

ABBYY FormReader™ Catalyses Drastic Changes in Medical Injection Practices in India

Nationwide Assessment of Rationale and Safe Use of Injections Made Possible With ABBYY's Form Processing Software

"ABBYY FormReader made a revolution in the field of medical research projects. It has helped immensely in processing large data in multicentric studies saving ample time and man-power," Dr. N. K. Arora (Project Coordinator), Professor, Department of Pediatrics, All India Institute of Medical Sciences (AIIMS).

Background: World Health Organization's World Health Bulletin released in the year 2000 stated that staggering **3 billion unsafe injections** were given in India annually.

In response to the data from World Health Bulletin, the Ministry of Health and Family Welfare (MoHFW) and Government of India (GOI) in collaboration with All India Institute of Medical Sciences, (AIIMS) had undertaken the colossal project "Assessment of Injection Practices in India" to analyse the prevalent injection practices to pave the way for drastic timely changes.

Methodology: A nationwide rapid survey at the household level coupled with observations at the health facility level were the proposed methodology. The country was divided into zones and subdivided into clusters within which various types of observations were held. The multi-level, multi-survey complex study was estimated to deliver **57,600 observations**. The surveys would determine the locales with the highest rates of unsafe injections, the specifics of unsafe practices, rates of inadequate injection-related waste disposal and provide the shares of curative vs. preventive injections.

ABBYY FormReader – A Superior Solution

In order to process data from 57,600 forms quickly and accurately, a powerful technology had to be found. **NETSPIDER INDIA (NIIL)** proposed the use of ABBYY FormReader to capture data from hand-filled forms and export it to a database. Guarantees provided by NETSPIDER INDIA:

- a. **EFFECTIVENESS:** at least 90% accuracy in data extraction¹
- b. **EXPEDITIOUSNESS:** approximately 3 months for data scanning using CANON scanner at 300 dpi

Process:

All the questionnaires that had quantitative data were designed as ICR forms with check boxes. Bar codes were assigned to each type of ICR form to avoid mismatches. Dr Arora reflected, *"NETSPIDER's technical support and guidance in designing the forms and matching the templates and the barcodes came as a great help as we are researchers and non-technical persons. The team even guided the process through telephonic discussions and emails."*

¹ 90% accuracy guarantee was a high benchmark in 2002



About All India Institute of Medical Sciences (AIIMS)

All India Institute of Medical Sciences (AIIMS), New Delhi was created in 1956, as an autonomous institution through an Act of Parliament to serve as a nucleus for nurturing excellence in all aspect of health care. The Institution has comprehensive facilities for teaching, research and patient care. As provided in the Act, AIIMS conducts teaching programs in medical and para-medical courses both at Undergraduate and Post Graduate levels and awards it own degree. Teaching and research are conducted in 42 disciplines. It aims to bring together in one place educational facilities of the highest order for the training of the personnel in all important branches of the health activity. More details are available at <http://www.aiims.edu>



About NETSPIDER INDIA (NIIL)

NETSPIDER INDIA specializes in ABBYY channel distribution and giving end-to-end solutions in various fields like imaging, networking, scanning, connectivity, Project consultancy, and doing developments around ABBYY technology. NETSPIDER INDIA has experienced technical skills in implementing ABBYY FineReader OCR, FormReader Enterprise, Desktop, FlexiCapture Studio and other ABBYY line of products. More details are available at <http://www.niil.in>

Role of ABBYY FormReader:

ABBYY FormReader played a fundamental role in the process. First, filled ICR forms were sent to the Central Coordinating Office in AIIMS, Delhi from all across India for physical quality check. The physical quality check was completed by 12 research assistants, within 2 months. This process was followed by scanning and recognition of the forms using ABBYY FormReader by 2 research assistants in 3 months' time. Batches were created for the different types of questionnaires and were developed according to the corresponding templates. This process involved recognition, verification and validation of the data leading to data extraction and data export to Microsoft Office Excel spreadsheets for further analysis. **ABBYY FormReader processed 57,600 questionnaires in three months saving 48,288 man hours as against the stipulated time of 6 months of manual processing by 12 research assistants.**²

Outcome:

The results of the study were alarming, as 63% of injections given in India was found to be unsafe (74% of which were given at immunization clinics). Yet the data collected therefrom was of tremendous value since it led to understanding the root cause of the problem, which paved the way for finding the right solution. Based on this report the Government of India introduced the Auto Disabled (AD) Syringes in the Universal Immunization Program (UIP) in India in July, 2004 and recommendations were made to open Model Injection Centres (MICs) across the country to promote safe injection practices.

The continuing support by ABBYY solutions:

In 2006 AIIMS established 25 Model Injection Centres across the country. Among the numerous tasks assigned to the MICs are regular training sessions for those who are directly involved in prescribing and providing injections. In the training sessions the Assessment of Communication Needs Forms (ACN) are being filled by the participants so that the data can later be analyzed for developing Community Awareness Strategies. **ACN form design and processing are provided by ABBYY FormReader (upgraded to version 6.5).**

SUMMARY

Client:

All India Institute of Medical Sciences (AIIMS),
New Delhi, India

Project:

"Assessment of Injection Practices in India"
in response to results published in World Health Bulletin

Challenges:

- Estimated 57,600+ questionnaires to be hand-filled nationwide
- Manual processing time projection – 6 months

Solution:

- Form design and data capture using ABBYY FormReader
- Processing time – 3 months

In February 2007 **15,000 ACN forms**, from all the 25 MICs were sent to AIIMS where the process of scanning using CANON scanner and data analysis are expected to take place in 2007. *"The upgraded version has ABBYY FormDesigner which makes the creation of Forms much simpler and easier. The bar code recognition is also a much simpler task as compared to the ABBYY FormReader 4.1 version and also 99.9% accuracy,"* stated Dr. Arora.

ABBYY's solutions powered by NETSPIDER INDIA's expertise and relentless support have made possible medical research projects to be conducted in a more cost effective and efficient manner saving time and man-power.

² One license of ABBYY FormReader Desktop Edition