THE VERMONT RURAL HEALTH CONSORTIUM

The following is a reprint of a press release dated 10/8/86, announcing the formation of The Vermont Rural Health Consortium. It is believed to be the first such endeavor of its kind in the region. Along with the stated hopes of the consortium, involved hospital engineers feel positive towards the concept in the terms of shared concepts in the area of facility management.

Jack Gosselin, Editor

Four rural hospitals serving northern and central Vermont are joining together to form The Vermont Rural Health Consortium.

The boards of trustees of Copley Hospital in Morrisville, Gifford Memorial Hospital in Randolph, North Country Hospital in Newport, and Northwestern Medical Center in St. Albans have just approved this new organization. This comes at the end of a five-month planning process involving the chief executive officers and representatives of the medical staffs and boards of trustees of these four hospitals.

The consortium does not represent a merger of the four hospitals. It is a new organization to which each of these four independently managed, small regional hospitals belongs.

We've designed this consortium to allow us to share our resources — money, staff, expertise, talent, and equipment — in order to continue to provide the range of high quality services upon which our communities have grown to depend, and to be able to expand our services more efficiently and effectively.

By sharing resources we will become more competitive, more innovative, and more flexible — better equipped to adapt to a changing environment and to continue to provide a wide range of services to our communities at reasonable cost.

Through our consortium we can share in computer technology and management, making our systems compatible and giving us greater computer capability at a lower cost. We can introduce new services which none of us alone could support, by sharing a particular medical expertise or a piece of sophisticated equipment. We can better take advantage of opportunities in the future by planning for the future together instead of separately.

The Vermont Rural Health Consortium will also allow us to represent the cause of small rural hospitals more effectively. The consortium will be a service organization to our hospitals, not a lobbying group, but we know that by joining together we will be a stronger voice for state of the art rural health care.

The Vermont Rural Health Consortium will be an independent organization with its own headquarters and executive director. It will be governed by a board of directors drawn from each of the member hospitals, representing administration, medical staff, and trustees. Together, this ensures that the consortium not become overly dependent on any one hospital or group, and that its leadership devotes full-time effort into building this service organization and making it reach its full potential.

Today all hospitals need to make better use of fewer resources. This is especially true for small rural hospitals, whose resources are more limited to begin with, but which still strive to provide state of the art medical care to their communities. The Vermont Rural Health Consortium is designed to make its members even more effective.

EMERGENCY GENERATOR CONTINGENCY PLAN

A recent change in Joint Commission for accreditation of Hospital Standards requires the Engineering and Maintenance Department to have a contingency plan for failure of essential systems. This is spelled out in Section 15 of the 1986 Accreditation Manual, Plant Technology and Safety Management. What it states is that there must be a written procedure specifying the action to be taken during a failure of the hospital's essential systems and equipment.

I should like to share with you how we addressed on such failure or potential failure. On no less than two occasions we lost our emergency generator due to mechanical problems. These problems were such that the unit would be down for some time, requiring that we bring in a temporary rental emergency generator and wire it into our system while the corrections were made to our inhouse generator set. Depending upon your wiring and distribution system, this could be an easy tie-in or a major wiring project. In our case, our 385 KVA generator set happened to be a major project to disconnect and reconnect.

In any event, if you write up how you would supply such temporary backup emergency power source in a procedural format that can be implemented by key members of your staff, you would meet the intent of the Standard as it relates to the failure of the emergency generator set.

Since disconnecting and reconnecting our 385 KVA unit was a major project, we installed a manual double-throw transfer switch and permanently wired it into our electrical distribution system. The switch was located on an outside wall making it easily accessible to the location where the temporary rental generator is parked.

The last time our inhouse generator was down for three days which we replaced the cooling system. WE had the rental unit brought in and tied-in the leads and control wires to the double throw switch. This tie-in took less than thirty minutes including phasing and testing. Then, we simply threw the double throw switch. Our house generator was isolated and the rental unit ready to go. Anyone of several ATS' could then call this unit to start exactly like our

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A Brief Look at Fire Experience in Health Care Facilities

Based on national estimates of fires reported to fire departments during 1980 through 1983, fires in all health care properties but medical offices accounted for 30 civilian deaths, over 500 civilian injuries, and an average of more than $15 million in direct damage per year.

Table 1 shows the estimated overall size of the annual fire problem for each type of health care facility that can be identified in the NFPA’s fire incident bases. Not shown is the class consisting of institutional properties of indeterminate type, which could be health care properties, child care facilities, or penal institutions. Medical offices, which the data bases classify as offices rather than health care facilities, are shown here for comparison but cannot be separated from other types of research and scientific offices. Health care properties accounted for 6 percent of the reported fires in all nonresidential structures between 1980 and 1983, for 12 percent of the associated civilian deaths and injuries, and for less than 1 percent of the associated direct property damage.

Facilities for the care of the sick and injured accounted for more fires and more property damage than all other health care facilities combined, excluding medical offices, while facilities for the care of the aged accounted for more deaths per year than all other health care facilities combined. The risk of death or injury per fire is also highest in facilities that care for the aged. On average, medical, research, and scientific offices experience the most severe property dam-

There were six large fires in health care facilities between 1980 and 1983. Two were multiple-death fires, both in facilities providing care for the aged. One of these fires, in a facility with a nursing staff, killed three people, while the other, in a facility without a nursing staff, killed four. The other four fires were large-loss fires, all of which occurred in facilities for the care of the sick and injured. The three which occurred in hospitals caused a total loss of $3.5 million. The fourth, a clinic fire, caused a $1.5 million loss.

A cause analysis was done for the two largest specific health-care property classes, which are hospitals and facilities that care for the aged and have nursing staff (hereafter called nursing homes). The dominant finding was the role played by accidental fires involving smoking materials, matches, or lighters. In hospitals, they accounted for 37.4 percent of reported fires, 84 percent of civilian

| Table 1  |
|---|---|---|---|---|
| **Type of Facility** | **Fires** | **Civilian Deaths** | **Civilian Injuries** | **Property Damage (× 1,000)** |
| Care of sick and injured | 8,100 | 6* | 250 | $8,600 |
| | (7,200) | (6) | (228) | ($6,900) |
| | (Clinics, clinic-type infirmaries) | (200) | (0) | (1) | ($1,400) |
| | (Sanitariums) | (300) | (0) | (9) | ($100) |
| | (Other, unknown type) | (400) | (1) | (12) | ($200) |
| Care of the aged | 4,300 | 18 | 201* | $2,400 |
| | (With nursing staff) | (3,500) | (15) | (175) | ($1,600) |
| | (Without nursing staff) | (500) | (2) | (18) | ($700) |
| | (Other, unknown type) | (300) | (1) | (9) | ($100) |
| Care of mentally handicapped | 3,270 | 6 | 65 | $4,100 |
| | (Mental institution) | (2,590) | (0) | (43) | ($3,100) |
| | (Mentally retarded) | (310) | (2) | (11) | ($400) |
| | (Other, unknown type) | (370) | (4) | (11) | ($600) |
| Medical, research, scientific office | 950 | 0 | 16 | $7,200 |
| Care of physically inconvenienced | 240 | 0 | 4 | $200 |
| | (Physical rehabilitation) | (40) | (0) | (0) | ($0) |
| | (Deaf, mute, or blind) | (80) | (0) | (3) | ($100) |
| | (Other, unknown type) | (120) | (0) | (1) | ($100) |

Note: Fires are estimated to the nearest 10, civilian deaths and injuries to the nearest one, and property damage to the nearest $100 thousand.

* Estimates for primary groups may not equal sums of estimates for subgroups because of rounding error.
Flexibility in facility master planning

As health care institutions face up to obsolescing facilities and the need to make changes in existing plants to accommodate new and reshaped product lines, they still need to follow a few planning verities.

It is easy to overlook functional planning principles in the name of expediency, but a day of reckoning is inevitable. The initial or perceived solution to a functional problem may not be the best answer.

No matter how small or large the building component — new construction or recycled existing elements — these eight well-established and time-tested master planning principles continue to apply:
1. Site use must anticipate the ability to respond to the changing dynamics of health care. New treatment modalities, technologies, products, and the shift from inpatient to ambulatory care will continue to make new demands on building use and flexibility.
2. Public and patient traffic should be separated to the greatest extent possible.
3. New construction or costly remodeled service components should be well separated from building elements which have priority for complete replacement in the foreseeable future.
4. Design or positioning on the site should consider future opportunities for expansion or changes in building element use.
5. The location of entrances and public and personnel parking should enhance internal traffic control.
6. Time/distance factors should be carefully evaluated when deciding between vertical or horizontal expansion.
7. A building structural system should anticipate the possibility of future modifications. The column system, spans, interstitial spaces (when appropriate), and ceiling heights which meet only immediate needs and make future adaption of the building module difficult or impossible.
8. Mechanical systems, including energy conservation and over- or under-design of these systems, impact on initial and long-term operating costs. Planning alternatives should consider the longer-range impact on life-cycle costs.

Ignoring these functional planning principles leads to some very predictable problems.

Negative Consequences

New product lines often require new construction or a major recycling of existing facilities, and new construction will be difficult or less than operationally efficient if site planning was not well thought out.

Site planning impacts the availability of ground space, location of entrances and, in turn, internal and external traffic flow.

When the location of public parking encourages visitors to use the emergency or outpatient entrances, confusion and work interruption ensue.

Many hospital plants will eventually need total or partial replacement. Adding new construction or extensively modernizing areas adjacent to obsolescing elements is an exercise that will make future functional planning decisions difficult and costly.

Changes in building use compound internal traffic problems if the principle of separation of patient flow — both inpatient and ambulatory — from visitors and outside service deliveries has been ignored.

Ambulatory Care on Upper Floors

As emergency and ambulatory services grow in importance, health care providers have become even more enamored with horizontal expansion. They find it difficult to comprehend that vertical transportation may be quicker and more efficient.

In addition, horizontal expansion often aggravates internal traffic and time/distance problems.

We encourage clients to examine carefully the possible use of upper levels for ambulatory care and outpatient services. For example, vacated patient spaces on upper levels may provide an excellent site for ambulatory surgery patients.

Use of space at upper levels for outpatient activities should again consider entrances, adequate vertical transportation, and internal traffic separation.

Structural System Planning

Corridor width and room sizes are functional derivatives of the building structural system. Careful planning of column spacing and structural spans can provide maximum flexibility for future adaptability of building elements. Corridor widths become important in surgical, radiographic, and other high-use areas, a consideration often overlooked.

Position Elevators To Aid Expansion

Among the most poorly thought out elements in multistory facilities are the design and placement of elevators. Elevators should be planned and positioned for future expansion, not buried deep within a building where change and modification are costly if not impossible.

Careful adherence to planning principles can also avoid mixing patient, public, and service traffic on elevators. Mechanical system changes are costly and disruptive. It is better not to build at all than to build modifications with inadequate mechanical support. Adequate need not mean over-design.

Continued next page
Rational, Functional Planning

In the days before economic realities and regulation-imposed construction moratoria, some progress was made toward distinguishing between buildings designed and constructed ostensively for health care purposes — and the more rationally planned functional entities which respond to patient needs and expedite care delivery. These functional lessons should not be lost during current construction furl.

Address Costs Up Front

There is no reason for users to be misled into unaffordable projects if owners address construction and equipment costs up front. At that point, a functional and space program based on affordable, sound, functional master planning, can be developed to respond to the needs at hand.

Unless an existing building has been badly garbled, it usually costs less to follow enlightened planning principles than to be tempted by expediency to deviate from them. An experienced functional planning consultant will help avoid this situation.

Unfortunately owners often mislead themselves or are misled by others. They accept mindsets about where and how a new building module is to be placed before they comprehend the impact of the decision or have an understanding of how these principles may apply.

Adherence to these eight facilities planning principles provides all the latitude required to achieve good responses to the functional demands of a health facility. ■

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