GVIRF 2014 Plenary 5: Research to improve monitoring and evaluation of immunization programs	
Rapporteurs: A Bentsi-Enchill (WHO) and A Ter Meulen (BMGF)	
Session Outline	**Chair:** JM Okwo-Bele **Presentations:** Dr C Danovaro (PAHO/AMRO), Dr AM Ropero Alvarez (PAHO/AMRO) **Discussants:** Dr T Cherian (WHO)
Objectives of the session	To review the potential of electronic immunization registries as an innovative solution to improving the quality of immunization data, and generating information to monitor program performance.
Main outcome	National electronic registries are a promising technology to measure the performance of vaccination programs, and warrant further evaluation at the country level. Efforts by WHO and other partners are required to support countries in establishing sustainable systems and ensuring the right capacity at country level to use them.
Summary	There is an urgent need to improve indicators for immunization program monitoring and address gaps in data quality, in particular through use of electronic immunization registries and related technologies. Improving data quality means facilitating the collection, analysis and use of data to measure and improve operational, managerial, and strategic aspects of programme performance. Current challenges to immunization system performance relate to systems (e.g., data not available when needed), tools and technologies (e.g., data not fit for purpose) and people (e.g., data not used for decision making). In PAHO countries, a variety of immunization records are used including vaccine cards, tally sheets, individual records and electronic immunization registries (EIRs). EIRs are population-based systems that allow coverage monitoring by multiple vaccine or epidemiological parameters and by cohorts and detailed analyses of under-vaccination in order to tailor vaccination strategies and inform individual follow up. Ideally, they include entries at birth and unique identification codes for data aggregation, data security and confidentiality. EIRs have been used as part of wider health information systems or linked to other databases for planning and programme management (e.g. stock management or adverse event databases); to give parents reminders and online access to vaccination cards; and with mobile phones for data collection, remote data access, continuing education, and programme updates to health workers. Building EIRs requires multi-stakeholder buy-in, political support and time. Implementation challenges have included data entry errors, incomplete data and lack of private sector access. Incompatible databases in one country was solved by combining into a single system. Careful planning and monitoring are essential. The increasing number of initiatives on using information and communication technology to improve immunization data quality and use of data for action, means efforts are required to ensure cohesion in the approaches used. WHO can provide support for the design of sustainable systems, use of appropriate technologies as platforms for information exchange while ensuring compatibilities between systems, and for capacity strengthening of users. Other potential enabling factors in-country include a legal framework, commitment to the time required for implementation, integration and cross-functionality and motivation of health workers to produce better data. There was a call for future research on the impact of electronic registries on program performance in different settings; usefulness of registry data for performance monitoring; and the feasibility of implementation and maintenance

	for such systems. EIR data can facilitate research on various vaccine and immunization programme related issues. One study, a systematic evaluation of influenza vaccine effectiveness in 13 PAHO countries (REVELAC-i) showed higher levels of completeness for vaccination status on all parameters in countries with registries compared to countries without registries. To ensure the sustainability of annual estimation of influenza vaccine effectiveness, the use of nominal vaccination registries will be improved and critical vaccination variables included in surveillance protocols and databases. Higher coverage levels have been documented among countries with registries though it was not clear how much of this could be explained by better availability of data.
Key references or quotes	▪ Characteristics of good quality data include accuracy, timeliness, consistency, reproducibility and effective use of the data. ▪ Development of an IT-based system has a lifecycle and needs to be carefully planned; short-cuts can affect quality, costs and time. ▪ It is not all about technology, but about people; health workers need to be trained and motivated to produce better quality data.