mothers are expected to have higher NNT mortality rates since they tend to live in poor neighbourhoods with inadequate sanitation facilities. These mothers are more prone to practising unhygienic newborn cord care such as application of mustard oil, ghee or surma, thus making their child more susceptible to NNT.

One of the concerns for our study is the possibility of differential recall i.e., the accuracy of recall of past events for the mothers of NNT cases would be different from their comparison group of non-NNT controls. Since 55% of cases from 1998-2000 were located from the records of hospitals and their addresses from the EPI office, there could be an imperfect recall existing among these cases and controls for information on past exposures.

To eliminate NNT by the year 2005, there is an immediate need to address this public health menace. Subsequent application of substances should be discouraged through health awareness programmes in the community. Curtailment of this practice should become part of the NNT prevention programme. Deliveries in a health care setting should be encouraged because of routine aseptic cord care practices. Counseling of the pregnant mothers is crucial in this regard.

Acknowledgement
This study was funded by Aga Khan University’s Research Council Grant (Project ID: 002F410WF) and was cleared by Ethics Review Board (IS1CHs/ERC-00) of the university. We are grateful to Dr. John V. Bennett (Visiting Professor, Department of Epidemiology, Rollins School of Public Health, Emory University, Atlanta, Georgia, USA) for providing valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We are thankful to Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project. We also take this opportunity to thank Dr. Mubina Agboatwalla who had been a great source in providing the EPI line listing for valuable feedback during the execution of project.

Rukhsana Sadiq who organized themselves efficiently during the field work of the study.

References

The challenges of eliminating neonatal tetanus

Child mortality has been declining rapidly over the past few decades. However, the decline in infant and neonatal mortality has not been nearly as dramatic. This has led to an increasing interest in neonatal mortality and what interventions might be most effective in this age group. Neonatal tetanus is a cause of neonatal death that has well defined risk factors and specific interventions that could be very effective in eliminating this cause of neonatal mortality. Specifically, we have a vaccine that is effective, long lasting, safe to provide in pregnancy and whose impact extends to protect the neonate. In addition, safe birthing practices, including cutting the cord with a clean blade, can be effective in preventing infection. Other potential sources of infection are applications of various substances to the cord, a common practice in many cultures. Much of the literature on risk factors for neonatal tetanus describes rural populations, where the risk may seem greatest. What is most interesting about the paper in this issue of the journal is that it focuses on risk factors in an urban environment where access to care and hygiene conditions are presumed better than in rural areas. As in prior studies conducted in rural areas, maternal illiteracy, home delivery and applications to the cord independently put infants at greater risk for neonatal tetanus among those who have not been protected by maternal immunizations. These risk factors suggest interventions that are practical and feasible, although they require behavior change that is often challenging to effect. Safe birthing kits and the training of birth attendants in their appropriate use should be a focus in urban areas as well as rural
Raza et al: Risk factors for neonatal tetanus

ones. Education regarding the risks associated with the application of traditional substances to the cord, perhaps recommending a substitution with inexpensive antiseptics may also have the potential to reduce neonatal tetanus risk as well as other cord infections. Finally, a safe and efficacious vaccine is available, and should continue to constitute a strategy to attain the goal of elimination of neonatal tetanus set by the World Summit for Children.

Katz J
Department of International Health, Program in Disease Prevention and Control, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205-2103 USA.
E-mail: jkatz@jhsph.edu

References