evaluation, during the course, some OSCE examinations are incoherently performed for some nursing students and instructors do not provide students with feedback during and after OSCE examination; then, the students do not realize where their problems are. So, the students are dissatisfied to participate in it. It seems that formative evaluation such as OSCE examination should be conducted in a higher quality for the students, and other evaluation tools and methods should be added. Incorrect performance of formative clinical evaluation One of the instructors said: This examination is stressful. Stress and fraud of the OSCE examination is very high. Most students do not like OSCE examination. No feedback is given to the students. OSCE grading has no value. Since the facilities and stages of performing the clinical procedures during OSCE examinations are not the same as actual issues in the clinical setting, the clinical procedures that we practice at the hospital are highly incomplete compared to the OSCE procedures. Problems related to clinical instructors The instructors accepted that they did not perform the clinical evaluation of the students in a timely manner. They stated that their workload is high and

they do not have sufficient opportunity and time to identify the students during a semester. Due to the fact that they perform clinical evaluation without having any objective evidence, the students may have objections about their scores, so they try to give higher score to the students. One of the clinical evaluation objectives that the instructors expect their students to perform in the clinical training was their clinical conference presentations in the clinical wards. The students complained that conference topics were not original and topics were not selected on the basis of ward common diseases; therefore, they were prepared and provided only for performing some tasks by students. In order to perform an objective evaluation of the students, instructors strived to give cognitive written tests at the end of the semester, but the students objected to irrelevant content of these tests compared with those they had experienced during the clinical training. Students stated that instructors do not know what they expect the students to do during their apprenticeship and what they should learn. To score the students based on the evaluation forms, there are options on the evaluation forms which are not related to them. According to the issues mentioned above, the inclusion of abundant clinical objectives for education and evaluation is a difficult task and causes the instructors not to understand the students well enough and not to reach all the identified objectives. We cannot reach all the clinical objectives in this short period of time. The students do not spend much time with the instructor in the clinical field. As a result, the instructors do not have enough opportunity to understand the students; therefore, reduction of the training duration might be the reason why we cannot assess the students better. The conference topics are repeated. It is just translated and handed on to the instructors. Some instructors give tests to their students at the end of the course; however, the exam questions are not ideal for that ward. Once, although I thought I would fail, I got a high score. By performing the current clinical evaluation, positive and quiet students can get good grades. I can say I do this work, but I do nothing.

Chapter 5 : Psychologists: Jobs, Career, Salary and Education Information

Set limits as to how much information you want to collect Too much information will be just as much of a problem as not enough. Decide on the limits of what you are going to collect, or you will just get lost among the stacks of data that have piled up on your desk.

Diagnosis of methemoglobinemia and sulfhemoglobinemia and possible hereditary congenital causes Differentiation of methemoglobinemia and sulfhemoglobinemia from other causes of cyanosis eg, congenital heart disease Testing Algorithm Delineates situations when tests are added to the initial order. This includes reflex and additional tests. This is a consultative evaluation in which the case will be evaluated at Mayo Medical Laboratories, the appropriate tests performed at an additional charge, and the results interpreted. This is an evaluation for methemoglobin and sulfhemoglobin levels and possible hereditary causes. Methemoglobin, sulfhemoglobin levels, methemoglobin reductase cytochrome-b5 reductase activity and protein analysis screening for hemoglobin variants cation exchange HPLC and capillary electrophoresis will always be performed. If additional hemoglobin variant confirmatory testing is required, appropriate reflex testing will be performed. This will vary from additional protein analysis methods to molecular testing, as needed. Methemoglobinemia can be hereditary or acquired and is present by definition when methemoglobin levels are greater than the normal range. Congenital methemoglobinemias are rare. They are due either to: Type III is no longer a category. These include alpha-, beta- and gamma-chain variants. Rarely, other substitutions outside the proximal and distal histidine location can cause Hb variants that increase methemoglobin or sulfhemoglobin levels. Most M-hemoglobin variants are readily identified by HPLC or mass spectrometry methods with characteristic electrophoresis patterns; however, some require more specialized techniques. Most are associated with increased methemoglobin with or without an increase in sulfhemoglobin. Alpha chain M-hemoglobin variants can be associated with increased sulfhemoglobin without an increase in methemoglobin. Sulfhemoglobinemia often accompanies methemoglobinemia. Sulfhemoglobinemia can be due to exposure to trinitrotoluene, zinc ethylene bisdithiocarbamate a fungicide ,overexposure to paint or varnish fumes, metoclopramide, sulfonamides and some migraine medications. The formation of sulfhemoglobin cannot be reversed and there is no therapy for sulfhemoglobinemia aside from removal of the inciting agent. Because patients with sulfhemoglobinemia also often have methemoglobinemia, therapy is directed at reversing the methemoglobinemia present. Isolated increased sulfhemoglobin levels can also be associated with alpha chain M-hemoglobin variants. Symptoms of both methemoglobinemia and sulfhemoglobinemia are characterized by cyanosis. Reference Values Definitive results and an interpretive report will be provided. Such patients are mildly cyanotic and asymptomatic. In acquired toxic methemoglobinemia, the concentration may be much higher. Very high concentrations may be fatal. This is a consultative evaluation in which the history and previous laboratory values are reviewed by a hematologist who is an expert on these disorders. Appropriate tests are performed and an interpretive report is issued. Cautions Sulfhemoglobin is exceedingly stable and does not change in stored or shipped specimens. A normal methemoglobin value obtained with stored or shipped specimens does not exclude prior methemoglobinemia of minimal degree. However, significant methemoglobinemia will still be demonstrable. Methemoglobinemia due to deficiency of methemoglobin reductase. Online Mendelian Inheritance in Man. Hemoglobin--alpha locus 1; HBA1. Laboratory assessment of oxygenation in methemoglobinemia. Clin Chem ;51 2: Noor M, Beutler E: Cold Spring Harb Perspect Med ;3 3: Disorders of oxidized haemoglobin. Blood Rev ;19 2:

Chapter 6 : Appraisal of pertinent data (Stage 2) | Clinical Evaluation Report

Clinical evaluation: a methodologically sound ongoing procedure to collect, appraise and analyse clinical data pertaining to a medical device and to evaluate whether there is sufficient clinical evidence to confirm compliance with relevant essential requirements for safety and performance.

Total number of citations and overall range - The NPC further recommended that all four categories of prescribing, transcribing, dispensing, and administering thus including the nursing-sensitive medication administration category be digitalized and synchronized in the EHR. Such an action would combine bar code medication administration technology at the point of care with real-time medication surveillance of therapeutic goal attainment, enhanced adverse drug-event alerts, and adverse event-surveillance information. In other words, if bar code data could be used to do more than identify the patient and report medication administration doses, the additional synchronization of information would broaden the scope of the medication-administration patient safety zone. This would give nurses more efficient access to information which the nurse actually uses when administering medications. Additional information, triggered by the bar code, might help the nurse to: It is important to note that the nurse currently takes these steps manually in a time-consuming process, searching for the potassium values while preparing the drug for administration. The electronic process being recommended is both more efficient and safer. Electronic medication records eMARs should also include trending of medications along with clinically relevant laboratory values. Insulin administration in the eMAR should be trended with the most recent plasma glucose and serum potassium levels in a single view, so as to keep busy nurses from having to retrieve the labs from another flow sheet in the EHR. In each of these examples, the data were already contained within the EHR; they simply needed to be connected in a nurse-and-patient-safety-sensitive manner. Programming of drug administration processes at the point of patient contact, with strategically placed tips and alerts, might lessen medication errors significantly. We authors support informatics research that moves in this direction. We also offer the following additional medication safety recommendations: Improve user friendliness screen size, font size, adequate LED lighting for use in darkened rooms of handheld devices used to bar code scan medications Build in efficient and timely access to laboratory results for all medication providers physicians, advanced practice registered nurses [APRN], pharmacists, and other direct care nurses. Finally, we encourage careful consideration of policies governing the use of pharmacy technicians in dispensing medications without direct pharmacist supervision. Boards of Nursing and Pharmacy may want to take up this consideration from a regulatory or statutory viewpoint. EHRs need to reflect the credentials of the person dispensing and administrating the medications to compare medication error rates between and among licensed and unlicensed personnel. Direct Care Nursing Documentation and Standards of Practice Appropriate quality care comparisons among and between providers and practices can only be made when standardized processes and products are used. This section will explore three aspects of the patient safety implications of direct care nursing documentation and its unique characteristics from three aspects, including standardization of evidence-based care processes, transparency of the nursing process, and development of an electronic workflow tool to standardize and improve communication. Standardization of evidence-based care processes. The NPC recommended standardization of evidence-based care processes, including patient educational materials and actions plans, within and eventually across the care setting. Appropriate quality care comparisons can only be made when such standardized processes and products are used. Registered nurses, including APRNs, may defend themselves by saying that their own personal materials are the most current and most evidence-based. If this is so, then it is imperative that specialty-specific nurses become involved in the selection and updating of computer-generated, patient-education materials to ensure the evidence base and the appropriateness of all materials. In addition, documents generated by the EHR must be written clearly and simply, in keeping with sound health-literacy and evidence-based patient education strategies and tools

Harvard School of Public Health n. Nurses may also voice concerns about newer electronic documentation methods interrupting workflow, in which case they need to become personally involved in workflow design with vendors or with IT department personnel. In contrast to this misperception, it is important to recognize that evidence-based practices and standardization of care processes help to assure that the quality of care is optimized for each individual patient. The premises underlying evidence-based practice and standardized care do not negate, but rather heighten, individualization of care, including consideration of personal beliefs, values, and individual preferences. In brief, evidence-based practice and the standardization of care processes enhance the trust patients have in nurses to consistently function on behalf of their best interest. Prioritization of diagnoses and transparency of the nursing process. The Nursing Practice Committee recommended that nurses make the nursing process more transparent in the EHR for each patient problem requiring nursing care. The Committee also recommended that nurses properly prioritize patient problems in their documentation. Proper prioritization of diagnoses and a more transparent process are two methods of evaluating nursing documentation. Analogously, nurses need to have the ability to manually order or sort by priority the diagnoses that drive their interventions. Transparency refers to the clarity of the record for its users. Transparency, in more recent times, has come to mean the open sharing of information. For purposes here, we define electronic health record transparency as clear and open sharing of information among providers and with patients. While providers using the EHR have access to information inserted by interdisciplinary team members, access to this information is not always intuitive, nor is its presentation always clear. Systems today do provide patients with electronic access to limited information in their EHRs. However, it is possible that even greater information sharing in the future will further improve the quality of care Delbanco et al. Development of an electronic workflow to standardize and improve communication. Additionally, the Nursing Practice Committee recommended that the nursing process steps be researched and developed into an abbreviated communication tool, one that would describe and prioritize each individual patient problem for use during handoff at change of shift and also when documenting planning of care during admission, transfers, and discharges. Assessment, Diagnosis, Outcome Identification, Planning, Implementation, and Evaluation Model A simple, electronic workflow helps standardize and improve communication of direct care in keeping with the ANA documentation standards , as in the following focused-care example. Appropriate outcome identification, planning, and implementation of interventions are not random actions, but are actions that are assessment-and-diagnostic-specific. Outcome Identification and Planning: In these two standards, nurses specify the intervention s to be used to achieve the desired outcomes, both process outcomes and clinical outcomes. Conduct on-going vigilance and act to prevent or to reverse movement toward outcomes that are undesired. Initiate rescue, as needed. Continue to modify plan to achieve desired process and clinical outcomes. The purpose of nursing documentation is to record nursing care provided and patient responses. Because the current standard of care is the nursing process, the steps in the nursing process need to be evident in nursing documentation. When documentation is poor it is likely that both human and technologic improvements are needed. We authors find human-machine interaction to be interesting. When there is an issue with documentation, those closest to the world of informatics are quick to exculpate the EHR by saying it was never intended to fill a gap in practice. On the other hand, those closest to the clinical world are quick to exculpate themselves by blaming one or more technical features of the EHR. Reality most likely lies somewhere in the middle. It may be that standardization of care processes, including clinical decision-support processes, becomes more fully appreciated as the number of Doctor of Nursing Practice DNP graduates increase. These graduates are prepared to use new quality improvement technologies; organize and analyze the evidence that flows from their own practice; and compare their practice parameters against those of others. The following paragraph provides an overview of DNP clinical projects designed to improve patient outcomes or reduce patient risk by improving care processes. APRNs, and especially DNP graduates, know that the ability to take advantage of EHR data to improve patient care first requires the proper entry of process and outcome data in the record. Nurses use both synchronous and asynchronous methods to document care.

Perhaps when voice activated, natural language processing methods are further developed and better integrated into the EHR, all nursing documentation will be synchronous. Clinical decision support CDS information depends on real time data. Triggering an alert for sepsis is only beneficial if the alert comes as soon as the system inflammatory response system SIRS criteria are met. If the vital signs are written on paper and entered later, the alert is delayed and patient safety is impaired. Documentation studies indicate that factors to promote diagnostic reasoning and accuracy have been identified. Researchers should work closely with EHR vendors and terminology developers to be assured that tools with known validity and reliability are correctly incorporated into the clinical workflow. These scales not only meet nursing and hospital system standards but are increasingly being incorporated into big data and population-health management. On the other hand, unintended consequences may flow from what a clinical ethicist calls EHR quality and documentation pitfalls. Most vendors provide software with a variety of options for each assessment parameter e. Yet, well-intended but clinically inappropriate IT decisions may be made. When clinicians identify problems, such as ambiguous yes or no options, they are encouraged to correct them by explaining clinical and legal consequences of such decision-making to IT department staff or to healthcare system executives. Other technology issues may also need to be voiced to vendors. In the paragraphs below, we will first consider efficiency and EHR technology concerns. Then we will offer HIT and nursing practice recommendation. Several studies have documented the lack of efficiency in current EHR documentation practice. Activities that interrupted documentation included: Researchers suggested that physicians rely on synthesis rather than composition to write progress notes. Newer technologies that support synthesis are exemplified by highlighting and thus capturing single words or phrases from the chart to construct a new note descriptive of the patient at the current point in time. Research is needed to compare the quality of such charting and to determine if it is less vulnerable to fragmentation than current charting methods. This research needs to include study of the documentation by both direct care nurses and physicians. A recent hospital-based study by Englebright et al. The researchers concluded that this newer method minimized or eliminated documentation that did not directly support patient care. These investigators recommended use of alternative options for recording non-patient-care-related information and use of EHR technology to help nurses document and communicate basic care elements. The Nursing Practice Committee of the Missouri Nurses Association is committed to efficiency in the provision of care. These nurses recognize that efficiency, including efficient capture of meaningful data, helps to translate information and to communicate nursing-based knowledge to other members of the healthcare team, thus improving patient safety and care quality. Ease of access and availability to computer devices in patient rooms. Emphasis should be on positioning of the computer to augment the engagement of the nurse and the patient as partners in care. Because no single device will work in all care areas, nurses should consider multiple types of computer device options. The number of devices available should be contingent upon the number needed to cover high volume times of day. Variables to consider include quality of the wireless connection, battery life limitations, and available bedside space. Efficiency-related issues, if unaddressed, minimize electronic documentation. Given a choice between providing high quality care and quality documentation within an inefficient EHR system, it is safer to provide the care required and minimize documentation time than to compromise on care to be sure that documentation is complete. Understanding and correcting the etiology of such documentation work-arounds, and all other work-arounds, is essential to improving the healthcare system Debono et al. Members of the Nursing Practice Committee have recommended that, if current systems are inefficient or suboptimal, the goal for nurses, IT staff, and institutional administrators should be to improve the system not work around it. Direct care nurses report that EHR issues also affect the quality of their charting. These include, when using some products, rigidity in the number of available options for entering nursing data; a lack of pertinent patient information presented in a readily accessible and comprehensible manner to support critical decision making; drawbacks associated with over-dependence on the checklist quality of nursing documentation; and the relatively little attention given to diagnostic-specific interventions and their

evaluation. Such issues lead to poor visibility, presentation, and possible incorrect use of clinical information that may compromise patient outcomes. Issues related to electronic charting, however, may not always be the fault of the EHR.

Chapter 7 : Problems and challenges of nursing studentsâ€™ clinical evaluation: A qualitative study

Information gathering and synthesis is crucial to the success of the program and to the relevance and effectiveness of the evaluation. It should start at the beginning of any effort, and contribute to the initial planning.

The "daVinci Anatomy Icon" denotes a link to related gross anatomy pictures. It is a means of communicating information to all providers who are involved in the care of a particular patient. It allows students and house staff an opportunity to demonstrate their ability to accumulate historical and examination based information, make use of their medical fund of knowledge, and derive a logical plan of attack. It is an important medical-legal document. An instrument designed to torture Medical Students and Interns. Meant to cover unrelated bits of historical information. Should neither require the killing of more then one tree nor the use of more then one pen to write! Knowing what to include and what to leave out will be largely dependent on experience and your understanding of illness and pathophysiology. If, for example, you were unaware that chest pain is commonly associated with coronary artery disease, you would be unlikely to mention other coronary risk-factors when writing the history. Until you gain experience, your write-ups will be somewhat poorly focused. Not to worry; this will change with time and exposure. Several sample student write-ups can be found at the end of this section. One sentence that covers the dominant reason s for hospitalization. Smith is a 70 year old male admitted for evaluation of increasing chest pain. The HPI should provide enough information without being too inclusive. Events that occurred after arrival are covered in a separate summary paragraph that follows the pre-hospital history. Some HPIs are rather straight forward. If, for example, you are describing the course of an otherwise healthy 20 year old who presents with 3 days of cough, fever, and shortness of breath, you can focus on that time frame alone. It gets a bit more tricky when writing up patients with pre-existing illness es or a chronic, relapsing problem. In such cases, it is important to give relevant past history "up front," as having an awareness of this data will provide contextual information that will allow the reader to better understand the most recent complaint. If, for example, a patient with a long history of coronary artery disease presents with chest pain and shortness of breath, it might be written as follows: S is a 70 yr old male with known coronary artery disease who is: This represented a significant change in his anginal pattern, which is normally characterized as mild discomfort which occurs after walking vigorously for 8 or 9 blocks. In addition, 1 day prior to admission, the pain briefly occurred while the patient was reading a book. He has also noted swelling in his legs over this same time period and has awakened several times in the middle of the night, gasping for breath. In order to breathe comfortably at night, Mr. S now requires the use of 3 pillows, whereas in the past he was always able to lie flat on his back without difficulty. S is known to have poorly controlled diabetes and hypertension. He denies fevers, chills, cough, wheezing, nausea vomiting or other complaints. From a purely mechanical standpoint, note that historical information can be presented as a list in the case of Mr. S, this refers to his cardiac catheterizations and other related data. This format is easy to read and makes bytes of chronological information readily apparent to your audience. Knowing which past medical events are relevant to their area of current concern takes experience. In order to gain insight into what to include in the HPI, continually ask yourself, "If I was reading this, what historical information would I like to know? The remainder of the HPI is dedicated to the further description of the presenting complaint. As the story teller you are expected to put your own spin on the write-up. That is, the history is written with some bias. You will be directing the reader towards what you feel is the likely diagnosis by virtue of the way in which you tell the tale. These are referred to as "pertinent positives. A brief review of systems related to the current complaint is generally noted at the end of the HPI. This also includes "pertinent negatives" i. If present, these symptoms might lead the reader to entertain alternative diagnoses. Their absence, then, lends support to the candidate diagnosis suggested in the HPI. Occasionally, patients will present with two or more dominant, truly unrelated problems. First, spend some extra time and effort assuring yourself that they are truly unconnected and worthy of addressing in the HPI. That being the case, present them as separate HPIs,

each with its own paragraph. This should include any illness past or present for which the patient has received treatment. Items which were noted in the HPI e. You may simply write "See above" in reference to these events. All other historical information should be listed. Detailed descriptions are generally not required. If, for example, the patient has hypertension, it is acceptable to simply write "HTN" without giving an in-depth report on the duration of this problem, medications used to treat it, etc. Also, get in the habit of looking for the data that supports each diagnosis that the patient is purported to have. When this occurs, a patient may be tagged with and perhaps even treated for an illness which they do not have! This is, in fact, a rather common diagnosis but one which can only be made on the basis of Pulmonary Function Tests PFTs. While a Chest X-Ray and smoking history offer important supporting data, they are not diagnostic. So, maintain a healthy dose of skepticism when reviewing old records and get in the habit of checking on the primary information yourself. All past surgeries should be listed, along with the rough date when they occurred. Includes all currently prescribed medications as well as over the counter and non-traditional therapies. Dosage and frequency should be noted. Identify the specific reaction that occurred with each medication. This is a broad category which includes: Specify the type and quantity. Determine the number of packs used per day and the number of years which the patient has smoked. When multiplied this is referred to as "pack years. Specify type, frequency and duration. Work History type, duration, exposures: In particular, seach for a history of cancer, coronary artery disease or other heritable diseases among first degree relatives. Obstetrical History where appropriate: Review of Systems ROS: As mentioned previously, the most important ROS questioning i. The responses to a more extensive review which covers all organ systems are placed in this "ROS" area of the write-up. In actual practice, most providers do not document such an inclusive ROS. Thus, at this stage of your careers it is probably a good idea to practice asking all of these questions as well as noting the responses so that you will be better able to use them for obtaining historical information when interviewing future patients. Includes head, eyes, ears, nose, throat, oro-pharynx, thyroid.

DOWNLOAD PDF COLLECT AND EVALUATE ADDITIONAL PERTINENT CLINICAL INFORMATION

Chapter 8 : GIP - Clinical: Gastrointestinal Pathogen Panel, PCR, Feces

Evaluation of clinical source data is often subjective and, depending on the procedures used, susceptible to bias that could affect both the values of clinical endpoints and the results of.

Learn how to gather information about your community issue and put that information together to design an evaluation to address your questions. What do we mean by information gathering and synthesis? Why gather and synthesize information? When should you gather and synthesize information? Who should gather and synthesize information? How do you gather and synthesize information? Suppose you wanted to design a house that used very little energy, took few resources to build and maintain, and was affordable for most families. Others have also undoubtedly tried to address that issue, some with success and some without. Knowing what they did, how they did it, and what the results were can help you decide how to design your effort. You might be able to find a method here, and a technique elsewhere that all fit together into exactly the program that will suit the people and conditions in your community. New ideas tend to come out of what others have attempted. Most artists start out imitating others before they develop their own styles. This section looks at gathering all the information you can about your community issue and about attempts to address it, and putting that information together to design an evaluation to address your questions. Although this chapter is about evaluation, much of the material in these sections applies to planning the intervention or program and the evaluation: An evaluation is a research project: Although this section talks about program design, it also applies to the design of the evaluation. The more information you have about the issue itself and the ways it has been approached, the more likely you are to be able to devise an effective program or intervention of your own. This term refers to published material of various kinds that might shed light either on the issue or on attempts to deal with it. These can be conveniently divided into scholarly publications, aimed primarily at researchers and the academic community; mass-market sources, written in a popular style and aimed at the general public; and statistical and demographic information published by various research organizations and government agencies. These are programs or interventions developed and tried in communities that have addressed your issue. By giving you insight into how issues play out in your or other communities, they can provide nuts-and-bolts ideas about how to or how not to conduct a successful program or intervention. For the most part, information sources here are the people who are involved in efforts to address issues similar to yours, or those who can steer you to them. Additionally, there are a number of natural examples such as single case studies that have been written about descriptively in the literature of community psychology or public health that may be relevant to your work. Synthesis is from the Greek; it means putting together. Its English meaning is the same: The two really start in the same place, with what you think will address the issue â€" what shape the program or intervention should take, with whom it should be applied, and what behaviors or conditions it aims to change. Once these are determined, they in turn determine your evaluation questions. It will help you avoid reinventing the wheel. A lot of different organizations have likely approached this issue before you. Some might have been successful and some might not have, but all of them have probably learned something that would be useful to you in the process. It will save you a huge amount of trouble, and perhaps be the difference between creating a program that does its job well and one that fails miserably and disappears. It will help you to gain a deep understanding of the issue so that you can address it properly. You need all the tools possible to create the best program you can. Foremost among the tools you need to plan and implement a program or intervention are information, information, and information. Putting together the right combination will help you to successfully address the particular needs of your community and population. It can help you to be culturally sensitive. Perhaps even more important, you can learn to avoid costly mistakes that may take a lot of time and effort â€" or be impossible â€" to repair. As we discussed at the beginning of this section, new ideas seldom spring from nowhere. Look to the experience of other fields, communities, and countries. Information gathering and synthesis is crucial to the success of the program and to the relevance and

effectiveness of the evaluation. It should start at the beginning of any effort, and contribute to the initial planning. It should also go on throughout the life of the program, so that you can continue to adjust by adding or changing program elements to enhance outcomes, and to generate new ideas. If you change a method or activity in midstream, your evaluation will not be able to give you a clear assessment of its effectiveness. How much changing you do in the course of a program depends on your intent. There can be ethical issues involved here. If the new treatment proves to be harmful, there is an ethical obligation for the researchers to stop administering it. If, on the other hand, it quickly proves remarkably effective, researchers usually feel ethically bound to extend it to others in the study as soon as they can prove its positive effects. Not all programs necessarily pose ethical problems that are as clear-cut as those encountered in medical studies, but ethical issues should always be considered. The assumption throughout this chapter is that the whole process â€" planning, design, implementation, and evaluation â€" involves multiple stakeholders. Typical stakeholders in a community program or intervention might include: Program participants or beneficiaries Others affected by the program â€" police, medical staff, teachers, etc. Academics or other researchers Community activists Information gathering In a participatory process, information gathering can be enhanced by a division of labor determined by the skills and experience of the participants. If there are academics or other professional researchers involved, it would probably make the most sense for them â€" or others with research experience â€" to review the evaluation literature. Members of the affected population might be the best ones to collect information about the history of the issue in the community, and about how it currently affects people. Program directors and staff would probably have the best contacts in the field, and thus the best chance to find information about other similar programs. Those with knowledge in the law and legislation might be the ones to examine policies. There are some limitations here: Synthesis It is especially important that all participants in the process be involved in putting together the information. They may know things about the community that shed light on which elements of other programs might be appropriate and which might not. In any case, information gathering and synthesis, like any other part of the process, should reflect the needs, interests, and abilities of all stakeholders. There are a number of steps to gathering and putting together the information you need. Most of these can be group activities, part of the participatory process. The actual information gathering can be parceled out to specific individuals or sub-groups. Decide what you need to know Not surprisingly, the first step in gathering information is determining what information to gather. There are a number of areas to explore: Details about the issue. These might include its immediate and root causes; its general effects on individuals and communities; its consequences; its development through different stages; its history; and the history of attempts to address it. How the issue has been dealt with elsewhere. People who can help. This category encompasses experts in the field and people or organizations that have run or been involved in successful attempts to address the issue. Who is affected locally, and how. This really comprises two questions: These might include those who work with the first group s in the community teachers, for example, or social workers , those who depend on them, and those on whom they depend. The importance of the issue to the community. Again, this implies a double question: How important does the community perceive the issue to be? Community needs related to the issue. What has to be added to or removed from the community in order to improve the situation? What kinds of approaches will the community respond to or reject? Community history, relationships among groups and individuals that might be relevant to your work, community culture, etc. Who, if anyone, has some influence or control over changing the situation. Public officials and other policymakers are often in this position. Business leaders, landlords, government enforcement agencies, schools, employers, hospitals and health personnel, and members of the affected group itself might also be in the position to change the situation by learning new skills or changing practices. Determine your likely information sources As mentioned above, these encompass existing i. Published sources can be divided into scholarly, mass-market, and statistical, each of which can provide different information and a different perspective on the issue and attempts to address it. The single largest storehouse of information available is the Internet. General knowledge on just about anything is widely available, as are lists of best

practices and successful organizations and the websites of those organizations. Census data and other similar statistical information are also on view. Add to these the information provided by such all-encompassing sources as Wikipedia recently, for all its quirks, found to be just about as accurate across its million-plus entries as the Encyclopedia Britannica , and you have a nearly-bottomless well of fact and opinion to draw from. As always, you have to be cautious: Census data - available on the web and at many libraries Community reports, such as community report cards, self-studies, and needs assessments, all of which should be obtainable through the appropriate municipal offices, and sometimes on the web as well Organizational and agency data, usually a matter of public record if the agency is public or publicly funded In addition to these sources, the broadcast media often present stories about critical issues or about successful efforts to address them. In most cases, such stories only skim the surface, since they have to fit into short time slots public broadcasting, on both radio and TV, breaks this mold more than other media outlets. They can, however, serve as introductions to further research, raising the importance of one or more aspects of an issue, or providing information about effective programs that you can then contact. Natural examples Some of the more likely sources of natural examples: Program directors Friends or colleagues in the field Funders particularly public agencies, because their transactions, including whom they fund and why, are a matter of public record Leaders and members of community coalitions or partnerships Officials who coordinate community-wide efforts Members of the population most directly affected by the issue at hand Current or former participants in or beneficiaries of effective programs People who work in collaboration with programs â€" police, medical staff, teachers, etc. A model from social work or urban design might work in public health, or vice-versa. Devise a plan for collecting information There are a number of considerations here: Who will gather what information? How will the information be gathered?

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If you suspect that the intent is to sell you a product, consider getting additional information from a more neutral source. At other times, the source may not disclose all of the information or may have a bias that is more subtle and difficult to detect.

Request add on test: If cultures are positive and the client is in need of the isolated organism eg, Campylobacter, Salmonella, Shigella, Yersinia, or Vibrio species for submission to a public health laboratory, the client needs to call MML and request that the isolates be returned to them the client. The client will be responsible for submitting the isolates to the appropriate public health department. Alternatively not preferred , clients who want a patient specimen returned from MML should call MML as soon as possible and at the latest within 96 hours of specimen collection to request that MML return an aliquot of the submitted specimen to them. Clients will be responsible for submitting specimens to appropriate public health departments. Cautions Discusses conditions that may cause diagnostic confusion, including improper specimen collection and handling, inappropriate test selection, and interfering substances The detection of microbial DNA or RNA is dependent upon proper sample collection, handling, transportation, storage, and preparation. There is a risk of false-negative results due to the presence of strains with sequence variability or genetic rearrangements in the target regions of the assays. This test is not recommended as a test of cure. Repeat testing should not be performed on samples collected less than 7 days apart. The presence of blood or mucous in the sample may interfere with testing. The following information is provided by the test manufacturer: Detects but does not differentiate C jejuni, C coli, and C upsaliensis. Other species will not be detected. Helicobacter pullorum may cross react. Detects but does not differentiate toxin A gene tcdA and toxin B gene tcdB. A positive result may reflect asymptomatic carriage or C difficile-associated diarrhea. Detects but does not differentiate S enterica and S bongori. Detects but does not differentiate V parahaemolyticus and V vulnificus. The assay may also react with less common Vibrio species ie, V alginolyticus, V fluvialis, and V mimicus. V cholerae is specifically listed when detected. Grimontia hollisae may cross react. Detects Y enterocolitica but does not differentiate known serotypes or biotypes. Y kristensenii, Y frederiksenii, and Y intermedia cross-react at high levels with Y enterocolitica; detection is reported to genus level only. Detects but does not differentiate 2 gene targets typically associated with enteroaggregative E coli; the aggR regulatory gene and the putative outer membrane protein, aatA, both located on the partially-conserved pAA plasmid. Detects but does not differentiate heat-labile LT enterotoxin ltA and 2 heat-stable ST enterotoxin variants st1a and st1b. Cross-reactivity may occur with strains of Hafnia alvei, Citrobacter koseri, Citrobacter sedlakii, and Cedecea davisae. Detects eae gene but does not differentiate typical and atypical EPEC. Therefore, the results of the eae assay positive or negative are only reported when STEC is not detected. Rare instances of other organisms carrying eae have been documented eg, Aeromonas species, Citrobacter species, E albertii, Shigella boydii. The bfp gene is not used to detect EPEC in this assay. For the reasons described above, EPEC may be missed or overcalled. Detects but does not differentiate Shiga toxin 1 stx1 and Shiga toxin 2 stx2 sequences. Shiga toxin-positive results indicate the likely presence of Shiga toxin-producing Escherichia coli. Rare instances of detection of Shiga-like toxin genes in other genera and species have been reported eg, Aeromonas caviae, Acinetobacter haemolyticus, Shigella sonnei, Enterobacter cloacae, Citrobacter freundii, Klebsiella pneumoniae. The Escherichia coli O assay is not reported as detected unless a Shiga-like toxin gene is also detected. Detects but does not differentiate Shigella species from enteroinvasive E coli. Detects but does not differentiate approximately 23 different Cryptosporidium species, including the most common species eg, C hominis and C parvum , as well as less common species eg, C meleagridis, C felis, C canis, C cuniculus, C muris, and C suis , but is not expected to detect the very rare species C bovis, C ryanae, and C xiaoi. E dispar present in high levels may cross-react. Detects G lamblia also known as G intestinalis, G duodenalis. A very low frequency of cross-reactivity with the commensal microorganisms Bifidobacterium and Ruminococcus

species was observed in the clinical evaluation. Detects but does not differentiate F40 and F Does not detect respiratory adenovirus species such as B, C, and E. Detects but does not differentiate 8 subtypes HAstV Does not detect genogroup GIV, nonhuman genogroups, or closely related Caliciviruses. Detects all strains of rotavirus A. In silico sequence analysis indicates that these assays will not cross-react with rotavirus B and C, which are less common in human disease, or rotavirus D, E, and F, which have not been found in humans. Recent oral rotavirus A vaccines may result in patients passing the virus in stool and be detectable in stool PCR testing. Contamination of specimens with vaccine can cause false-positive rotavirus PCR results. Specimens should not be collected or processed in areas that are exposed to rotavirus A vaccine material. Genogroup III will not be detected. Several targets, including Plesiomonas shigelloides, Cyclospora cayetanensis, Entamoeba histolytica, Vibrio species, and enterotoxigenic Escherichia coli did not have an adequate number of positive samples to rigorously assess the sensitivity of these targets. In order to supplement the data derived from clinical samples, spiking studies were completed to evaluate the accuracy of all targets, including those that could not be analyzed by clinical specimens alone. Clinical Reference Recommendations for in-depth reading of a clinical nature 1. Comparative evaluation of two commercial multiplex panels for detection of gastrointestinal pathogens by use of clinical stool specimens. J Clin Microbiol Oct;52 Centers for Disease Control and Prevention: Incidence and trends of infection with pathogens transmitted commonly through food-foodborne diseases active surveillance network, 10 U. Summary of notifiable diseases-United States,