In 1996, two members of an architectural design firm, Joanne McKay, RN, MSN, CEN, and Jon Huddy, AIA, MArch, NCARB, authored an article that identified the top 25 problems to avoid when planning a new, expanded or renovated emergency department construction project. (Huddy, J. and McKay, J., “The Top 25 Problems to Avoid When Planning Your New Emergency Department.” Journal of Emergency Nursing, Volume 22, Number 4, August 1996.) Now, more than 10 years later, Huddy and his colleagues have developed the “next top 25 problems to avoid” based on their involvement in more than 150 emergency department projects. In the following summary are these next top 25 problems that you should identify and avoid in the planning and design of your emergency department of the future.

1. Selecting the wrong in-house design team

While the architect you select for your project is important, the most important members on the “design team” are within your own hospital. The problem to avoid is not having ED personnel on your in-house design team. The hospital in-house design team needs to include ED charge nurses/shift flow coordinators, ED physicians, staff nurses, registration staff, unit clerks, and ED techs along with ED leadership team members who are committed to the meeting schedule and will serve as project ambassadors to other staff members for the life of the project.

2. ED staff monitoring and acting on incomplete or misleading ED performance data

Data is power; the wrong data makes you powerless. Emergency departments have become competitive business environments requiring hospital and ED leaders to collect, monitor and evaluate departmental data. Identifying annual volumes and length-of-stay data is an important first step to defining the future operations for your new ED.

3. Failure to use computer simulation modeling to test operational efficiencies and physical design solutions

Assuming a new design will meet your needs is a problem you can avoid. Computer simulation modeling is a powerful tool that allows you to actually see how your design will operate in reaction to changing acuities and patient volumes. Not all architects use computer simulation modeling, so ask if this tool is part of their process in helping you understand how the new ED will function.

4. Planning for traditional triage and registration space at intake

Avoid the problem of designing around old-fashioned operational processes. Incorporating quick registration as part of the triage process removes traditional registration work space from the intake area of the ED. Make sure your design supports the ability to conduct a brief, focused assessment as part of a triage process that streamlines the patient to the available treatment space.

5. Unsafe triage rooms

Triage rooms with only one door into the room are unsafe, because a staff member can be trapped in the room. Each triage area should have two separate access and exit points. Not only does this design allow for the “flow through” of patients rapidly through triage and back into the ED, but the design makes sure that staff members always have immediate access to an exit point from the room.

6. Not providing universal private treatment rooms

Nothing reduces operational efficiency like separated patient care modules. Universal private treatment rooms allow ED staff to place any patient in any room. Standardized treatment rooms with respect to sizing, layout and equipment provide improved staff efficiency. Integrating rapid treatment space, or quick care space, into a “universal exam room design” allows any area within the ED to become both a non-acute area as well as a seamless part of the overall ED.

7. Not identifying surge capacity

No ED can be designed large enough for an unlimited surge in patient volume. However, EDs must identify and plan for surge capacity in a way that allows the architecture to support these unexpected volume surges. Flexible, expandable treatment rooms, flexible support areas that can transition to patient care and adjacent clinical departments should all be analyzed for a proactive plan for volume surges.

8. Thinking that you only need one central nurse station

Today’s EDs are too large for only one central charting/work area. Decentralized care teams support the staff working in flexible zones or districts. Charting work space at the care teams supports physicians’ and nurses’ documentation needs, including privacy for phone calls and exchange of sensitive patient information.

9. Not planning for an EDIS (Emergency Department Information System)

Planning for a fully-integrated information system means designing an ED to support an EDIS. Use your IS department to brainstorm how the ED should be shaped to accommodate a clinical information system from day one.

10. Forgetting to consider staffing changes with a new design (staffing roles, types, responsibilities)

By not considering new staffing roles, types and responsibilities, you are missing a great opportunity to design your ED of the future both operationally and physically. A new physical design will push you to consider a new staffing model, so it is very important to prepare for and plan for staffing changes when designing a new ED.

11. Inadequate or distant support space

Too little...too far away. Too many times the design focuses only on the exam rooms when designing an ED. The clinical support space (clean, soiled, medication, nourishment, equipment, etc.) needs to be quantified and incorporated in the very earliest design concepts.
12. Support rooms blocking vision across the department
Now that you have quantified the amount of support space and rooms that you need in a design, make sure that the clean, soiled and toilet rooms are not “right in the middle of the nurse station.” While these rooms need to be immediately accessible, you don’t want them blocking vision from one side of the ED to the other side of the ED. Put these rooms on the periphery of the department, adjacent to the exam rooms. This keeps the rooms “out of sight lines” but easily accessible for the staff.

13. Forgetting about all of the extra equipment
No matter how much equipment you think you will have, you will have more and more in the future. To make sure you aren’t tripping over the various pieces of equipment, put as many alcoves in your design as you can. Alcove storage in corridors is a design feature that will never go underused.

14. Not planning for adequate family or patient consulting space
Be sensitive to the privacy and confidentiality needs of family members. Too often, the family consult spaces are too small to handle large families, leaving sensitive discussions to occur either in public waiting rooms or out in crowded corridors.

15. Inappropriate-sized medication rooms
Medication rooms need to be designed to accommodate larger medication dispensing units, while also supporting workspace and computer charting areas. While these medication rooms need to be secured, enclosed rooms, we recommend that you use windows or clear glass for the walls around the room for constant supervision into the room.

16. Not considering support space for other clinical team members
Identify current as well as future programs that will need to be incorporated into the ED design such as clinical pharmacist, occupational health/employee health, residency programs, crisis response teams, case managers/admission nurses. Remember to plan for space to accommodate the ED administrative team.

17. No provision for ED Imaging or CT Scan
EDs as small as 20,000 annual visits are incorporating CT and radiology into their designs. If you are going to be transporting patients out of the department to imaging, consider how far they need to go, who will be doing the transporting (nurse or technician) and what impact this process will have on throughput times.

18. Neglecting staff-focused design elements
Staff retention and satisfaction is quite important for any hospital today. Providing amenities such as a “quick break” area within the ED or a staff lounge with natural light offers respite from the long and hectic pace within the ED.

19. Not understanding all the various considerations for a secure ED
Just having security in the ED was a big idea 10 years ago. Now, providing security for patients, family and staff requires comprehensive operational and physical planning. Escape paths, panic buttons, electronic locking mechanisms, visitor policies and numerous other issues need to be addressed during design in support of a safe, secure environment.

20. Not considering the impact of a Life Flight program
While Level I trauma facilities usually consider the helicopter and heliport in their design process, other EDs may fail to do so. Will a Life Flight team deliver patients to you, or will you be transporting patients to other facilities? These considerations may help in determining the ultimate location for a heliport.

21. Forgetting about the “outside” design
While your design team is focusing on the final locations and configuration of the exam rooms “in” the ED, don’t forget about what needs to happen on the “outside” of the ED. Improper site planning for emergency vehicle access and patient drop-off is a major mistake found in various ED designs.

22. “Band-aiding” ED infrastructure
Building codes change in a constant effort to better protect life and limb, and many of these codes reference engineering infrastructure “above

(See Top 25 Problems page 36)
the ceilings” and “behind the walls” of your department. Make sure you have a qualified engineer on your team to identify the infrastructure needs including appropriate designs to support hazardous events and decontamination of patients.

23. Not correctly locating and providing appropriate decontamination room/space

In older designs, the decontamination shower was always placed next to the ambulance entry vestibule. Many current state codes or guidelines recommend that the decontamination shower access be provided away from the ambulance entry, so as not to contaminate this area, preventing access by other patients.

24. Not having adequate space in support of current and future disaster planning programs

Minimal site planning will accommodate ambulances and automobiles. However, considering the implications of your disaster plan during ED design will add a layer of complexity to the site planning. Staging for fire trucks and additional emergency vehicles, multiple automobiles, decontamination vehicles or tents with access to electrical and plumbing outlets and other items need to be considered during ED design.

25. Living in the past instead of planning for the future

Designing for a renovated, expanded or new ED allows you the opportunity to consider multiple operational, technological and physical design items. Don’t be caught in the past, look to the future. Don’t let the bottlenecks, redundancies, inefficiencies or cramped environment of your existing ED negatively affect your vision of what your future ED could, or should, be. The future is yours, seize it!

Top 25 Problems
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Board Meeting
(Continued from page 3)

sustainable PH preparedness system and to send an ENA representative if the grant is funded.

• Agreed to nominate an ENA representative to one of the Society of Chest Pain Center’s (SCPC) 10 subcommittees of the accreditation committee.

• Approved remaining consent agenda items, including:
  • Approved the 2008 ENA Public Service Award recipients as presented.
  • Approved reprioritization of 2008 strategic government affairs activities as presented.
  • Approved the revised position statement titled: “The Obstetrical Patient in the Emergency Department” as written.

Highlights of the July 19–20, 2008, ENA board of directors meeting will be in the next issue of ENA Connection.

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Dr. Mel Weiss, ED Director
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