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optimal TB case management contribute to transmission of TB and development of drug resistance.

**Aim:** To evaluate the temporal trends of the proportions of treatment success and unfavourable outcomes in the Member States of the WHO European Region in 2004-2008.

**Methods:** Aggregated data on definitive treatment outcomes (cured and treatment completed, i.e. treatment success; died and failed, i.e. unfavourable outcome), collected from the national TB recording and reporting systems by WHO Europe, were analysed.

**Results:** During the period 2004-2008, the proportions of treatment success among new TB cases ranged from 64.6% (2,863/4,434) to 76.3% (5,997/7,860) and from 61.2% (70,211/114,721) to 72.0% (55,196/76,681) in low (L) vs middle-high (M-H) TB incidence (i.e., TB incidence < 20 vs. ≥ 20 cases per 100,000 population) countries, respectively. Only during the years 2004, 2007 and 2008 the proportion of treatment success was significantly higher in low TB incidence countries (P< 0.001). Re-treated cases were successfully treated in low incidence countries during the study period (average treatment success proportion in L and M-H TB incidence countries were 62.3% and 49.7%, respectively; P< 0.001). Failure trends were significantly higher in new and re-treated cases in M-H TB incidence countries (9.8% versus 5.0% and 19.6% versus 10.7% respectively; P< 0.001).

**Conclusion:** This analysis confirms that sub-optimal treatment outcomes in new and re-treated TB cases are frequently recorded in the WHO European Region setting. Introduction and/or strengthening of multidisciplinary interventions to improve treatment outcomes are urgently needed.

**P3296**
**Predictors of treatment outcome in multidrug-resistant tuberculosis**

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Multidrug-resistant tuberculosis (MDR-TB) is a challenge to control programs.In these cases, treatment is more complex, more expensive and very often less successful.

The purpose of this study was to analyze the factors that could influence (positively or negatively)the outcome.

To examine this issue we used data from the National Tuberculosis Program in Portugal SVIG-TB.For the study,we included all MDR-TB cases reported from January 2000 to December 2008. To identify the predictive factors related to the outcome of treatment we used univariate and multiple logistic regression models with the clinical variables.

During the studied period 130 patients with MDR-TB were notified, of these 94 (72,3%) were male and 36 (27,7%) female, mean age 42 years old (range 40-44). Forty-six patients (35,5%) had a previous treatment and 39 (30%) were HIV positive. Treatment success (cured or completed treatment) was observed in 80 (61,5%) patients. Susceptibility and use of pyrazinamide or ethambutol, susceptibility and use of a fluoroquinolone, the use of five or more drugs in the treatmant regimen, sputum culture conversion after 2 months of treatment were predictors of successful outcome of treatment. Treatment insucess (death, default and failure) was observed in 47 (36,1%) patients. Previous treatment, HIV co-infection, presence of cavitation on the chest radiograph, resistance of two more drugs than just isoniazid and rifampicin and positive cultures after 2 to 3 month of treatment were predictors of poor treatment outcome.

Rapid diagnosis of drug resistance and an appropriate therapy for effective treatment are important conditions for the prevention of spread of resistant strains and control of MDR-TB.

## 367. Risk factors and treatment outcomes in multidrug- and extensively drug-resistant tuberculosis

**P3295**
**Temporal trend analysis of TB treatment outcomes in the WHO European region**

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**Background:** There is scientific evidence that poor treatment outcomes and sub-

**P3297**
**Risk factors for drug-resistant tuberculosis in the north of Portugal**

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Although drug resistance is considered the main threat for tuberculosis control, in Portugal very few studies focused on the risk factors.

The aim of this study was to identify risk factors for drug resistance in patients with tuberculosis in the North of Portugal.

We performed a retrospective case-control study involving patients with drug-resistant tuberculosis registered in North of Portugal, between March 2009 and

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April 2010, in order to identify clinical and demographic risk factors for drug-resistant tuberculosis. We selected 2 controls per case matched according to age and place of residency. We calculated odds ratios (OR) and performed multivariable logistic regression to identify independent predictors. Significant level was set at 5% significance level.

We enrolled 76 patients with drug-resistant tuberculosis and 152 controls with drug-susceptible. The mean age of case group was 48.3 (sd=17.0) years. Male represented 64.5% (n=49) and female 35.5% (n=27). HIV co-infection was present in 14.5% of cases. In the control group the mean age was 47.9±17,8 years, 59.9% (n=91) were male and 40.1% (n=61) were female. HIV co-infection was present in 13.8% of this group. The intravenous drug use [adjusted odds ratio (OR):3.14; 95% CI:1.13-8.,66] and previous treatment (OR: 3.05;95%CI: 1.16-7.98) were found to be risk factors for TB drug- resistance

In this region, previous tuberculosis treatment and intravenous drug use were risk factors to drug-resistance. HIV co-infection was not a statistical significant risk factor for drug-resistant tuberculosis. Identifying clinical predictors of drug resistance may aid in risk stratification for earlier treatment and infection control.

### P3298
**Treatment of MDR tuberculosis in Switzerland. A case control study**
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**Background:** MDR tuberculosis can mostly be cured in western countries, but treatment with second-line drugs is difficult, long-lasting, provided with many side effects and expensive.
**Methods:** The aim of our study was to follow the patients with MDR Tuberculosis, hospitalized at the Luzerner Höhenklinik Montana (LHM) between 2005 and 2010 and to control their treatment to full recovery. The information in relation to post clinical treatment was gathered through personal contact with the treating physicians and telephone interviews with the patients.
**Results:** Of 46 patients with tuberculosis hospitalized at the LHM between 2005 and 2010, five patients were assessed having multidrug resistant tuberculosis. Three suffered from pulmonary tuberculosis, one from tuberculous spondylodiscitis, and one from lymph node tuberculosis. One patient was shown after some weeks of treatment in a second evaluation the laboratory findings not to have MDR Tbc. Drug therapy was performed with second line antituberculous drugs in combination of 4 to 5 drugs like Aminoglycosides, Ethionamid, Oxazolidinones and Quinolones. Drug therapy was given for at least 12 months. All patients required initially for a prolonged period intravenous drug therapy. In two patients surgery was performed during treatment (resection of the upper lobe of the lung, lymph node resection). All patients showed side-effects,.
**Conclusion:** Cases of multidrug resistant tuberculosis are still challenging for physicians and patients as diagnosis may not be evident and treatment remains difficult. In two cases the diagnosis was delayed due to different reasons. Duration of treatment is long and complicated, side effects are frequent and especially the cost of treatment is high.

### P3299
**Gender and other risk factors for multidrug-resistant (MDR) tuberculosis (TB) among migrants to Milan, Italy**
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MDR-TB is a threat to global TB control. Identification of risk groups is crucial in low prevalence countries for early diagnosis and to limit transmission.
Retrospective evaluation of TB cases treated at the Villa Marelli Inst., Milan, Italy, in the years 2000-2010. Susceptible TB patients (sTB) and MDR-TB patients were considered for the analysis. Potential risk factors for MDR, such as age, thoracic or extra-toracic involvement, HIV status, country of origin, etc were evaluated in a logistic regression model.
**Results:** 91 MDR-TB and 1510 sTB patients were recorded in the study period. HIV seropositive status (OR 3.98, CI95% 1.52 -10.39) and being migrant (IM) from Eastern European countries (OR 3.35, CI95% 1.48 -7.56) were independently associated to MDR-TB. Stratifying for sex, female subjects from Eastern Europe, South America and Asia had an higher risk than male from the same regions (East-European women OR 10.37 CI95% 1.84-58.26 vs men OR 2.06 CI 95% 0.77-5.50; South American women OR 7.06 CI 95% 1.35-36.90 vs men OR 1.04 CI 95% 0.35-3.04; Asian women OR 7.69 CI 95% 1.19-49.68 vs men OR 1.39 CI 95% 0.47-4.11).Treatment success were more frequent in IM women than men both in sTB (94% vs 88%, P 0.01) and MDR-TB (90%vs 67%, P0.02), in sTB Italian than IM men (94%vs 88%, P0.01) and in MDR IM than Italian men (67%vs 36%, P0.02).
**Conclusions:** In an European metropolitan setting, MDR-TB is associated with origin from regions with high prevalence and with HIV seropositive status. The finding that female subjects from Eastern Europe, South America and Asia are at increased risk, opens important questions about equal access to health care and the need of targeted studies.

### P3300
**Treatment outcomes of MDR-TB patients notified in Romania during 2005-2007**
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**Introduction:** MDR-TB is a major public health concern for the entire international community, due to the longer duration of transmission of infection and reduced chances to reach a successful treatment outcome in such cases, by comparison with sensitive TB cases.
**Aims and objectives:** The analysis of treatment outcomes in MDR-TB cases reported in Romania in 2005-2007, by them demographic and clinical characteristics.
**Methods:** Descriptive retrospective study of treatment outcomes in MDR-TB patients reported in Romania in 2005-2007. Data have been extracted from the database of the National TB Programme - Central Unit.
**Results:** In those 3 years 2234 MDR-TB cases have been reported, 79.7% males, 50.7% living in urban areas, most of them in 45-54 years age group. Only for 100 patients was notified the association with alcoholism, 15 were prisoners and 13 had HIV co-infection. As diagnosis 51.5% had cavitary and 28.4% extensive cazeous forms of TB. In 2121 MDR-TB cases evaluated, overall success rate was 28.8% (31.4% in 2005, 31.8% in 2006 and 23.2% in 2007 – not final). The highest rate of failure was recorded in 2005 (32.0%). Death rates had a share of over 28% for 2005 and 2006, and 20% for 2007. Highest default rate was recorded in 2007 - 19.1%. For 40 patients reported in 2007 the treatment was still continuing at the time of study and in the group of 2005, 12.6% of outcomes remained unknown.
**Conclusions:** The success rate overall MDR-TB patients was 28.8% in Romania in 2005-2007. Increased efforts are necessary for earlier detection of such cases and for them better management.

### P3301

WITHDRAWN

### P3302
**Why did they get XDR TB?**
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2008, Iasi County registered 8 XDRTB cases after implementing DST for second line anti TB drugs.
**Aim:** Study of the causes of XDRTB development.
**Method:** Retrospective study of the records of XDRTB patients, 1993-2009; 50% were referred to DOTS PLUS ward.
History of notifications, treatment, DST results, bacteriological progress were followed up.
**Results:** 8 XDRTB cases, males, 1 MDRTB contact.
50% had the first TB episode 1993; all new cases -culture positive, 4 sensitive, 3 not tested, 1 lost.
First treatment -standard regimens, 4 patients with HRZE7/7 or HRZSm *2/7* in intensive phase (117/*22* doses); continuation phase HR7/7or *2/7* (142/*40* doses).
**Results:** 6 cured, 1 failure, 1 lost.
First re treatment: after 3 years mean time.
DST: *MDRTB 4 cases*, 1 H resistant, 1 sensitive, 2 no records.
MDRTB treatment: *amino glycosides*, *Cfx H*ZE -98 doses plus injectable drugs *Cfx*/Ofx *H*ZE Pto Cs:180 doses; insufficient doses/treatment.
3 patients with standard re treatment.

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**Results:** 3 failures, 1 default, 4 success.
Second re treatment - 2 years from the first; *6 MDR, 1 XDRTB*.
Treatment for MDR: 2 cases *with H*; 3 received drugs with unclear efficacy in DRTB treatment/cross resistance (*Cl, Amx/Klv, Ryfabutin*)
XDRTB case: incorrect treatment - *no injectable drugs, Ofx*, insufficient doses/treatment (255),insufficient drugs.
Re treatment results: 3 failures, 2 default, 3 in treatment, 1 cured.
Median number of notifications: 8 in 16 years.
Treatment continued with the same errors; hospitalization: 58/158/173 days, increasing concordant with notifications' number.
Time from first TB episode to XDRTB: 11 years.
**Conclusions:** XDRTB arises due to mismanagement of TB new cases, inappropriate re treatments, long hospitalization, lack of adequate laboratory diagnosis and programmatic recommendations.

## P3303
### Factors associated with treatment outcome in 64 HIV negative patients with multidrug resistant tuberculosis

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In this study we aimed to determine the factors associated with treatment outcome in HIV negative patients with multidrug resistant tuberculosis (MDR TB). The study comprised 64 (43 female and 21 male) patients in whom second line TB drugs were administered in directly observed treatment (DOT) programme. Achievement of sputum AFB (acid fast bacilli) negativity in the 3rd month of the treatment was accepted as the bacteriologic response. The mean time of sputum smear negativity was determined as $3\pm2.2$ months. Bacteriologic response was determined in 73.4% of the patients. The mean duration time of the treatment was $16.4\pm8.2$ months. Treatment outcome of the patients was determined as cure in 34 (53.1%), default in 18 (28.1%), treatment failure in 1 (1.6%) and exitus in 3 (4.7%) patients. Also, in 8 (12.5%) patients treatment was incomplete and continued. Adverse effects of the drugs were seen in 39 (60.9%) patients with the most frequency of gastrointestinal disturbance (51.5%), psychiatric disorders (15.6%), dermatological effects (12.5%). In logistic regression analysis only presence of cavity and the extensive disease were found to be associated with bacteriologic response (OR=1.5,%95 CI= 1.23-1.82, p= 0.01 and OR=2,%95 CI= 1.42-2.79, p=0.00, respectively). Although radiological findings might effect the bacteriologic response, MDR TB is a treatable disease if regular and appropriate treatment regimen is administered.

## P3304
### Characteristics of XDR-TB patients in Israel: 2000-2010

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**Background:** In the last years, Israel experiences mass immigration from countries highly endemic for tuberculosis such as the Former Soviet Union (FSU) and the proportion of multiple drug resistance tuberculosis (MDR-TB) significantly increased. XDR-TB which is defined as MDR-TB that is resistant to any fluoroquinolones and one of the second lines inject able drugs, is a lethal disease that was reported even in well controlled countries.The aim of this study was to assess the burden and the characteristics of Israeli XDR-TB patients.
**Method:** Charts of XDR-TB patients, hospitalized in the National Tuberculosis Center from year 2000 to 2010, were retrospectively reviewed. Demographic, clinical and bacteriological characteristics, genotype analyze, co morbidity, and treatment outcome were summarized.
**Results:** 9 patients were identified with a median age of 35 and male predominance (80%). All the patients came from the FSU and only one was HIV co infected. At diagnosis time, all the patients had advanced pulmonary disease and were highly contagious. Only 33% of them were previously treated, and 55% of them were diagnosed as XDR-TB at presentation. Treatment was individual, based on drug susceptibility pattern. Unfortunately, 70% of the patients died in a period of two years. Molecular genotyping analyze revealed the W Beijing family strains (80%).
**Conclusion:** XDR-TB in Israel is still a rare disease that occurs essentially in the immigrate population. It is strongly associated with the W Beijing family strains with a high rate of death. Efforts should be made to find new effective drugs and to better understand the relationship between the W Beijing family strains and the human population.

## P3305
### Outcome of multidrug resistant tuberculosis (MDR-TB) treatment with possible influencing factors

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It is important to know the outcome of MDR-TB treatment in a country, as many social and therapeutic factors may influence it. We have carefully kept longitudinal data of all MDR TB cases seen by us. The data of cases seen in last 10 years was analyzed to correlate these factors with the outcome. A total of 64 cases were evaluated. The mean age of diagnosis of TB was 28 years with a range of 13

to 65 years. The morbidity was long with a mean of 3.69 years. 30/64 (46.87%) patients had received DOTS as per the national programme.The mycobacteria were resistant to 5.66 drugs on an average. The patients averagely consulted 2.7 doctors for their treatment. 23/64 (35.93%) were lost to follow up. 4 are under treatment for less than 1 year. 7 patients are under treatment for more than 1 year out of which 5 (71.42%) show favorable response and 2 (28.57%) are still sputum positive. Remaining 30 patients had an outcome, out of which 25 (83.33%) got cured, 5 (16.66%) died. Those who defaulted fewer times had a better outcome (0.92defaults in cured patients as against 3.6 defaults in expired patients). 5.6 (28/5) regimens were used in expired patients whereas 3.36 (84/25) regimens were used in those who got cured. Single drug was added to a regimen 12 times in expired patients (2.4 times per patient) as against 12 times in cured patients (0.48 times per patient). Addition of single drug correlated with poorer outcome. Regimen was changed without doing mycobacterial culture 7 times in expired patients (1.4 times per patient) as against 13 times in cured patients (0.52 times per patient). This study highlights some factors in the management of MDR-TB that may help to achieve better outcome.

## P3306
### Treatment outcome of multi-drug resistant tuberculosis treated as outpatient in a tertiary care center

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**Introduction:** Community-based out-patient treatment for multidrug-resistant tuberculosis (MDR TB) is relatively new concept with reported successful outcomes.
**Objective:** To assess the treatment outcomes of HIV negative MDR TB patients treated as outpatient at a tertiary care center in Karachi, Pakistan.
**Methods:** Observational study of culture proven HIV negative MDR TB patients treated at Aga Khan University Hospital, Karachi. Data were collected on predesigned performa regarding patient's demography, clinical features, drug sensitivity, treatment and outcome.
**Results:** A total of 53 HIV negative patients (27 males), with mean age of $37\pm15$ years (range 15-76 years), received treatment as outpatient for culture proven MDR TB. 51 patients (96.2%) had pulmonary while 3 patients (5.6%) had extra-pulmonary TB. History of exposure to tuberculosis patients was found in 36 (67.9%) patients. Treatment regimen with 2nd line drugs was decided on individual basis according to DST on sputum culture results. The mean duration of treatment was 18 months. Successful outcome was seen in 25 patients (47.2%), 25 patients (47.2%) were loss to follow up and defaulted while 3 (5.6%) patients remain smear positive at the end of treatment. Success rate was 89.2% in those who completed the treatment.
**Conclusion:** Community-based out-patient treatment strategy is both feasible and safe for the treatment of MDR-TB patients in resource limited country like Pakistan and this strategy should be integrated into the routine approach to treatment of MDR-TB patients in the country where the expertise are available. High default rate is this strategy is the main challenge which should be addressed.

## P3307
### Treatment outcome of multi drug resistant tuberculosis patients in modified DOTS-PLUS: A new strategy

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**Background:** Multi Drug Resistant Tuberculosis is a worldwide problem and growing hazard to human health.
**Aims and Objective:** To study the treatment outcome with second line drugs in patients of MDR-TB in modified DOTS-PLUS strategy.
**Methods:** A prospective cohort study analysing 98 consecutive patients with MDR-TB attending the Dept of Pulmonary Medicine, CSMMU, between June 2009 to Feb 2010 with follow-up till Feb 2011. All the patients were given medications free of cost as per DOTS PLUS Protocol of India.Treatment included monthly followup,adherence check up,radiological and bacteriological assessment (sputum smear-monthly till conversion then quarterly;culture for MTB-0,4,6,12,18,24 months),health education and monitoring of adverse effects.Patients' outcome considered as "cure" when atleast 2of the last 3 cultures were negative and as "failure" when the same were positive.
**Results:** All the patients had resistance to at least Isoniazid and Rifampicin with mean no. of 3.02 drugs and were seronegative for HIV. Default rate at the end of 6 months and 12 months were observed in 2.1% and 4.1% patients respectively. 5 patients expired in initial 6 months and 2 in next 6 months. Sputum smear and culture conversion at the end of 6 months and 12 months were 80/90 (88.9%) and 75/90 (83.3%) and 81/87 (93.1) and 78/87 (89.7%) respectively. Mean smear and culture conversion time were $3.6\pm2.1$ months and $4.1\pm2.6$ months respectively. Significant side effects were experienced in 14.3% patients.
**Conclusions:** Culture conversion rates at the end of 6 months and 12 months were 83.3% and 89.7% respectively. Modified DOTS-PLUS strategy can be model for treatment of MDR-TB in private sector.

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## P3308
### Recurrence after successful treatment among patients with multidrug-resistant tuberculosis
Chul-Gyu Yoo[1], Jinwoo Lee[1], Young Sik Park[1], Sang-Min Lee[1], Jae-Joon Yim[1], Seok-Chul Yang[1], Young Whan Kim[1], Young-Soo Shim[2], Sung Koo Han[1]. [1]Department of Internal Medicine and Lung Institute, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Armed Forces Capital Hospital, Seongnam, Republic of Korea

Multidrug-resistant tuberculosis (MDR-TB), defined as resistance to at least isoniazid and rifampin, is a growing global concern. Even after successful treatment of TB, there is still the issue of recurrence, of which the rate has been reported to be up to 3.4% in drug susceptible TB. The rate of recurrence could be higher in patients with drug-resistant TB, but comprehensive data is limited. We aimed to elucidate the rate of recurrence among patients with MDR-TB who finished their treatment successfully. A retrospective review was conducted of patients with multidrug-resistant tuberculosis (MDR-TB) to elucidate the rate of recurrence after successful treatment. Of 123 MDR-TB patients, 90 were declared as "cure" or "treatment completed" after individualized therapy. Among 75 successfully treated MDR-TB patients with at least 1 complete year of follow-up, 4 (5.3%) had recurrence.

Baseline characteristics of 4 patients with recurred MDR-TB

|    | Sex / Age | Treatment duration (months) | Resistance profile |
|----|-----------|-----------------------------|--------------------|
| #1 | M / 32 | First treatment: 34 | Beginning of first treatment :INH, RIF, SM, EMB, PAS, OFLX, PZA |
| #1 | M / 32 | Second treatment: 30 SM, EMB, PAS, OFLX, PZA | Beginning of second treatment : INH, RIF, |
| #2 | M / 49 | 26 | INH, RIF, SM, EMB, OFLX, PZA |
| #3 | F / 33 | 38 | INH, RIF, SM, EMB, PAS, PZA |
| #4 | F / 69 | 31 | INH, RIF, EMB, KM, CPM, PTH, PZA |

INH = isoniazid; RIF = rifampicin; SM = streptomycin; EMB = ethambutol; PAS = para-aminosalicylic acid; OFLX = ofloxacin; PZA = pyrazinamide; KM = kanamycin; CPM = capreomycin; PTH = prothionamide.

All patients with recurred MDR-TB were documented as "treatment completed" after treatment. Recurrence of MDR-TB is possible after successful treatment, especially in the "treatment completed" group.

## P3309
### Risk factors for primary multidrug-resistant tuberculosis in Hanoi, Viet Nam
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Although acquired multidrug-resistant (MDR)-tuberculosis (TB) is known to arise after inadequate treatment, transmission of MDR-TB has not been characterized well. We investigated risk factors for primary MDR-TB in Viet Nam.
In Hanoi, 543 previously untreated patients with smear-positive pulmonary TB were recruited. Sputum was collected before treatment and drug sensitivity test and spoligotyping of the isolates were performed. Adjusted odds ratio (OR) was calculated to analyze factors for primary drug resistance.
Of 489 isolates, 298 (60.9%) were sensitive to all drugs tested. Resistance to isoniazid, rifampicin, streptomycin and ethambutol accounted for 28.2%, 5.0%, 28.2% and 2.9%, respectively. Proportion of MDR-TB was 4.6%, mostly determined by rifampicin resistance. Younger age (25-44 years old) and living in urban area were significantly associated with isoniazid resistance (adjusted OR=2.08, 95%CI 1.29-3.35 and OR=2.34, 95%CI 1.25-4.39), whereas no factors analyzed were statistically significant for rifampicin resistance. HIV co-infection was a risk factor for MDR-TB (adjusted OR=4.37, 95%CI 1.51-12.64). Of 22 MDR-TB isolates, 14 (63.6%) were classified as Beijing type and 6 (27.3%) were a Vietnamese type EAI4_VNM; These two types accounted for more than 90%.
MDR-TB in HIV prevalent area of a large city should be carefully monitored to avoid increasing risk.

## P3310
### The analysis of the reasons of failures in treatment at MDR TB pationts
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In the Tomsk region from year 2004 to year 2008 there have been registered

88 cases of treatment failure of MDR TB within the program of Global Fund "Comprehensive strategy for reduction of burden of MDR tuberculosis". That has made 13,4% of total number of the patients registered for treatment. The given cohort had heavy social composition: 48 patients were unemployed, 5 patients were homeless, 52 persons suffered alcoholism, 7 drug addicts. In 10 patients on an initiation of treatment XDR was found.
From 88 patients new cases – 14 persons, repeated – 74 persons.
The number of reasons had their input into the lack of treatment success:
- low adherence to controllable treatment - 48,9% (the number of the missed doses in the intensive phase fluctuated from 19 to 38%), rendering patients some social support didn't influence their compliance:
- serious lung damage – 36,3%
- serious side-effects – 12,5% (owing to accompanying diseases - hepatitis, stomach ulcer, diabetes)
- refusal to undergo surgical treatment – 2,3%.
With the purpose to decrease treatment failures in patients with MDR TB since 2010 additional measures to the existing program have been developed:
Expansion of the program "Companion" in rural areas on managing difficult patients.
Strengthening of actions for the decrease in alcoholic dependence in patients undergoing chemotherapy.
Uninterrupted provision of medicines for side-effect treatment in places of treatment.
Wider use of surgical treatment.
Optimization of early TB case finding of among the population.

## P3311
### Death rates in patients during and after MDR-TB treatment in a semi rural area of South Africa
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**Introduction:** South Africa (SA) is ranked third amongst the 22 highest burden DR-TB countries in the world. The country also has an estimated HIV prevalence among incident TB cases of 73%. Very little data exists of death rates and causes of death both in patients on treatment and during post treatment follow up in these settings.
**Methodology:** Between 2000 and 2008, 753 drug resistant patients were registered at a dedicated MDR-TB service in the North West province of South Africa. Patients were hospitalised until culture conversion and after discharge return to the hospital outpatient clinic for follow-up and collection of medication.
**Results:** Of the 753 patients registered, 50.46% (380/753) were co-infected, of whom 37.6% (140/380) received HAART the majority from 2006 onwards. 5.4% (41/753) had primary resistance, and 1% (7/753) of patients had previous MDR-TB while the majority of patients, 90% (677/753) had been previously treated for sensitive TB. The overall cure rate was 67.2% (506/753) with default rates of 5% (37/753) and a failure rate of 2% (15/753). The death rate of patients on treatment was 20% (150/753); with 69.4% (68/98) having a known HIV-infected status. Death during the post treatment follow up phase was 6.4% (48/753) with a HIV-infection rate of 50% (24/48). These patients died despite a cure rate of 58.3%.
**Conclusion:** Successful treatment outcomes are possible in resource limited areas. It must be accepted, however, that despite these outcomes a proportion of patients are going to die post treatment, despite a good outcome, at least half of whom will be HIV-infected.