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The Iowa PERINATAL Letter

As Director of the Statewide Perinatal Care Program, I am delighted that Dr. Herman Hein agreed to write a perspective on the importance of regionalized perinatal care. Dr. Hein developed the concept of regionalized perinatal care in the State of Iowa in the early 1970's. This innovative and far-reaching approach was responsible for a marked decrease in perinatal morbidity and mortality in the following decades. As Dr. Hein outlines below, this approach is as important today as it was 30 years ago.

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Regionalization of Perinatal Healthcare- Important Then and Equally Important Now

In the late 1960's and the early 1970's I was involved with the first steps to develop a system of perinatal healthcare that would offer all newborn babies, regardless of place of birth in Iowa, a reasonable chance for healthy survival. It was no secret then or now that Iowa has limited healthcare resources due to its rural nature and thus low population density.

At the time (1968-1973) I was practicing pediatrics in Dubuque, Iowa and came to realize there was a need to become more aggressive in the care we could offer sick or very immature neonates. This was largely because healthcare measures for neonates such as mechanical ventilation, aggressive treatment of infection and management of metabolic needs were dramatically improved. Also, and equally important, obstetric management of high-risk pregnancies became more aggressive and much improved over previous somewhat laissez faire management of troubled pregnancies.

The net result was that newborns were surviving intact that previously had died or lived, but only with severe physical and/or mental limitations. Unfortunately, this improvement in care was initially only available to those who had access to major medical venues such as teaching hospitals located in large cities or associated with colleges of medicine.

The challenge was obvious. How could we make improved perinatal healthcare available to all mothers and babies regardless of place of residence? Our first steps were indeed "baby steps" (no pun intended). Dubuque had always served as somewhat of a referral center for surrounding towns such as Maquoketa, Dyersville, Bellevue, etc. On one of my "on call" days I received a call from a Maquoketa physician who was caring for a baby with gastrointestinal problems and he was not comfortable providing further care. He believed that the baby was too sick to be transported by the parents so I agreed to come to Maquoketa with the best transport equipment that we could assemble under the circumstances.

The baby was successfully transported to Dubuque and with the help of local surgeons, nurses and my pediatric colleagues, we enjoyed a successful outcome. During the process of the baby's recovery, I frequently called the referring physician to inform him of the baby's progress. During one of these calls he suggested that he had learned a great deal during our conversations and asked if I would be interested in coming to Maquoketa to provide educational sessions to the family physicians that were involved with newborn care. I was happy to do so and we agreed that I would review a number of charts of newborns born at the local hospital that had various problems. These cases would be used to serve as a basis for the educational sessions.

I made the trip to Maquoketa on my next day off and we enjoyed a very satisfying educational session. These sessions were repeated a number of times in the future. This experience was really the template for the Iowa Statewide Perinatal Care Program and for the Iowa System of Regionalized Perinatal Healthcare.

Mercy Hospital in Dubuque responded to the need for a special care unit for sick babies and soon had renovated an area near the delivery room and newborn nursery on the fifth floor. We developed educational sessions for a core group of nurses who were interested in providing care to the sick neonates. The nurses welcomed the challenge of caring for such babies.

The Dubuque unit served the region well then as it does today. However, there is a limit to the extent of care that can be provided at Dubuque Mercy Hospital and other similar

size regional hospitals. In 1973, Dr. Donald Dunphy, then the head of Pediatrics at the University of Iowa, contacted me and asked if I would consider doing for Iowa what we had done for the Dubuque area. After considerable discussions we agreed that a regional plan could be developed and that I would continue my personal program of neonatology education which was only available at that time on a piecemeal basis around the United States. Eventually I was able to become board certified in neonatal-perinatal medicine.

The agreement that I forged with Dr. Dunphy was that he would recruit a person with a background in neonatal intensive care to develop a state-of-the-art NICU at the UIHC. My role would be to develop a perinatal team and visit all obstetric hospitals in the state and upgrade care where possible and encourage timely referral when further care in the local community was not in the best interest of the family.

Visiting all 141 hospitals with obstetric services enabled us to determine which hospitals served as naturally occurring referral resources across the state. Armed with this information, we encouraged certain hospitals in Iowa's largest communities to develop Regional Level II Centers such as in Dubuque.

The concept of the Regional Level II Center was exclusive to Iowa and predicated on the supposition that general pediatricians and general obstetricians, with the help of the University of Iowa, at the behest of the Iowa Department of Public Health, could upgrade their care and that local facilities could be upgraded to better manage high-risk pregnancies and sick newborns.

A key to the success of this program was regular visits by a perinatal team consisting of a neonatologist, an obstetrician, an obstetric nurse, a neonatal care nurse and a pediatric nutritionist. During these visits the records of patients were reviewed so that specific education could be provided. This education was never critical and hopefully always helpful. In this way care around the state was made more readily available on a regional basis.

Although the responsibility for ensuring better care at the local level rested with a team from the university, the program actually emanated from the Iowa Department of Public Health. Members of the visiting educational team did not seek referrals to the University of Iowa, but rather when referral was indicated to a comprehensive center, the closest and most appropriate comprehensive center was recommended. At times it was necessary to refer patients across state lines because it was regionally appropriate for the family to do so. This educationally driven approach has the advantage of putting the Statewide Perinatal Care Program in the position of supporting the local hospitals and not competing with them. Admittedly this approach could have difficulty in a major metropolitan center such as Chicago or New York but it initially worked very well for Iowa and to some extent still does today.

However, as more and more neonatologists were trained, they needed to find places to work and there were insufficient places available in the major centers that truly could provide comprehensive care. Accordingly, neonatologists sought employment in smaller hospitals.

There is no issue that the presence of a neonatologist can bring an improved level of care to a hospital that previously did not have such a physician available. However the mere presence of a neonatologist does not suddenly transform the hospital into a comprehensive center. Yet, there is a tendency among neonatologists in community hospitals to keep more of the sick and very tiny neonates in these hospitals when the degree of illness or immaturity of the neonate would suggest that a higher level of care is indicated.

What do comprehensive centers offer that community hospitals with neonatologists do not? The answer comes more in the realm of common sense than in a legislated standard. In other words, a comprehensive center should be able to meet essentially all the needs of a high-risk pregnancy or sick neonate. Obviously, some exceptions do apply such as the ability to provide a liver or heart transplant in the sick neonate. However these are rare exceptions.

Thus, local neonatologists or general pediatricians or obstetricians or family physicians must ask "are we truly offering this family the best opportunity for intact survival?" If their answer is no, then referral is clearly indicated. If it is obvious that a woman is going to deliver an extremely immature baby and there is time for referral, then delivery at an appropriate level of care hospital is far better than a hasty ground or air transport of the baby. It is not always possible to refer the high-risk woman prior to delivery and fortunately we do have a good perinatal transport system available in Iowa.

When I retired in September 2006, I believed that we had a good system of perinatal healthcare in our state. Neonatal mortality rates were very low and even for hospitals delivering fewer than 100 babies per year, the neonatal mortality rate was approaching zero. I believed that meant physicians were appropriately assessing risk and making necessary referrals. In other words, our system of regionalization was working. Over the past five years I have stayed in touch with my colleagues at the UIHC and believe we still enjoy a good system of regionalized perinatal healthcare.

I hope this will continue because the need for a regionalized system of perinatal healthcare is essential to continue to offer our Iowa mothers and babies the best possible care in what is still an area of relatively low population density. The Iowa Statewide Perinatal Care Team is still intact and keeps up with modern trends and I hope will continue to visit Iowa hospitals on a regular basis and provide helpful education.

The neonatologists who have settled in the Regional Level II community hospitals will continue to play an important role in offering Iowa babies a good quality of care. They must not, however, assume that their presence in these hospitals obviates the need to carefully assess the sick or very immature neonates' need for services not available at the local level.

I know that the physicians around our state will continue to offer families the best care appropriate to their needs. In a small state like Iowa, it is essential to work together for the common good of our perinatal patients.

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