The eNATAL PreNATAL Record

In a previous report three prenatal forms were compared using twenty-four different categories thought to represent the major components of a comprehensive prenatal form. These forms included The Oregon Uniform Prenatal Record, The ACOG Antepartum Record and the "Greensher" Form from Advanced Medical Systems. (Refer to Comparison of Prenatal Record Forms submitted on June 2, 2002.) The eNATAL PreNATAL Record has now also been evaluated and will be the topic of this report. Because this is an "electronic record" as opposed to a "paper record" it was felt that a direct comparison could not be made to the previously compared "paper forms". The primary reason for this was that the data base for eNATAL is very extensive and allows the provider to formulate a practice and patient-specific care plan. This includes automatic risk identification and reminders that essentially eliminates errors of omission. Therefore, an independent report is presented.

As stated by Donald W. Miller, Jr., MD, FACOG, Founder and Chief Architect, "eNATAL is an Internet-based prenatal care system that allows universal access to prenatal records from anywhere there is an Internet connection and also provides clinical decision support in the form of automatic risk- identification, routine and risk-activated patient-specific care plans, highlighting of abnormal values and persistent reminders of pending care items throughout pregnancy".

The following is an edited version of Dr. Miller's comments regarding the twenty-four categories in the previous report, Comparison of Prenatal Record Forms.

- ➢ *Previous Pregnancies*: eNATAL calls this section "Conception Outcomes". Areas include: date, location/provider, presentation, anesthesia, length of labor, fetal sex, weight, gestational age, child's health status and maternal/fetal comments. The outcomes are classified as to live birth, stillbirth, "AB" (spontaneous), "AB" (elective) and ectopic pregnancy. Then "Conception Outcomes" identifies the method of delivery (spontaneous, forceps, vacuum, "C/S", etc.). A unique feature is a category for those patients who have had a previous "C/S". In this category "Conception Outcomes" captures whether VBAC was successful, failed, the patient refused or it was not offered.
- ➢ *Medical, Family and Genetic History*: This again is an extensive data base, much larger than any of the "paper records", allowing quick and accurate patient-specific information.
- ➢ *Allergies*: This category captures allergen/irritants, type of reaction (anaphylaxis, nausea, etc.) and comments.
- ➢ *Medications*: This category captures the medication, "SIG", indication and comments. The user may enter an expiration date. This is kept in the medication history and doesn't clutter the display field when the medication is discontinued.
- ➢ *Habits/Exposures and, Psychosocial Risk Factors*: This is covered under Social History. There is little regarding Psychosocial Risk Factors although comments may be easily added

- ➤ *Physical Exam*: This category is very complete and intuitive. If an area is abnormal, ex. "Vagina", there are subcategories, (ex. inflammation, discharge, monilia, trichomonas, etc) that are automatically available.
- ➤ *Laboratory Data*: There are approximately sixty different lab tests that can be captured, again allowing the provider to personalize the record.
- ➤ *Menstrual Hx/Dating/EDD*: The "EDD Reconcile View" gathers information from lab, history, physical, ultrasound reports and from "Important Dates". This view brings together any data that has to do with dating and calculates an EDD.
- ➤ *Ultrasound*: This category captures the date, type of ultrasound, gestational age, indications and findings.
- ➤ *Antepartum Risk Scoring*: None. Dr. Miller doesn't believe that this has any clinical validity.
- ➤ *Problem List*: They separate the problem list into both a "risk list" and a "problem list". Risks are defined as those conditions that place the patient "at risk" for adverse outcomes and can be linked to a specific care plan. Problems are defined as those conditions, (family history of diabetes, etc.) that may not change management. Both problems and risks are automatically suggested to the provider as a by-product of just entering the history, physical and laboratory data. The clinician decides which are applicable and then automatically builds the problem/risk lists. There can be an unlimited number of each.
- ➤ *Progress Notes*: Any one can add notes (progress notes, phone calls from patients, etc.) and eNATAL can categorize these in at least ten ways.
- ➤ *Patient Education*: There are approximately <u>one hundred</u> education items to choose from. Again this lends itself to a very personalized record.
- ➤ *Social History*: see Habits/Exposures above.
- ➤ *Clinical Alerts*: All clinical alerts are dynamic rather than static as imposed by "paper forms". <u>Every </u>lab test, ultrasound, education item can be presented as an alert at any gestational age during pregnancy. Providers can design their own routine care plans (e.g. education items, Rhogam, on everyone at twenty-four weeks, etc.). These alerts are specific to the provider and to the patient's specific risks (if they are Rh positive, there is no need to have an alert about Rhogam).
- ➤ *Prenatal Care Manual*: None. " Greensher" is the only system evaluated that provides this.
- ➤ *System Review*: The program has the "Medical "History" function as both a "System Review" and a "Medical History" as do many other prenatal forms.
- ➤ *Readability*: <u>Always </u>legible. In fact, since eNATAL is browser-based providers can make the type as big as they want.
- ➤ *Conciseness*: Although eNATAL is more comprehensive than any other prenatal form presently available, one can display the minimum necessary data to make decisions and then "drill down" for more details if so desired.
- ➤ *Cost*: $17.50 per registered OB patient. Dr. Miller estimates that the paper records cost a practice $25–30 per patient when one includes the cost of chart filing, copying/faxing etc.

(There is a special version of eNATAL that allows the provider to add or delete items that they either feel are necessary or unnecessary to their specific practice.)

One of the biggest problems with "paper records" is lack of accessibility. A "paper record" can only exist in one place at one time and only one person at a time can interact with it. If a pregnant patient presents to any place other than the office where her "paper record" exists (ER, L&D, satellite office or a health care facility in another state) there will be no authoritative and updated record available. Even if the record is available to the L&D staff, the provider must completely rely on another person's interpretation of the chart if the provider is not physically present. This entire problem is obviated by the eNATAL System as the complete chart is immediately available to anyone who has security clearance and internet access.

eNATAL's use in risk management, liability reduction and legal defensibility is unparalleled.
- The most current record is immediately available anywhere there is an Internet connection.
- There is automated risk identification.
- Care plans are tailored to the individual patient and her specific risks.
- Clinical reminders are provided at appropriate gestational ages and must be acted upon by the provider.
- Providers must formally acknowledge all reports on a patient (lab, ultrasound, etc.).
- A date/time validation of all patient's risks, problems and care plans are required.
- Abnormal values are highlighted throughout the record making them almost impossible to overlook.
- The record is far more comprehensive and legible than any "paper record".
- eNatal provides automatic compliance with HIPAA privacy regulations.

There are many obvious advantages of the eNATAL Record for patients, providers (physicians, midwives, nurses and office staff) and enterprises (hospitals, large groups, health networks and agencies). First and foremost it provides a tool for better patient care and increased patient safety. It also provides the most complete risk management sensitive prenatal record currently available. eNATAL is an excellent electronic prenatal care system based upon those that I have reviewed.

I see no disadvantages to the system. Certainly there is always some discomfort to changes but the future of medical information is 'electronic'. The advantages of eNATAL far outweigh any "growing pains" one might encounter in converting. Remember this is a "low-tech" setup. All you need is one computer, a printer and an Internet connection.

Dr. Miller's credentials include fourteen years of practice as an obstetrician/gynecologist, a postdoctoral fellowship in Medical Informatics at the Yale University School of Medicine and Physician Executive at Cerner Corporation, a leading Health Information Services company.

I highly endorse eNATAL to anyone providing obstetrical care. For more information please visit www.eNATAL.com

(*Submitted by Louis A. Marzano, MD, FACOG, September 12, 2002*)

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