Before the U.S. Senate Committee on Indian Affairs

"Factory Built Medical Considerations for the Indian Health Service"

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Written Testimony of

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I am Dr. Paul K. Carlton, Jr., currently a professor of surgery at The Texas A&M Health Science Center, TAMHSC, and the retired Air Force Surgeon General. As part of the Texas A&M land grant mission, the TAMHSC seeks to provide solutions to the many challenges we face in healthcare delivery, particularly in rural, frontier, and emerging regions. This includes training providers willing to serve these areas, promoting the use of innovative technologies to increase access to healthcare, and application of the breadth of science across the Texas A&M University System to improve the public health. This focus on solutions led to a joint conference hosted by the Texas A&M Health Science Center and the Texas A&M College of Architecture in the fall of 2007. This conference presented a pioneer effort on how to use the component building method

in medical applications. Out of this conference came many new and innovated ideas for the reconstruction of Iraq, applications for Air Force facilities and applications for the Indian Health Services. These medical construction innovations comprise the rest of this testimony.

The building industry in our country has been undergoing a revolution in efficiency using new methods and new thinking with pre-fabrication of larger portions of buildings, done in climate controlled factories. The Modular Building Industry has been leading this charge by progressively improving their quality, their efficiency, and their timeliness. They currently have over 100 manufacturing facilities scattered across our country.

They recently started moving into the healthcare field with both in-patient and out-patient facilities. The largest user of out-patient, pre-fabricated facilities has been in the dialysis field. By moving these facilities closer to their population served, they are able to give better service, closer to home. The in-patient pre-fabrication world opened with a full up hospital in Bensalem, Bucks County, PA., in 2007. This was a combination of factory built and site built. The factory portion of this building is what allows the efficiencies and quality improvement that have been noted. A consistently superior quality has been delivered by these factories because of the excellent working conditions that are not influenced by weather or availability of professional workers. These are done in a factory by a staff that does tasks repetitively, increasing their individual productivity as well as avoiding the weather delays. The facilities were even certified as meeting all standards before leaving the factory by the State of Pennsylvania. The transportation issues are worked through by designing exactly what the transportation system will allow in terms of moving these larger portions of buildings.

A provider of these types of facilities, U3 Innovations of San Antonio, along with Modern Renovators and Aspen Street Architects built the Air Force their first truly component, pre-fabricated section clinic in the last six months at Creech AFB, Nevada. All of these businesses participated in the fall semester project with the College of Architecture and Health Science Center at Texas A&M in 2007. This clinic was to fulfill a need that had languished for over two years, with no bids coming close to the allocated amount of money. Using pre-fabricated sections, this clinic was built in four and a half months and on budget for $1.5M. Our group from the fall project held a grand opening for all of our colleagues to see what high quality this building represented. It has an all-steel frame, concrete floors, and an exterior that blends with its surroundings nicely. It was built in six components in Loretto, TN., and transported by truck to the site. The beauty of this approach is that it was built to cost and we will add a nicer parking lot and nicer roof as money becomes available. Pending those, we have a fully functional facility to meet the needs of this isolated Air Force Base so vital to the current wartime mission.

Our critical access hospitals (and many urban hospitals) have now reached their life expectancy, having been built about 50 years ago under the enlightened funding initiatives of the Hill-Burton act. These under 25 bed facilities, vital to the nation's healthcare system in rural American, need to be replaced and we cannot afford to do so. A critical access hospital construction project in Tehachapi, California, was recently estimated at $67M, to be completed in three to four years. The similar sized pre-fabricated hospital, using all components, had been contractor proposed at $25M. It was cancelled because pre-fabricated construction was considered unacceptable. Standards are standards and both would have met all standards. Unfortunately, the change was

more than Tehachapi was ready to accept. Change is hard for all of us but fiscal reality has to be considered at some point.

One innovative physician executive from Nashville**, Dr. Jerry Tannenbaum**, has designed such a critical access hospital and is ready to write contracts on such facilities for $14.5M. That design includes 12 beds, two large operating rooms, a post anesthesia recovery unit, a complete imaging suite, a full laboratory, a 12 bed patient wing, Emergency Department, and administrative section. This would be 33,000 sq ft, all pre-fabricated, and up in nine months from contract signing with a fixed guaranteed price. Comparing that to the $67M that Tehachapi estimated for their hospital and you have to say "what is the difference?" Can we afford to resist change at that difference in price?

I am currently involved in the rebuilding process of medical activities in Iraq. We are proposing all pre-fabricated section type construction for them, using the work force in America, to rapidly solve many of the pressing issues they face in medicine and in housing. We have also proposed using mobile surgical vans, that meet all standards of care, to turn any clinic into a full up hospital whenever and wherever it is needed. The Iraqis currently have one of these units in country and love its flexibility and ease of use.

How does all of this then apply to the Indian Health Service? I believe that what we have learned could easily be applied by providing better service to the Indian Nation at a more affordable cost:

1. In–patient facilities: If we used the critical access model proposed by Dr. Tannenbaum, the physician from Nashville, at $14.5M each, you could provide twice the number of hospitals for the same cost. A similar component model by the Rural Health Consortium in California, comprised of 13 critical access hospitals, has similar numbers. If you used either of these models, tailored it to the exact size needed in any location, using pre-fabricated sections, you could cut down on the $2.4B construction backlog that currently exists for the Indian Health Service. Better service at a lower cost is hard combination to beat.
2. Out-patient facilities: If we use the Creech AFB model for clinics for the Indian Health Service, we could be building modern state of the art out-patient facilities for fractions of the cost of what we are paying now. The issue of timeliness is also a critical portion here- these are done in a factory, with fixed pricing, and they meet delivery dates because weather is not a factor.
3. Mobile Medical Care- You could also use the mobile surgical vans, as the Iraqis do. These vans are used in our country for operating room renovations routinely and meet all standards of care including Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), Medicare certification and state licensure. They would allow us to turn any clinic into a full up hospital for the number of days per month that it would be effectively used at our more remote Indian Health Service locations. This would allow each reservation to have surgical or other specialty services offered to them as the need dictated. The real payback for using such a concept is that by providing better service for the Indian Nation, we would be fulfilling a training requirement for the Public Health Service. We call this the "Thursday Hospital" concept, moving the surgical vans

from place to place as demand exists. These vans, which are totally self-contained, could then be the foundation of a national response system for any medical large scale disaster. Since they meet all standards of care, they can be used daily for non-emergency healthcare. The Indian Health Service, comprised of Public Health Service people, would have been using them daily, so no equipment training would be required to respond to national emergencies. You would use them like you use a portable CT scanner or MRI machine, simply have a docking station built onto the clinic or hospital so the patient never has to move outside. To have the potential of superb mobile facilities, no training tail involved for the professional staff, and used every day is exciting to contemplate! There would then be little fixed cost for preparedness for equipment for our nation in times of a medical emergency. From a national preparedness perspective, this is a very cost effective alternative to consider.

The Indian Health Service has a great mission, to take care of the health needs of our Native Americans. You have a great group of people to do this with, the Indian Health Service medical professionals. Perhaps these new methods for providing high quality facilities could enhance the delivery of healthcare to this deserving group of people- at an affordable cost. I encourage you to look closely at all I have discussed. Go see the facilities I have described in Bucks County, Pa; at Creech AFB, NV; and in St. Johnsbury, VT. Look closely at how to allocate the tax payer dollars involved. I believe that you will find this revolution in the building industry applicable to the Indian Health Service and other federal building projects.

Thank you for this opportunity to share these thoughts.