Background
Namibia is a high TB incidence country with a case notification rate (all forms of TB) of 529/100,000 in 2012. The National Tuberculosis Programme (NTP) at district level is run by non-substantive District TB and Leprosy Coordinators (DTLCs). The NTP has been using a paper-based data system since 1991, making retrospective TB data analysis beyond routine indicators difficult. TB/HIV and drug-resistant TB have increased the need for patient level data tracking and inter-system triangulation, which is difficult with a paper-based system.

Interventions
• In 2006, Namibia introduced the ETR.net, an electronic TB register.
• DTLCs were trained and computers were procured and the ETR.net was rolled out to all 34 districts (excluded the regional level) in 2007.
• The DTLCs entered data which were electronically forwarded to national level on a quarterly basis.
• Trouble-shooting visits from national level were conducted to “problematic” districts, with no technical backstopping at regional level.
• Annual national level ETR.net data were compared to the paper-based data as a measure of coverage of the ETR.net, and health workers (HCWs) were periodically asked on their experience with the ETR.net.

Results and Lessons Learnt
• There was variable implementation of the ETR.net in the districts, with the country reaching 95% concordance in 2012.
• Constraints included: limited computer skills, poorly maintained computers with frequent breakdown, limited Internet access for data transmission, rapid staff turnover, and poor supervisory capacity at regional level.
• Data entry into the ETR.net significantly lagged behind the paper-based register
• HCWs perceive the ETR.net as not adding value to patient management

Conclusion and Recommendations
Implementation of an electronic TB data system in a resource limited settings requires attention to baseline infrastructure and system-wide capacity building on computer skills, as well as an adequate pool of hardware and technical backstopping. Dedicated DTLCs are key and on-site refresher trainings and supervision can address the rapid staff turnover. A dual system with paper and electronic registers should be maintained until computer skills among HCWs have significantly improved. Addition of a web module to the ETR.net can ameliorate data transfer challenges. Electronic systems that address direct patient management in addition to reporting requirements are likely to get easier buy-in with HCWs.

References

Acknowledgments
The Ministry of Health and Social Services acknowledges the support and contribution made by the following: United States Agency for International Development (USAID) through KNCV TB Foundation; the Global Fund fight AIDS, TB and Malaria (GFATM); health care workers and all our patients.