EDITORIAL

Neonatology Departments Under Economic Pressure

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Editorial to accompany the articles "The Care of Preterm Infants With Birth Weight Below 1250 g—Risk-Adjusted Quality Benchmarking as Part of Validating a Caseload-Based Management System" by Kutschmann et al. and "Risk-Adjusted Intraventricular Hemorrhage Rates in Very Premature Infants—Towards Quality Assurance Between Neonatal Units" by Vogtmann et al. in this issue of Deutsches Ärzteblatt International

Preterm infants with birth weight below 1500 g, also referred to as very low birth weight infants, account for most infant mortality and disabilities caused by brain hemorrhages, for example, in neonates. The care of preterm infants is currently the subject of controversial debate in Germany, the intensity of which may be partly because financial pressures on pediatric hospitals have increased and the treatment of preterm infants is well remunerated. A preterm infant with a birth weight of 550 g and no complications requires approximately four months' inpatient care, costing around €100 000. If surgery is required, complications such as infections arise, or costs (e.g. staff costs) are kept down, revenue or profits rise.

This is probably also part of the reason that Germany has significantly more tertiary care hospitals with neonatal intensive care units (called Level 1 perinatal centers in Germany) than other countries. In 2005 there were 2.1 Level 1 centers per 10 000 births in Germany, but only 0.7 in Sweden (1). The steady rise in prematurity rates in many countries over the last 20 years (including Germany, where the rate has increased from 7.6% to 9.2%, and from 0.7% to 1.3% for preterm infants weighing less than 1500 g) may be the result of many factors. However, it is striking that in Sweden the rate has remained stable over the same period, at 5.9% to 6.2%, and 0.5% for those weighing less than 1500 g (2).

Minimum caseloads: a controversial issue

One central area of scientific debate regarding the care of very premature infants is whether minimum caseloads, i.e. minimum numbers of treated patients, should be introduced for the purpose of quality assurance. Medical societies (3) and health insurers advocate a minimum caseload because they believe that it will lead to better and less cost-intensive care. The German Medical Association and the German Hospital Association, however, dislike the minimum caseload, because they doubt these effects. Both sides agree that minimum caseloads alone are not sufficient as a quality criterion. Even last year's lifting of the minimum annual caseload imposed by Germany's Federal Joint Committee (G–BA, Gemeinsamer Bundesausschuss) of 30 preterm infants weighing less than 1250 g by Brandenburg's regional social insurance court did not silence this debate.

Current studies of quality of care

Both studies in the current edition of *Deutsches Ärzteblatt* are relevant to this subject: Kutschmann et al.'s study (4) finds a higher risk of death in hospitals with annual caseloads below 30, but also a high degree of variation in the risk of death in hospitals with larger caseloads. The authors ascribe this to parameters other than the number of treated cases. Vogtmann et al. (5) investigated the risk-adjusted incidence rate and relevant risk factors for severe brain hemorrhage, e.g. prenatal factors, in addition to caseload.

A fundamental problem with this research is data quality: In Kutschmann et al.'s study only 75% of the German Federal Statistical Office's data were fully recorded to enable risk-adjustment, and in that of Vogtmann et al. hospitals' neonatal data did not always meet high quality standards (6, 7). To date there is no input verification of these quality data, e.g. by comparison with the data entered into the DRG-system for billing purposes.

Other factors also play a role in quality assurance of care for preterm infants, such as the following:

- Rate of nosocomial infections and bronchopulmonary dysplasia
- Prenatal care
- Number and training of medical and nursing staff
- Psychosocial support for families.

This means that, unlike quality assurance in surgery, in the care of preterm infants quality assurance is complex and performed by an interdisciplinary treatment team over several weeks (8–11). Unfortunately, to date the German care system has no rational performance incentives, e.g. to prevent preterm births, complications in preterm infants, or postnatal transport.

Many countries, including Canada, the Netherlands, France, Sweden, and Portugal, favor a centralized approach for hospitals with large caseloads (12–14). In the USA and the UK, decentralization to increase competition introduced in the 1980s and 1990s respectively proved detrimental (15, 16). In Germany, the creation of new Level 1 centers resulting from the financial competition of the DRG system caused, in the author's experience, a brain drain of well trained, experienced neonatologists from large perinatal hospitals to small centers, leading to a splintering of nursing and medical expertise and a weakening of large centers such as university hospitals. University hospitals also

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suffer from the problem that managers take into account teaching and research posts to maintain patient care.

Financial versus ethical interests

In addition to preterm infants and parents, gynecologists and neonatologists are also involved in this area of conflict. In neonatal tertiary care, DRG-related competition seems counterproductive for both quality of care and rational use of resources. Children's hospitals should be able to exist without the availability of a Level 1 perinatal center. As an example, in most countries inpatient treatment costs for children are reimbursed in full, i.e. regardless of DRG (e.g. the US's medical aid scheme Medicaid).

There is a major risk that obstetricians and neonatologists are pressured into the role of bearing liability for the decisions of managers and make fewer decisions that are fully independent medically and morally, which was the role assigned to them by the founding fathers of the Federal Republic of Germany in the national medical self-management system, with good reason. It is natural for managers to strive for good values in neonatal care quality assurance. However, this may not stop especially ambitious managers from offsetting a case of harm against profits or savings in costs, e.g. staffing costs. For doctors, though, ethical rather than financial considerations take priority, as they are the guarantors of medical treatment and are legally liable for it. If financial pressure can be removed from care for preterm infants, it will also be possible to find a scientific answer to the question of a rational care structure for preterm infants on the basis of valid quality data.

Conflict of interest statement
Prof. Zimmer holds shares in Rhön-Klinikum AG and Fresenius. He is a professor at Justus Liebig University and head of the Department of General Pediatrics and Neonatology at the Gießen/Marburg University Hospital GmbH in Gießen.

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