At HPG, we are specialists in assisting health systems that have chosen Cerner Millennium® as their strategic HIS. In this three-part whitepaper on Optimizing FirstNet®, we asked Dr. Michael Fossel, MD, Consulting Physician, Clinical Adoption for HPG, to share his experience on this important topic.

Emergency departments rely on speed: all emergency department solutions – such as FirstNet® or PowerNote™ – must be optimized to reflect the need for an efficient and rapid workflow. This is not only crucial to the users – physicians and nurses – but equally crucial to both patient flow and patient safety. Any delay in emergency care increases patient risk. In the emergency setting, as opposed to most other areas, care must not only be efficient, but as rapid as possible. One uncommon system design decision – with unfortunate consequences – is to restrict the user to a single ED patient chart at a time. Although usually done with the intent of decreasing risk or error, the outcome is frequently just the opposite: an increase in patient risk due to the physician’s workflow being constantly disrupted in the midst of clinical action, when physicians are forced to close the chart they’re working in, and open and close a second chart to handle the interruption before they can return to the first chart and try to resume their prior clinical workflow. Overall, any considerations of design, build, and customization of FirstNet® or PowerNote™ must reflect the need for both efficiency and speed. This is equally true for all three primary roles of any EHR:

- **Viewing data (Part 1)**
- **Placing orders (Part 2)**
- **Documenting (Part 3)**

**Part 3 – Documentation/Conversion Strategy**

**Documentation (PowerNote™ and Dragon):**

Emergency department documentation generally incorporates both an electronic template (PowerNote™) and voice recognition (Dragon). These two solutions work well together, but there are several points that can improve usage:
Most training emphasizes how to create macros, but not which macros to create. Most adept clinical users emphasize the use of the following:

- **“Layered” macros**, in which a set of macros are constructed in layers, allowing the user to “hone in” on a finding. For example, the first layer in the physical examination might specify that a superficial but broad physical exam was done and was normal. The second layer in the cardiac portion of the exam might specify that a detailed and comprehensive cardiac exam was normal. The third layer might be that an S4 was found. In this example, the entire exam (most of the exam was normal but superficial, the cardiac exam was normal and detailed, but there was an S4 murmur) requires only three clicks to document.

- **Positive macros**, in which common constellations of exam findings are used to specify a likely diagnosis. Many adept clinical users, for example, have four standard macros for the abdominal exam: normal, LLQ tenderness, RLQ tenderness, and RUQ tenderness. These suggest the following, respectively: no pathology, diverticular-like findings, appendicitis-like findings, and hepatic/gall bladder findings. Coupled with specific exceptions and additions, these allow the user to “hone in” on a complete examination with fewer clicks.

- **Procedure macros**, in which routine procedures can be added and documented with a single click. Typically, these include endotracheal intubations, suturing (simple, complex, and with dermal adhesive), anterior shoulder relocation, digit relocation, lumbar puncture, etc. While physicians differ in approach and different ED’s may use different procedures, each physician in each ED generally performs certain routine procedures in the same way every time, making it easy to document procedural details, followed by exceptions and additions as warranted.

Most adept ED physicians, although taught to type or use the outline to find the template desired, actually use either the “recent” tab or the “favorites” tab, either of which is more efficient than other approaches, unless the triage nurse is accurate in choosing a reason for visit that suggests the appropriate template.

In navigating PowerNote™, do not scroll or click, but use the table of contents to rapidly find the paragraph desired and move it to the top of the panel.

Never use “save and close” unless it is unavoidable. This step merely slows down the workflow when the physician has to reopen the chart.

Macros work well for the review of systems and the physical examination, but do not work well for either the history of present illness or for medical decision making. It is easy to use macros to document an intubation, but typing or voice recognition is needed to explain why the patient was intubated.

Both PowerNote™ and Dragon work best if:

- The physician is fully trained, preferably under a clinical instructor.
The physician has support for the first week of use.

The physician receives supplemental (re) training after 2-6 weeks of use.

There are a number of “navigation tricks” and other ways of ensuring user efficiency. It is important that physicians master these “tricks” and that they be reevaluated for their use and retrained if necessary.

“How to Convert or not…that is the question”
Big-bang CPOE, PowerNote™ and Dragon versus one-at-a-time introduction:

Generally, a conversion is more successful if done one-step-at-a-time. However, many ED’s have converted simultaneously with CPOE, PN, and Dragon. Success correlates with the wishes of the ED staff: those that push to have access to all of these solutions at once will do well; those that have reservations about going live with everything at once will have significant problems. This is related to the stress of the department and the perception of the project by the clinical users and a good project leader will follow the wishes of the users in this regard. In general, however, the most successful ED’s generally start with CPOE, then follow with PowerNote™ at a later date, usually after several weeks. Note that for reasons of patient safety, CPOE must be all-or-nothing, but this is not true of electronic documentation, which can be started gradually. While most hospitals start PowerNote™ (and often Dragon) on a single day, others have allowed certain physicians to use PowerNote™ or have suggested that each physician begin with a small number of PowerNotes™ per day, then increase that number as they increase their speed and comfort. The same is true for Dragon, which is generally started on a single day, but can be introduced on a more gradual basis. The key requirement is that the conversion be done in such a way as to minimize user stress, consistent with patient safety.