MDR TB out patient management

GUNTA KIRVELAITE
International training center for MDR TB treatment and management
RIGA, LATVIA

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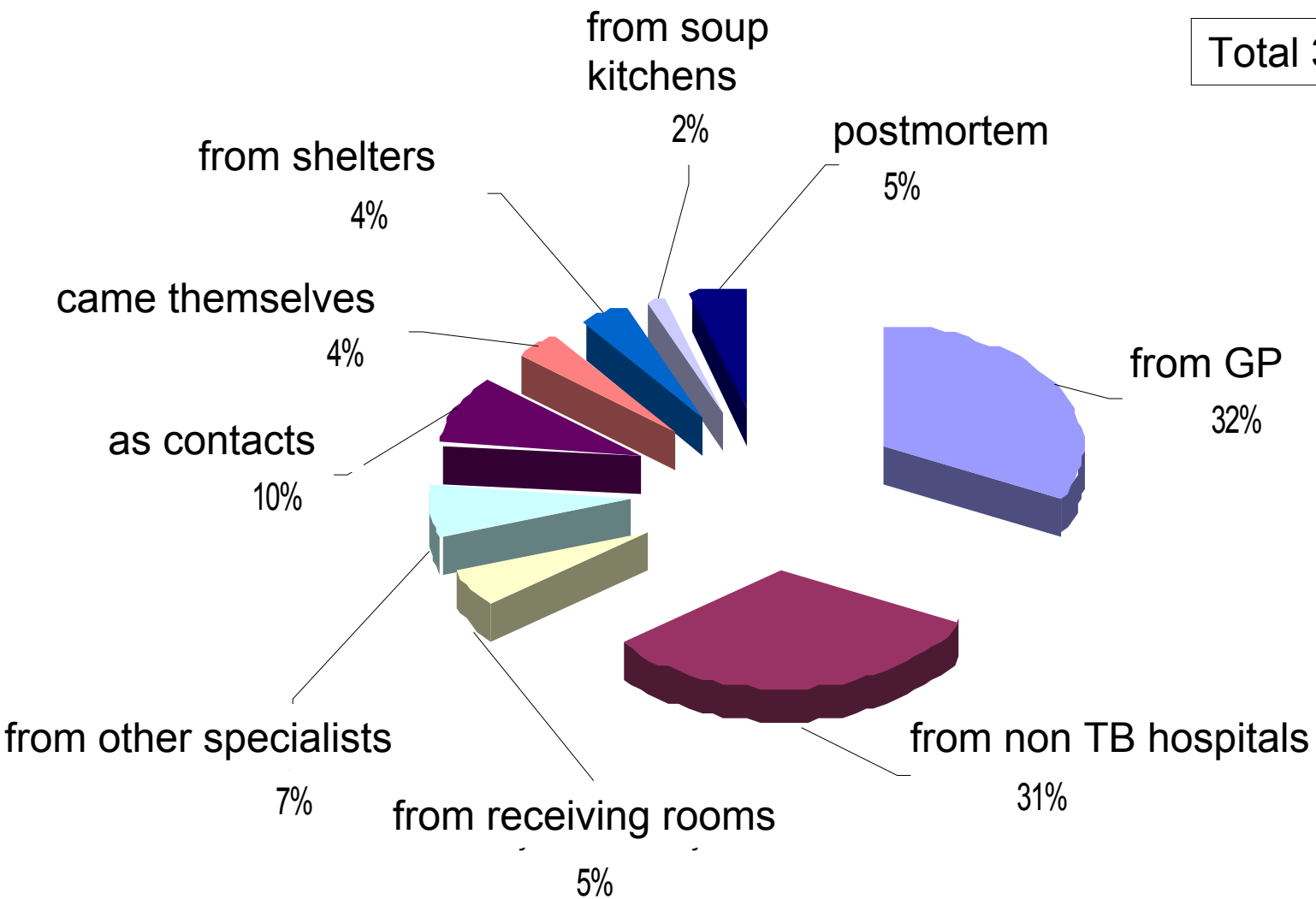
TB case finding (Riga 2005)



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Management of TB (MDR TB) case detection

- Examination of *TB risk groups* is needed to diagnose this illness timely.
- There are risk groups which examination is particularly important, but at the same time inconvenient, because it touches part of population that do not count health care as a priority or they have lack of information regarding tuberculosis.

They are potential clients of night shelters, visitors of soup kitchens, immigrants, drug users, persons affected with HIV, representatives of sexual minorities and sex workers .

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Active TB case finding among potential shelters clients

To detect TB cases among potential shelters clients

To decrease spread of TB among homeless people and community

X- ray examination

sputum collection from clients with cough

To organize admission for detected TB patients

To evaluate results

Examination for TB for asylum seekers is included in the epidemiologist safety law with X ray examination

- Collaboration with shelter administration, social workers and medical staff

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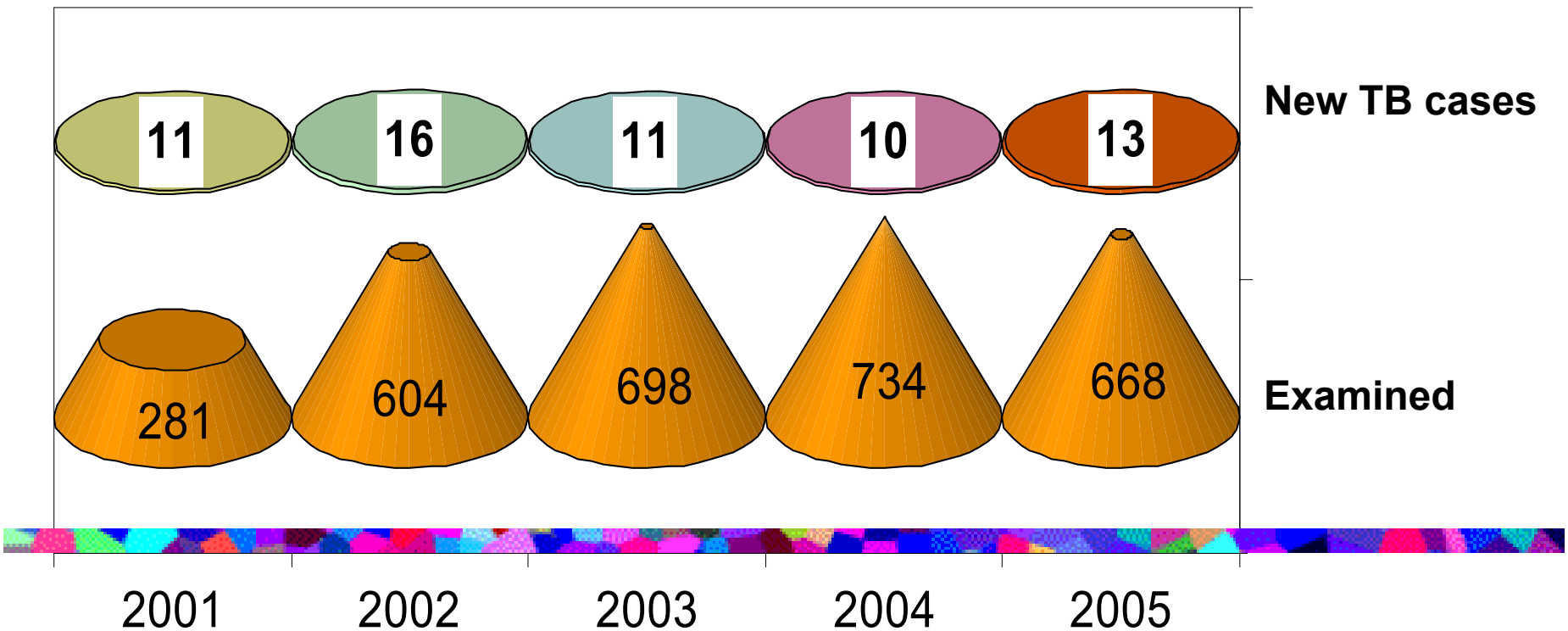
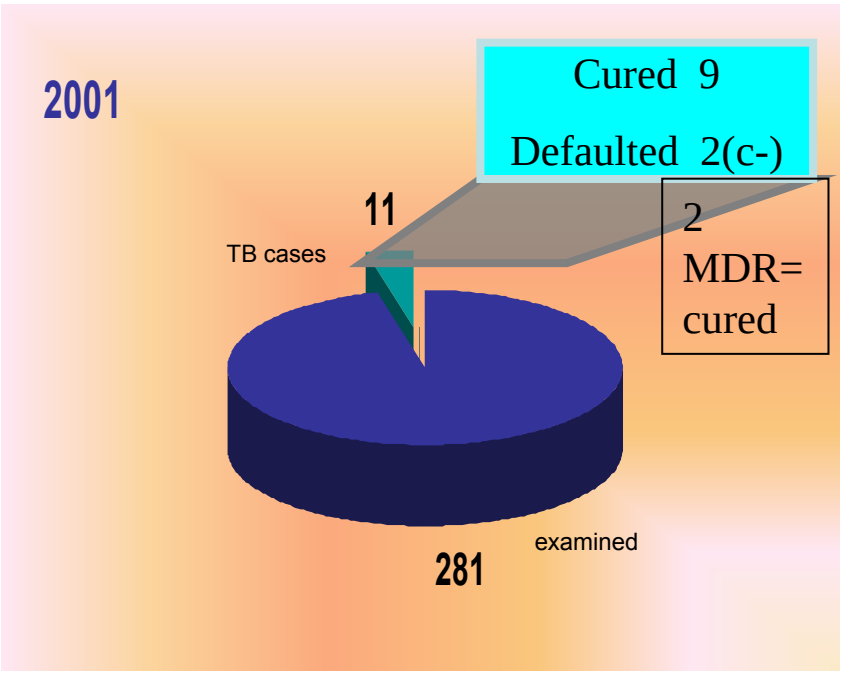
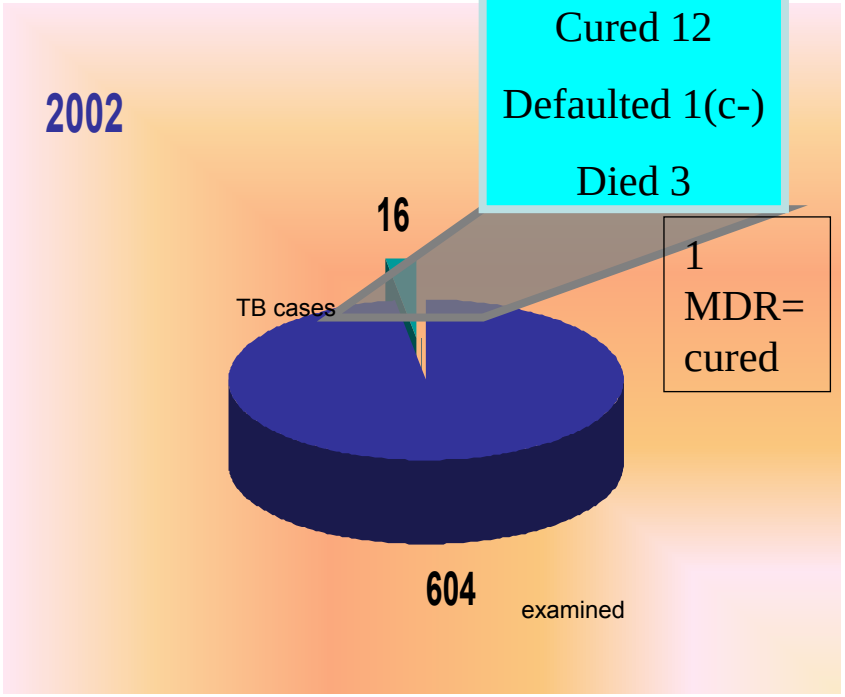
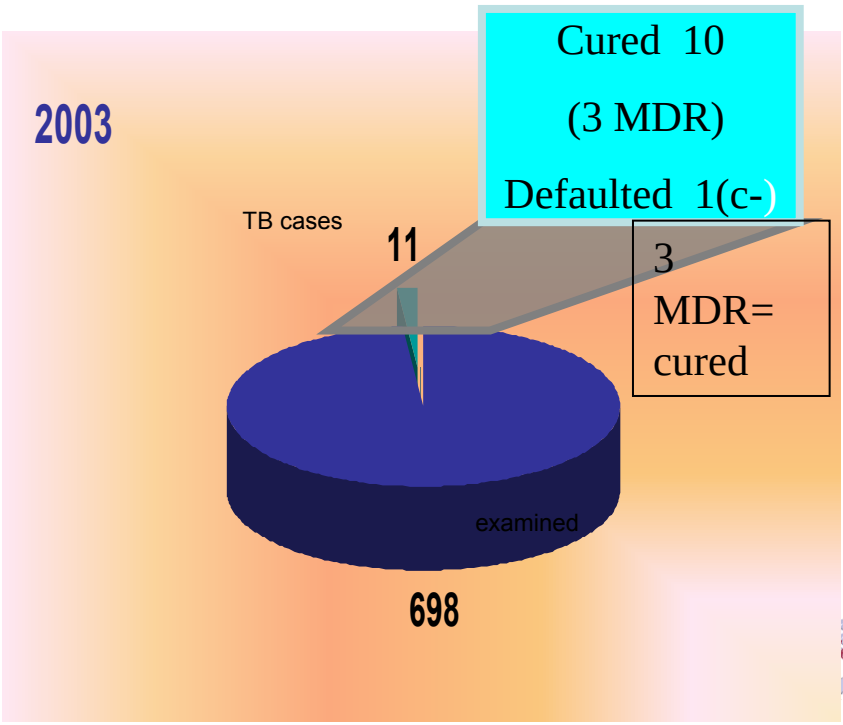
Shelters clients were examined from year 1998. Number of examined persons has increased from 281 cases in year 2001 up to 698 cases in year 2003; 668 in year 2005



All from shelters detected TB cases started treatment







Active TB cases finding among soup kitchens visitors

To detect TB among visitors
To decrease spread of TB among poorest part of inhabitants and to community

To select clients with cough
To motivate them to see doctor or cough up sputum for examination
To select patients for repeating examinations
To organize admission for detected / to evaluate results

- **Trained nurse**
- **List of soup kitchens and their working hours**
- **Bus fitted for**
  - **sputum collection**
  - **patients admission**

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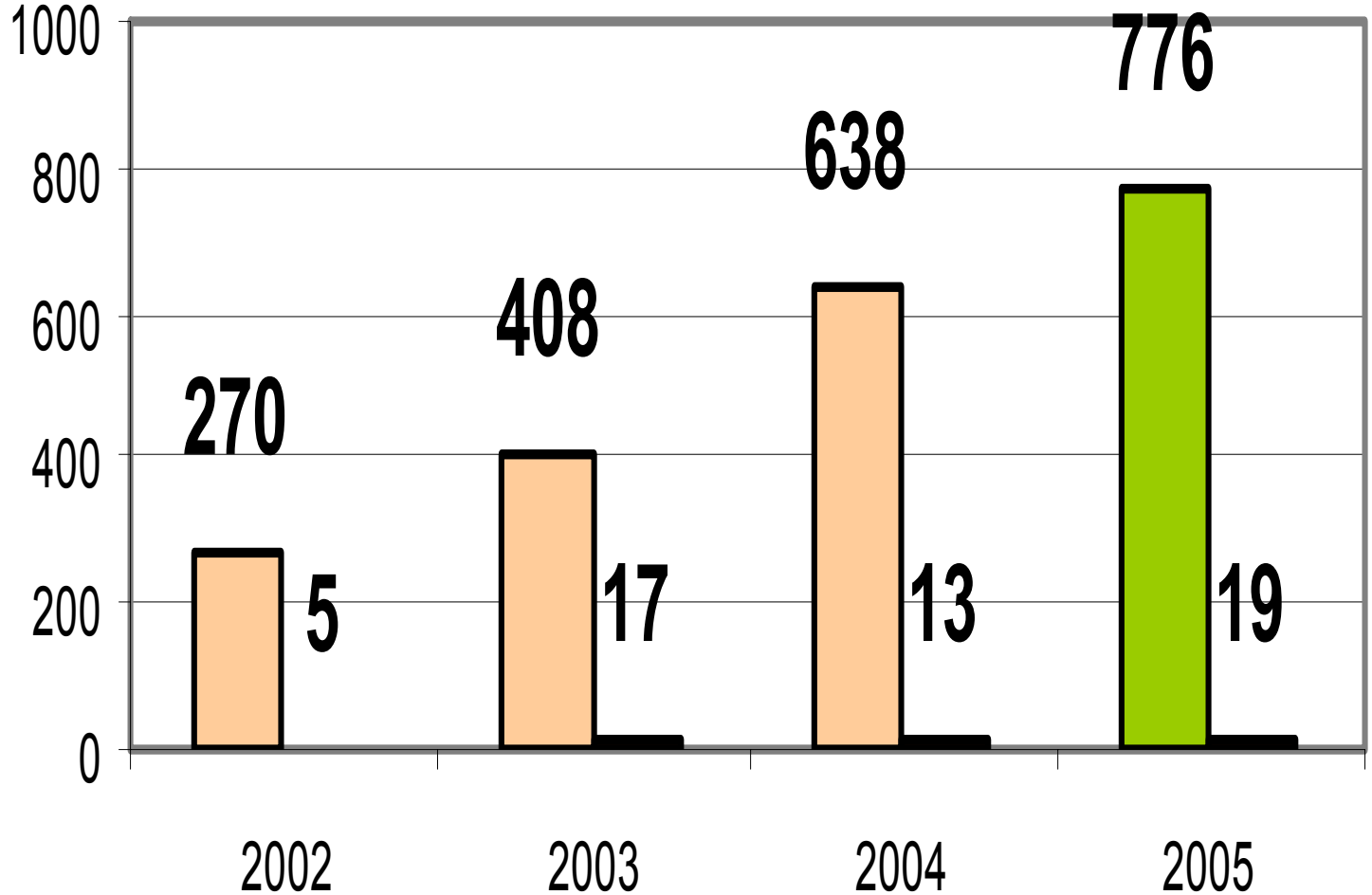

2 of them were ss(+); 17 - c(+); 6 did not start treatment(2005)

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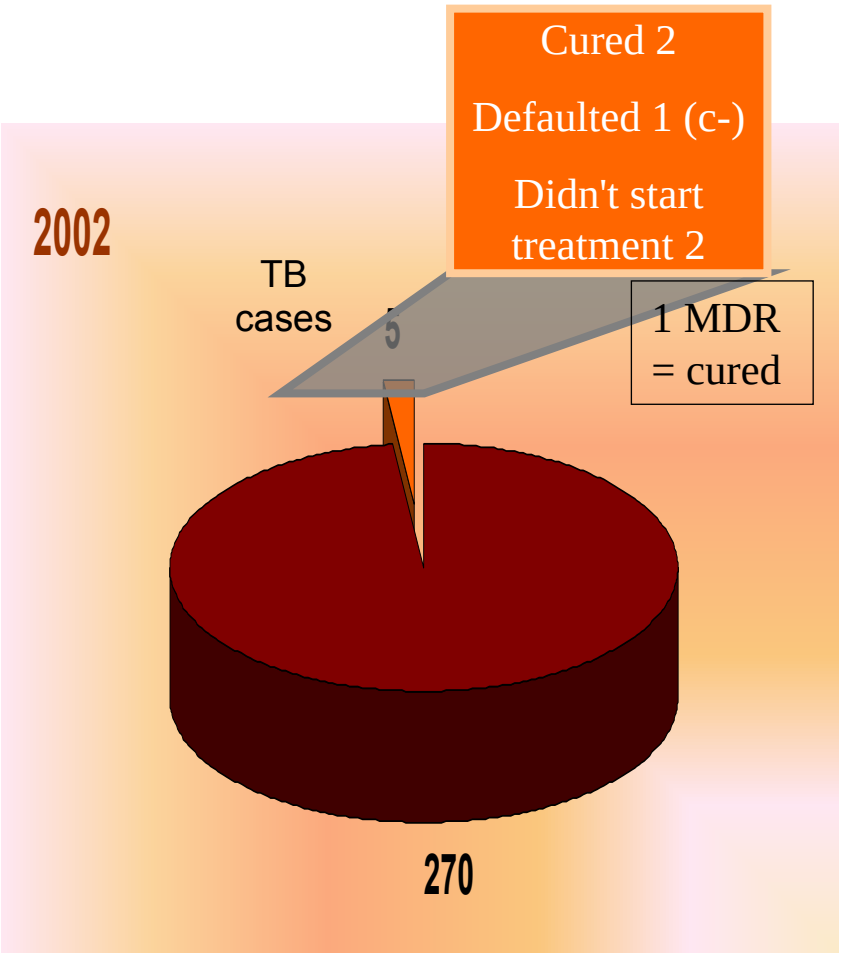

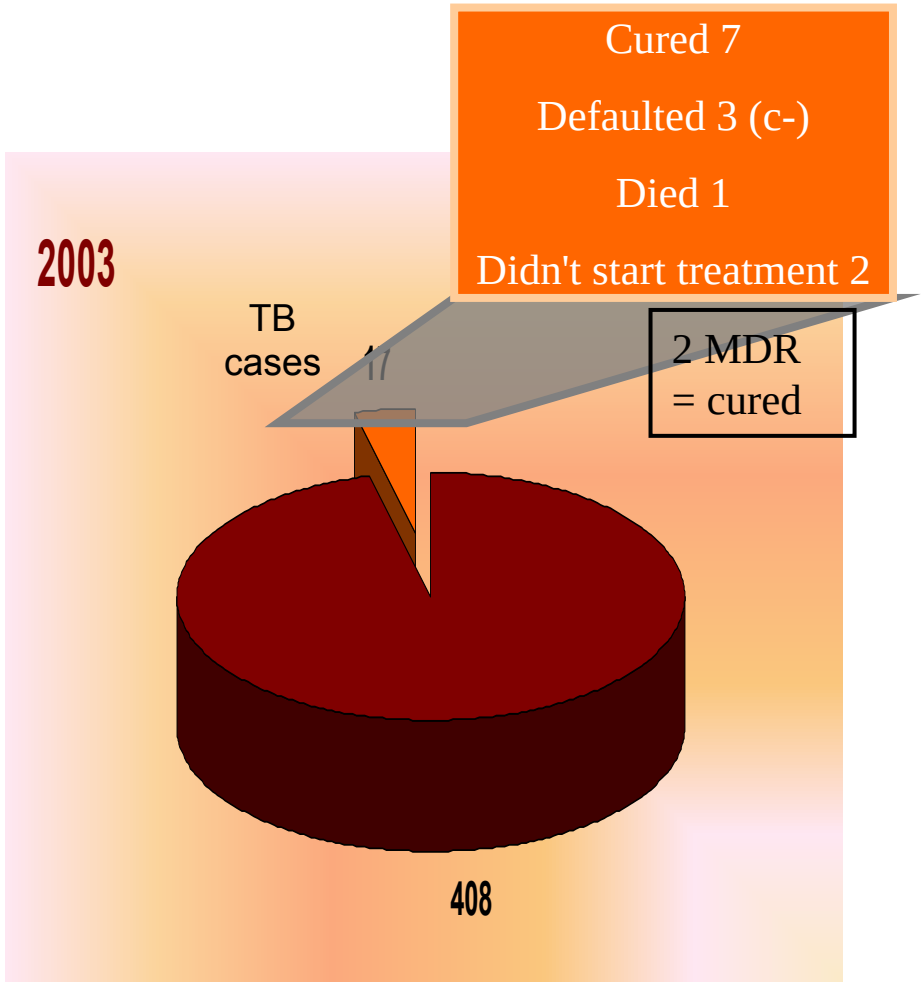

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Active TB cases finding among HIV risk groups

- To provide voluntary TB testing for PLWHA and risk groups for HIV
- To decrease spread of TB among people from HIV/TB risk groups and community

To give information about HIV/TB risk
To select clients with TB symptoms
To motivate them to see doctor

- Trained nurse in TB and VCT
- Two AIDS prevention center consulting offices (LTC)
- Different projects from NGO "DIA+LOGS" (contact, recourse and support centre for all affected by HIV/AIDS)

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During year 2003 voluntary examination for TB detection and informing about TB/HIV has been successfully started for risk groups in collaboration with HIV harm reduction programs :

- drug abusers,
- representatives of sexual minorities,
- persons living with HIV/ AIDS,
- sex workers
- persons working in the field of HIV/ AIDS

➡ **Information, consulting,**

➡ **training in cough hygiene,**

➡ **voluntary sputum collection**

(20 sputum samples in year 2003, all negative)

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Performing early TB case finding and information in high- risk environments is possible to detect infectious TB (MDR TB) cases and motivate them to see a doctor

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Ambulatory DOT plus

is the significant part of Latvian National DOTS plus program

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- **At short-course it is hard for patient to take anti TB drugs regularly during 6 to 8 month.**
- **It is even much harder in case of MDR-TB.**
  - **As the MDR-TB treatment course lasts 18 – 24 months it is more difficult for patient to complete full course**

For the largest part of patients
this form - MDR-TB
is acquired
due to irregular drug taking!!!

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- **There is only one way to make sure about patients adherence to treatment and that is DOT.**
- **DOT means that MDR-TB patients swallow all prescribed drugs under the supervision of health care workers.**

In the case of MDR-TB supervision must be provided during all period of treatment

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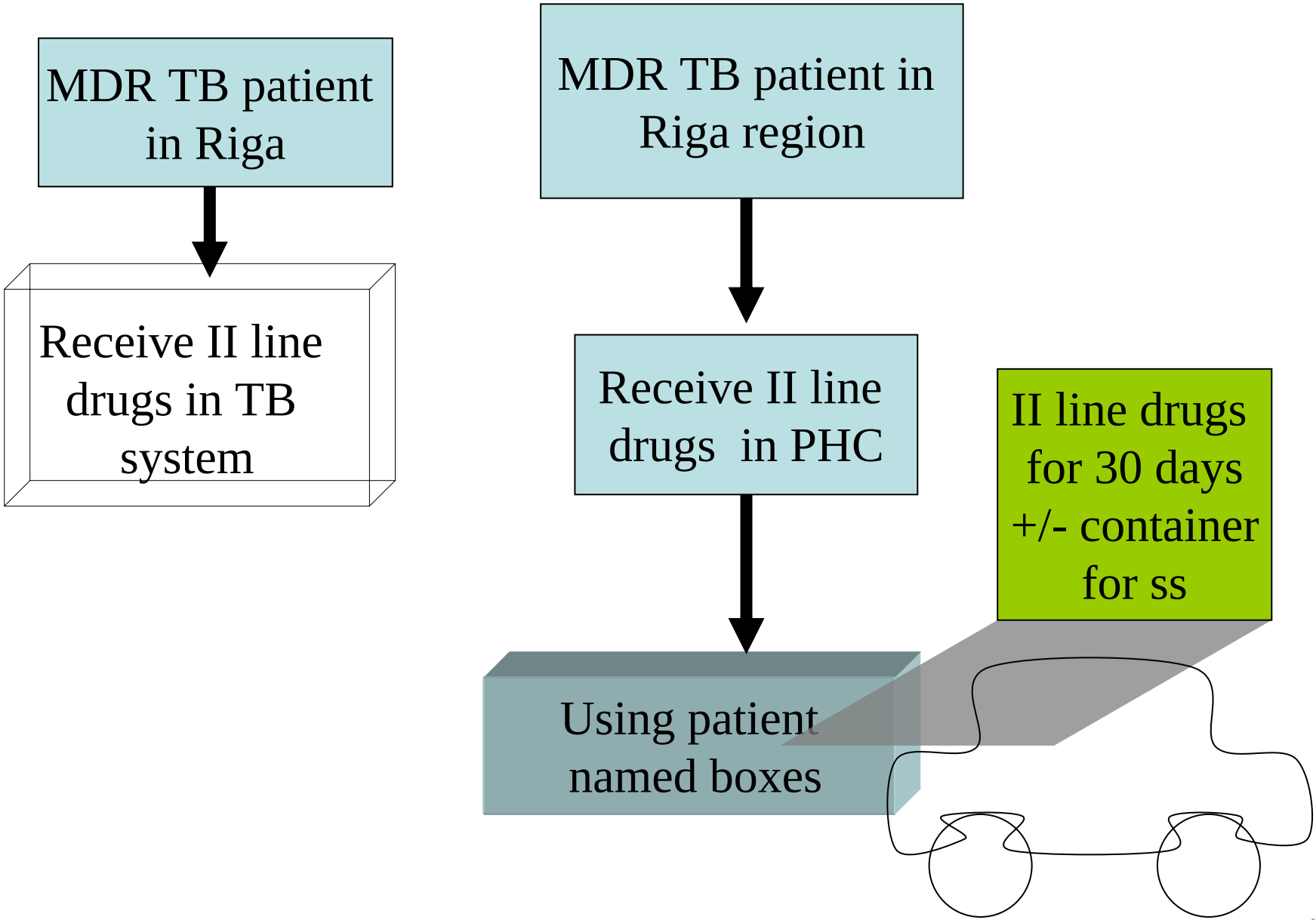

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DOT– plus **ambulatory** started in 1998

- office for MDR TB patients in Riga- city since April 1999 with
  - 1 MDR TB ambulatory physician
  - 1 MDR TB office nurse
  - 256 MDR TB cases (both on treatment and follow-up)

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Improvement in MDR TB out patients care

- **Situation with MDR TB patients in May 1999**
  - 95 – in hospitals
  - 16 – DOT ambulatory
  - 22 - interrupted treatment with II line drugs during last 2 month
  - 18 – interrupted treatment more than 2 month ago

Situation with MDR TB patients in February 2001

- 99 – in hospitals
- 42 – DOT ambulatory
- 5 - interrupted treatment with II line drugs during last 2 months
- 3 – interrupted treatment more than 2 month ago.

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All MDR TB patients have to start treatment in specialized MDR TB ward at least to sputum smear conversion to negative

Ambulatory treatment for MDR TB patients can be planned only after sputum conversation to negative:

- 2 culture (-) analyses
- or at least 3 sputum smear (-) analyses.

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The most important questions before patient discharges from hospital are:

1

- **Whether patient tolerates 1 doses therapy well?**
- **Whether patient receives *Protionamid*?**
- **Whether patient receives *PASS*?**
- **Did patient receive *Protionamid* and/ or *PASS* in one dose all treatment time in hospital or only before discharge?**

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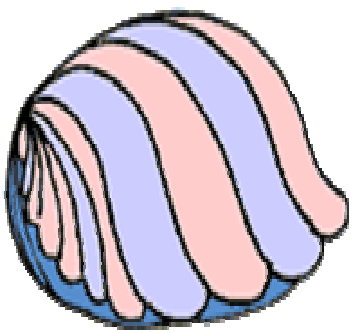
- Is patient adherent to treatment in the hospital?
- Patient adherence to treatment before MDR TB;
- If the patient is suspect as potentially non adherent, much more attention on training is needed (also for family)
- the history of previous adherence is discussed to evaluate the possibility to complete treatment ambulatory. If the previous adherence was bad ambulatory team can make decision that it is necessary to prolong hospital treatment.

- Alcohol abuse?
- How often patients used alcohol before hospital?
- How many days patient can drink in non- stop?
- Did patient use alcohol during hospital treatment time?

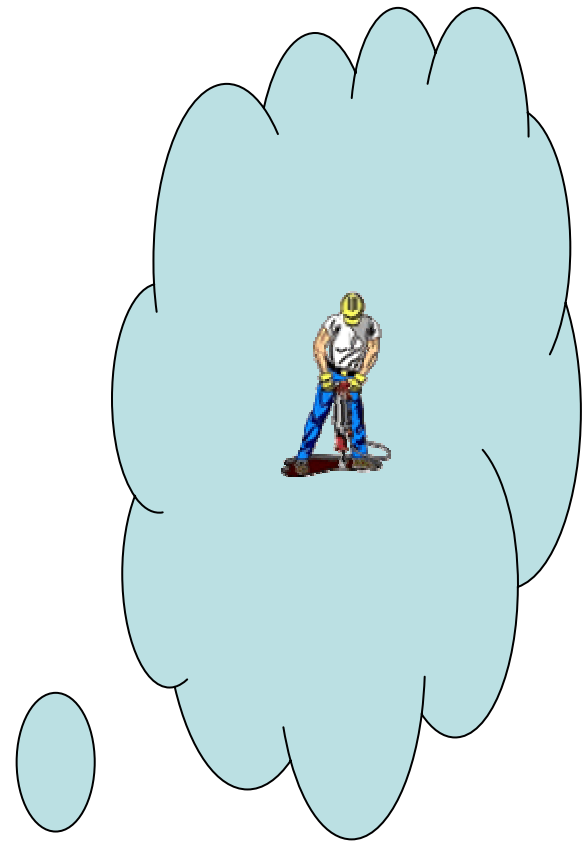
- Drug abuse?
- Non injections drug user?
- IDU?
- Methadone /buprenorfine therapy?
- There is possibility to include every TB patient who is IDU in State methadone /buprenorfine program in the Riga- city.
- Methadone is brought to ambulatory department from Center of drug abuse prevention and treatment for 1 week period for particular patient.

- Whether patient has a real living place?

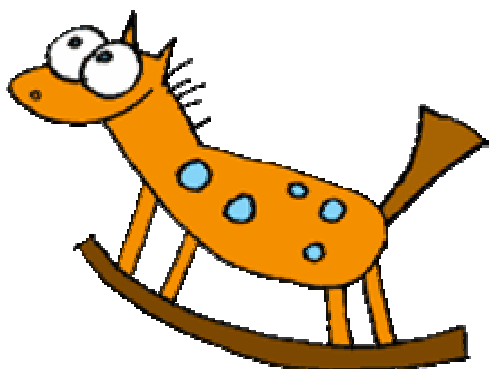
- Shelter?
- Agreement with Riga – city shelter : if shelter is needed for TB patient on treatment, these patients can stay in shelter during all treatment time.



- Ambulatory DOT compatibility with possible work.
- In case of MDR TB there is a big chance to loose regular job due to disease with so long treatment time
- During ambulatory treatment time patients trade to find any job, often it is periodical, out of city and with very long working time.



- Necessity for DOT at home;
- DOT at home for patient with limited movement:
  - Old people
  - Mothers with small children
  - Disable persons;
- Number of DOT at home is limited, not more than for 10 patients per day 5 (6)days per week;
- These groups of patients don't receive every day social support, but can appeal for another social assistance according their social status.



- **The discharge from hospital has been coordinated between hospital doctor and out patient clinic doctor.**
- **The first visit in out patient clinic is appointed.**
- **Planned discharging after:**
  - **coordination with out-patient clinic physician/ nurse;**
  - **decision made by *councillium*.**
- **Monitoring sheets are sent by courier/fax timely (day before discharge):**
  - ***Treatment recording sheet***
  - ***Councillium sheet***
- **Hence when patient comes to out patient clinic doctor has already studied the case.**

Then patient again signs “Patient and doctor contract”

(The patient commitment form)

AGREEMENT

1.I_____am informed that I have multirezistant tuberculosis which is:

very infectious for others

very difficult to treat –with very long treatment time [18-24 months or more]

2.To be cured

-I have to start treatment at hospital

-it can be necessary to swallow about 25 pills daily

-have to take injections for long time

-treatment can cause difficult bad feeling and I will have to learn to get on with them

3.If I will not undergo the full course of treatment

-I can infect with tuberculosis others, especially my family and children, because

>disease spreads by air by coughing, sneezing, expectorating, speaking, singing;

-irregular anti TB drugs taking leads to worsening

-compulsory treatment can be used

4.Treatment is very expensive

AFTER TREATMENT INTERRUPTION DOCTORS` COUNCILILIUM CAN DECIDE NOT RESTART THE TREATMENT

Main reasons when treatment cannot restart

>irregular drug taking

>advanced form of disease

5.Treatment output

-I will be uninfectious

-I will be cured

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- **The next step is to inform patient about possible social assistance during the treatment.**
- **If patient needs it he/she will write the request to social department describing what kind of help he/she needs.**

- Social assistance for Riga- city TB patients:
  - Every day food coupons 2 USD
  - Every day transport compensation to DOT office and back 0,75 USD
  - Additional food coupon at the end of week if all prescribed doses are taken 2 USD

- Social assistance for Riga region TB patients
  - Depends on decision of particular municipality
    - Monthly allowance
    - Rent or other debt coverage
    - Firewood supply

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During first visit after discharge:

Patient receive information about the working hours and location of DOT offices

which DOT /PHC office will be convenient for patient

Physician/nurse finds out the actual patient's living place

- **phone number**
- **possible contact persons in case of late or treatment interruption (support persons).**

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Next visit to doctor is submitted

The physician prescribes drugs that will be taken to DOT office for one-month period.

Patient has to visit physician one time per month or more often if necessary. Doctor's phone number is given in case if a telephone consultation is needed.

Nurse also reminds about “cough hygiene”

When all these questions have been discussed, patient has appointment with social worker and training nurse

Monthly visit to doctor includes:

- **patient examination,**
- **sputum analyses for smear and culture,**
- **drug prescription for next month,**
- **side effects evaluation**
- **Full blood count**
- **Urine analysis**
- **Liver function test**
- **Kreatinine- monthly while on injection**

- Special attention for:
- liver toxicity
- psychiatric disorders
- hematological disorders
- allergic reactions
- hearing and vestibular toxicity

x-ray examination is made once in 3 months
before case demonstration in doctor's councillium

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Drugs for side effects

- **Anti-emetics- *Metoclopramide* 10 mg usually given 30 minutes prior to meals or medications**
- **Anti-ulcer- *Omeprazole* 20 mg or *Ranitidine* 300 mg or *Cimetidine***
- **Antifungal- *Clotrimazole* 10 mg**
- **Antidiarrheals- *Loperamide* 4 mg initially**
- **Antidepressants, hypnotics, antipsycotics and anxiolycs also anticonvulsants only if specialist recommended**
- **Agents for peripheral neuropathy- *Pyridoxine* (B6)**
- **Analgesics- *Diclophenac, Ibuprofen* 200- 800 mg or *Paracetomol***
- **Agents against vestibular symptoms- *Meclizine* (Antivert) 25 mg**
- **Agents for cutaneous reactions- *Hydrocortisone* creams and antihistamines *Diphenhydramine* 25- 50 mg**
- **Thyroid replacement- *Levo- thyroxine* start 25-50- 100 mg increase by 12,5-25 at 3-8 week episodes**
- **Diuretics- *Furosemide* 20- 80 mg**
- **Bronchodilators- *Ventolin* 2 puffs x 4-6; *Beclomethasone*.**

2 DOT offices in Riga-city

- at State Agency of TB and Lung diseases out patient department (7 times per week)
- at center of Riga city- at the city HC (7 times per week)

  4 DOT nurses for regular work (Monday till Friday) 7^{00} -19^{00}

  Nurses for additional work in Sundays and Saturdays 7^{30} -13^{00} in DOT offices.

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Every day 160 – 200 TB&MDR patients receive ambulatory DOT in Riga city

Nurses observe the swallowing of each prescribed drug, do injections, make a specific register

This register includes information about:

- **Each swallowed or not swallowed drug with "V" (tick) or "0" (zero) in therapy sheet**
- **On the separate sheet patient and nurse signs that drugs have been taken**

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- Nurses observe the swallowing of each prescribed drug, do injections, make a specific register.
- This register includes information about:
  - Each swallowed or not swallowed drug with “√” (tick) or “0” (zero) in therapy sheet.
  - On the separate sheet patient and nurse signs that drugs have been taken.

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When the patient has taken the drugs money for transportation and food coupon is given. Patient and nurse signs about it.

Information about side effects is noted in the therapy sheet and if needed patient is sent to the doctor for consultation.

When patient has taken drugs nurse has a small talk with patient to avoid the situation that patient splits out the drugs after leaving DOT office. At the end of meeting nurse reminds patient about next day visit.

DOT and DOT plus in PHC (Riga region)

- ~ 85 PHC (Riga region)
- Every day 20-25 patients (3- 5 MDR TB) receive DOT in PHC
- Number of MDR TB patients in Riga region (01-01-2006) = 24
  - Admitted for treatment 12
  - On treatment in PHC = 4
  - Defaulters = 4 (all ss-)
  - Failures = 4 (2 isolated in hospital, 2 at home)

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Monitoring

- **Each MDR-TB case is monitored**
- **There is special register**
- **In this register the following information is gathered about each patient:**

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First page:

- Name, surname
- Person identification code
- Year when TB was diagnosed for the first time
- Year when MDR-TB was diagnosed
- To which medicine patient is resistant
- Date when II line treatment was started and finished
- Treatment results include:
  - date when full course was successfully completed,
  - treatment was stopped because of failure,
  - whether the treatment was stopped while patient was ss+ or c+ or c-
  - date of patient transfer out,
  - date of death

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Second page:

- shows patient's treatment results monthly for 3 years period
- Each month the following information is gathered:
  - has patient received treatment,
  - has patient ss+ or c + or converted to negative,
  - longer interruptions are noted,
  - in which hospital or ambulatory department treatment is provided
  - The last graph shows the lengths and results of treatment

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- **Treatment results and patient's adherence to treatment is analyzed monthly and reported in MDR-TB board meeting**

- Each MDR TB case is demonstrated to MDR TB physicians councillium each 3 months as prescribed
  - For prolonging treatment/ treatment review
  - If there are serious side effects If any of prescribed drugs is not temporary available for treatment review while that drug is not available
  - Before surgery
  - If treatment has been interrupted for more than 2 months
  - If treatment has been interrupted frequently during one month
  - Before recurrent admission
  - For decision “cured”
  - For decision “failure”
  - In other complicated cases

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MDR TB councillium

- **Consult MDR TB cases 1 time per month in ambulatory department**
- **Extra consultations for out patient cases are provided in TB hospital 1 time per week if necessary**

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Patient adherence strategies

- Complete patient information
- Informed consent
- Health education
- Family involvement
- Telephone follow-ups
- Home visits for defaulters
- Incentives: every day food coupons+ additional coupon every week
- Enablers: transport compensation

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If there are psychosocial problems for patient

Psychosocial support is

- **Started in hospital**
- **Physician**
- **Head nurse in TB ward – training nurse in DOT**
- **Social worker in the hospital**
  - **Work with socially difficult patients individually / in groups**
  - **Help reestablish passport / notify in family doctor register**
- **Ambulatory social worker visit prospective problematic patients in the hospital.**

Team work

Physician
from State TB register

Supervises patients
tracing back in whole
country

Ambulatory department

Responsible for patient tracing
back management in Riga

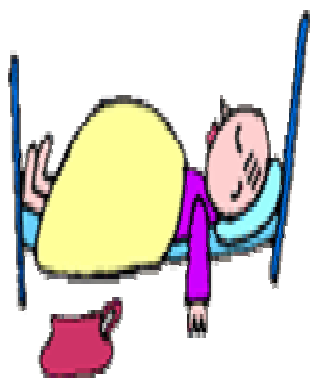
Physician from each
MDR TB hospital

reports about
patients defaulting
from hospital

MDR-TB
office nurse

Nurse assistant

DOT provider at home



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Team work

Ambulatory head nurse

Supervise patients tracing back process in all department

DOT office nurse

MDR office nurse

Responsible for patient tracing back management in Riga

Nurse assistant

Responsible for reporting about patients who did not came in DOT office until the end of each day

DOT provider at home

Training nurse

Social worker

Physician

result

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Team work

Ambulatory head nurse

Supervise patients tracing back process in all department

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Responsible for patient tracing back management in Riga

Nurse assistant

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DOT provider at home

Training nurse

Social worker

Physician

result

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Weekly team meeting

- **Every office nurse reports about the number of non adherent patients during last week**

- **Every case is discussed separately:**
  - **What was done**
  - **Which team members were involved in problem solving**
  - **Result: is positive or no**
  - **What else is possible to do in each case**

Monitoring and evaluation forms

- **Sputum examination and results sheet**
- **DST results sheet**
- **Directly observed treatment sheet**
- **Treatment sheet**
- **Side effect sheet**
- **MDR TB councilium sheet**

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Follow up after cure

- **TB physicians consultation 2 years every 6 months for primary MDR TB cases**
- **More for acquired MDR TB cases**
  - **Evaluate symptoms**
  - **2 sputum ss and c**
  - **x-ray examination**

TB/ MDR TB contact investigation

- active TB contact screening is recommended for children and adolescent in Latvia.
- persons from close contact to all cases of pulmonary TB should be checked.
- patients with suspected TB/ MDR TB infection should be followed for at least 2 years.

Contact Investigation (CI) Process

- **Interview patient**
- **Collection of information**
- **Prioritize contact investigations**
- **Investigation in the field**
- **Examination, treatment & follow up contacts**

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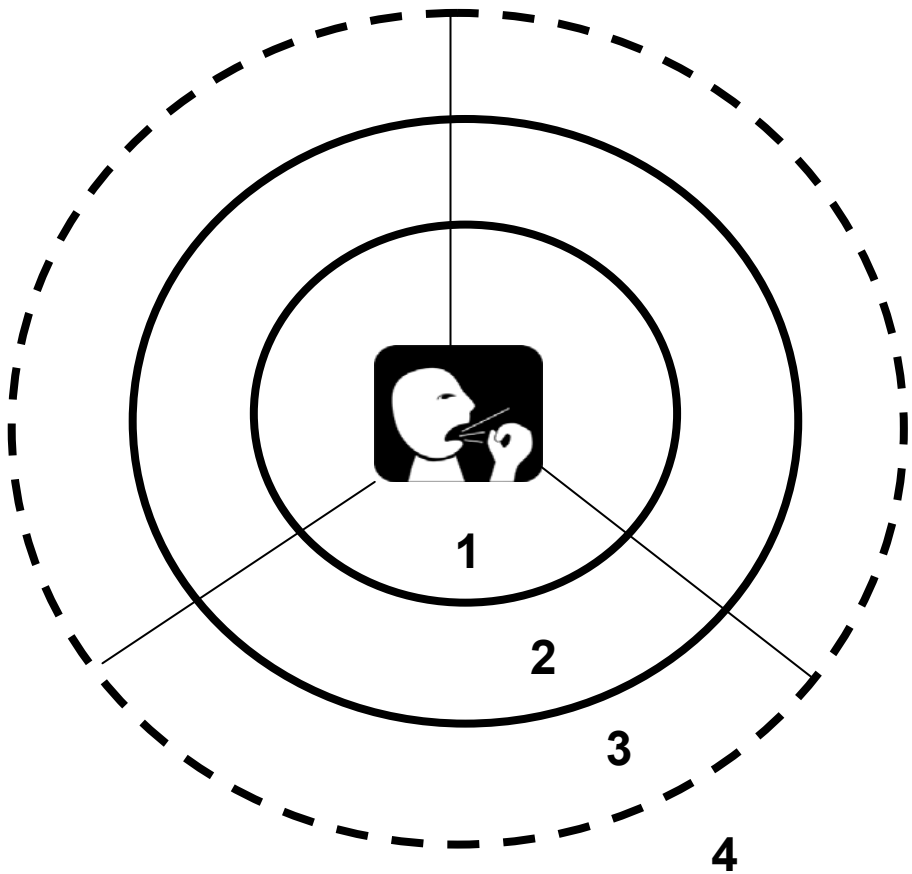
Stone-in-the-Pond principle



1 = daily contact

2 = weekly contact

3 = monthly contact

4 = occasionally

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Chart of source case patient

Index case (first name, surname)	Data of birth	Address	Dg., ss; c, DST	On treatment since

Close contact persons

№	First name, surname	Data of birth	Address	Affinity, time and duration of contact
1.				
2.				
3.				
4.				

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Routine screening for contact persons used in Latvia

- **for children**
  - **TST**
  - **CXR**
- **for adults**
  - **CXR**
  - **sputum examination**

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Preventive treatment

- **Not used for adults due high level of H resistance**
- **Used for children, but regarding index case DST**

Preventive treatment

H susceptible index case

H 5 mg/kg daily
6 months

H 12 months
(HIV infected)

H resistant index case

RIF 10 mg/kg
(4 month)

RIF + PZA + ETB
DOT (4 month)

Few cases

Few cases

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Preventive treatment

MDR index case
with HRS resistance

ETB + PZA
4 - 6 month
> 6 year of age

Few cases

Few cases

index case with resistance
to all I line drugs

Due to high MDR TB in Latvia the treatment is necessary, but is not possible

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