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ABSTRACT BOOK

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over 90% of all doses till date were reported correctly using 99 DOTS. About 10-15% of patients required high attention because of inconsistency recorded in the missed calls; all such patients were contacted by the program supervisors following automated SMS from 99DOTS. Real-time adherence reports were also available on the web.

Conclusions: 99DOTS presented a promising approach for improving treatment adherence among TB-HIV co-infected patients at much low cost and high convenience. Considering high effectiveness of this technology, State Government has taken a policy decision to cover all TB patients with 99 DOTS from April 1st, 2018. This technology can also be implemented in other states and countries having similar settings.

SOA12-1125-26 Follow-up observation on the nursing effect of hemodialysis patients with pulmonary tuberculosis complicated with renal failure after WeChat video follow-up

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Background: The side effects using anti-TB were apparent in treating renal failure patients with the TB complications. The compliance of hemodialysis patients with pulmonary tuberculosis complicated with renal failure may affect the quality of patients' life and the patients' recovery. Follow-up with WeChat video is a good mode for health education.

Methods: Eighty-three patients with pulmonary tuberculosis complicated with renal failure, control group (43 cases) and experimental group (40 cases) were continuously included in our hospital from March 1, 2016 to March 1, 2017. The patients in the control group were given routine health education; the experimental group used WeChat video follow-up communication mode to carry out health education for the patients. The differences in disease awareness, medication accuracy, accuracy of urine volume records, and incidence of adverse reactions after dialysis were compared between the two groups.

Results: Experimental group (40): knowledge of disease was 93% (38/40), accuracy of medication was 100% (40/40), accuracy of urine volume record was 90% (37/40), the incidence rate of adverse reaction after dialysis was 54% (22/40), and the total awareness rate was 84% (138/160), which was higher than that of the control group (43): knowledge rate of disease knowledge was 66% (29/43), and medication accuracy was 73% (32/43), Accuracy of urine volume record 70% (31/43), incidence of adverse reactions after dialysis 61% (27/43), total awareness rate 68% (119/172), ($X^2=10.114$, $P = 0.001$; $X^2 = 11.55$, $P = 0.001$; $X^2 = 5.829$, $P=0.016$; $X^2=0.520$, $P=0.471$).

Except for the incidence of adverse reactions after dialysis was not statistically significant, the rest were statistically significant.

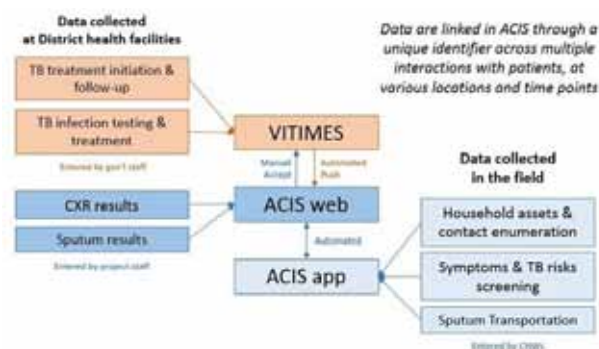
Conclusions: Follow-up with WeChat video can improve the compliance of hemodialysis patients with pulmonary tuberculosis complicated with renal failure, and the quality of patients' life is significantly improved.

SOA12-1126-26 Integrated mHealth tool for nationwide scale-up of community-based TB services

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Background and challenges to implementation: Mobile technologies in public health are commonly referred to as mHealth tools. They allow for real-time data analysis, which promotes data driven programming and have been shown to improve patient services. Though mHealth tools have many benefits, they are often developed as parallel systems and fail to reach scale.

Intervention or response: VITIMES, Vietnam's national electronic routine surveillance system, captures drug sensitive TB treatment initiation, monitoring and outcome data. By 2014, all districts in Vietnam were using VITIMES. In 2017, the Access to Care Information System (ACIS, tb.acis365.vn) was developed for the Zero TB Vietnam project. Through an Application Programming Interface, it bi-directionally links VITIMES to the project's community-based TB services.



[ACIS System Overview]

When a patient is recorded in VITIMES, ACIS receives and forwards the record to a CHW in the ward of the patient's residence and functions as a survey tool for verbal screening of patient contacts and other high-risk individuals. Records of individuals referred for X-ray screening are submitted to VITIMES prior to their arrival. ACIS tracks sputum transportation and allows project staff to record test results. Treatment monitoring and outcome data captured in VITIMES, update automatically in ACIS, removing double-entry of data.

Results and lessons learnt: The app was released in 2017-Q4 and currently has 384 active users; 83% are ward-level users. Over 200 Android tablets with the app were deployed in 13 districts in Hai Phong, Hoi An and Ho Chi Minh City. ACIS allows for the central monitoring of activities and currently stores 32,000+ patient records and 1,200,000+ unique data points. All of Vietnam's 63 provinces, 713 districts and 11,112 wards are mapped in ACIS and can be deployed nationwide.

Conclusions and key recommendations: Robust, electronic data systems are required to increase TB case detection and control the TB epidemic. This innovative tool from Vietnam provides a direction forward for integrated mHealth for active case finding in communities.

SOA12-1127-26 Implementing digital health solutions for monitoring mutations of *Mycobacterium tuberculosis* associated with drug resistance in high MDR TB burden Arkhangelsk Region of Russian Federation

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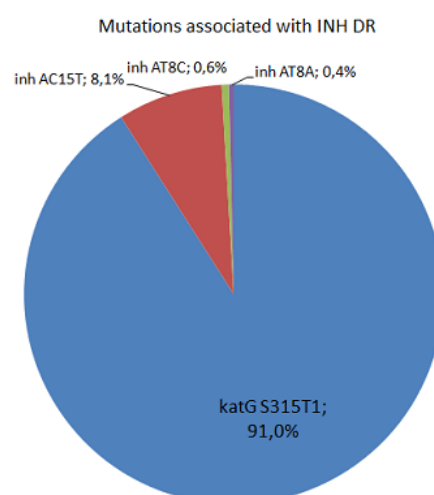
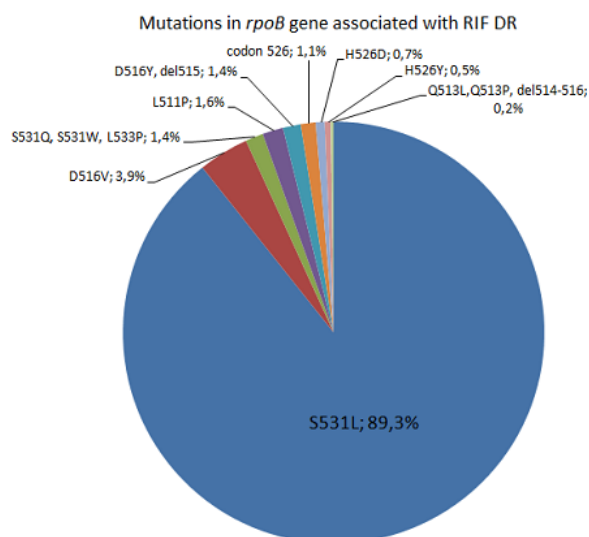
Background: Multidrug-resistant tuberculosis (MDR TB) is one of the main challenges in management of TB patients. In 2016 incidence of TB in the Arkhangelsk region was 26.9/100000 with 33.1% of MDR TB among 'new cases'. Nucleic acid amplification tests, such as line probe assay (LPA), detect mutations associated with drug resistance (DR) of *Mycobacterium tuberculosis* (MBT) and allow rapid detection of DR. Information on mutations might contribute to better management and control of transmission of MDR TB.

Regional electronic register of TB patients (inIT-TB) was developed and introduced as a part of digital health solutions in TB care and control in Arkhangelsk region. The system contains all information on diagnostics and treatment of all TB patients, but lacks information on mutations of MBT.

The aim of this study was to create an electronic system for registering MBT mutations associated with DR to rifampicin (RIF) and/or isoniazid (INH) and to determine the prevalence of those mutations among TB patients in Arkhangelsk region in 2014-2017.

Methods: All TB patients in Arkhangelsk region were routinely tested for MDR with LPA before treatment. The results of LPA were registered in inIT-TB where we introduced a module for recording mutations in *rpoB*, *katG*, *inhA* genes.

Results: Overall 1142 TB patients were tested with LPA In 2014-2017 in Arkhangelsk region. Among them 439 (38.4%) patients had mutations associated with RIF-resistance and 543 (47.5%) - with INH-resistance. Mutations detected among DR TB patients are presented.



[Mutations of MBT among patients with DR to rifampicin and isoniazid]

Conclusions: Mutations *rpoB* S531L and *katG* S315T1 associated with DR to RIF and INH respectively were detected in almost 90% of DR TB patients in Arkhangelsk region in 2014-2017. Electronic system for registering and monitoring of MBT mutations associated with MDR was developed and implemented in the high MDR TB region allowing for better understanding and further evaluation of MDR TB transmission.