Detailed Implementation Plan (DIP)
for PVO Child Survival and Health Grants Programs

Submitted to:
United States Agency for International Development (USAID)

Submitted by:
Doctors of the World-USA

Program Location: Romania – Bucharest (Sector 5), Ilfov, and Neamt

Cooperative Agreement Number: GHS – A – 00 – 03 – 00016 – 00

Program Dates: October 1, 2003 – September 30, 2006

Date of Submission: June 30, 2004

Prepared by:

Headquarters Staff:
Alka Dev, Program Manager
Vandana Tripathi, Program Director
Artem Vorobiev, Program Associate
Abigail Smith, Director of Finance and Administration

International Consultants:
Lisa Adams, TB Specialist
Eleanor Levine, Pfizer Health Fellow

Field Staff:
Gazmend Zhuri, TB Project Director
Bogdan Pana, Project Coordinator
Valerita Curtasu, Finance Coordinator
Georgel Radulescu, Roma Health Education Coordinator

TABLE OF CONTENTS

Page

Section A EXECUTIVE SUMMARY……...……..…… 1

Section B CSHGP DATA FORM..……..…… 3

Section C DESCRIPTION OF DIP PREPARATION PROCESS……...……... 8

Section D REVISIONS (FROM ORIGINAL APPLICATION)……. 10

Section E DETAILED IMPLEMENTATION PLAN……..……12

E.1 Summary of Baseline and Other Assessments……12

I. Government Policy and Resource Context……12
II. Primary and Secondary Data Collection ..…… 14
III. Findings from Primary and Secondary Data……..…...16
A. Country Context…….…... 16
B. Target Areas Context…...…….. 17
C. Project Sites……21
D. KABP Survey Results……22
IV. Conclusions from Data Analysis…….. 35

E.2 Program Description by Objective, Intervention and Activities…….36

Objective 1 ……... 37
Objective 2 …….…….. 41
Objective 3 ……... 45
Objective 4 ……... 53
Table 1: Behavior Change Matrix for Providers and Patients ……57
Table 2: Intended Role of Institutional Partners ……..58
Figure 1: Activities and Reporting Relationships of Partners ……. 59

E.3 Program Monitoring and Evaluation Plan ……... 60

E.4 Work Plan …….. 64

ANNEXES

Annex 1 Response to Application Debriefing
Annex 2 Program Planning Matrix
Annex 3 Report of Baseline Assessment (KABP Survey) and Questionnaires
Annex 4 MOU/Letters of Support
Annex 5 Technical Backstopping/CVs
Annex 6 Standard Forms 424 and 424A with Detailed Budget
Annex 7 Monitoring and Evaluation Plan

LIST OF ACRONYMS

AIDS	Acquired Immuno-deficiency Syndrome
ATD	Anti-TB Dispensary
CHN	Community Health Nurses
CSHGP	Child Survival and Health Grants Program
DIP	Detailed Implementation Plan
DOT	Directly Observed Therapy
DOTS	Directly Observed Therapy, Short Course
DPH	Department of Public Health (within MHF)
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GP	General Practitioner
HIV	Human Immuno-Deficiency Virus
HQ	Headquarters
IEC	Information, Education and Communication
IUATLD	International Union Against Tuberculosis and Lung Diseases
KABP	Knowledge, Attitudes, Behavior and Practices
MDR-TB	Multidrug-resistant Tuberculosis
MHF	Ministry of Health and Family
MOJ	Ministry of Justice
MOE	Ministry of Education
NTP	National TB Control Program
OR	Operational Research
PHC	Primary Health Care
PSI	Population Services International
PVO	Private Voluntary Organization
TB	Tuberculosis
USAID	United States Agency for International Development
WHO	World Health Organization

Section A: Executive Summary

Program Category: Mentoring (*with Population Services International*); Tuberculosis Control.
Program Location: Romania: Bucharest Sector 5, Ilfov and Neamt Counties
Estimated Number of Beneficiaries: In target counties (last census 2002): Bucharest Sector 5, Total population 272,305; Ilfov County Total Population 300,109; and Neamt County Total population 554,516. Total population in intervention areas: 1,126,930.
Estimated level of effort for each intervention: 100% TB Control.
Local partners: National Tuberculosis Control Program (NTP); Romanian Ministry of Health with Department of Public Health, PSI Romania, Ministry of Justice (Penitentiary System), Ministry of Education with Department of Research and Youth, and Romani CRISS (Local Roma NGO).
Start and End Dates: October 1, 2003 – September 30, 2006.
Funding Level: $1,699,890 (USAID) and $437,741 (PVO cost share).
Name and Position of USAID Mission Representative: Dr. Gabriela Paleru, Democracy and Social Sector Reform Office.
DIP Authors: *HQ:* Alka Dev (Program Manager), Vandana Tripathi (Program Director), Lisa Adams (TB Consultant), Abigail Smith (Director of Finance and Administration). *Romania*: Gazmend Zhuri (TB Project Director), Bogdan Pana (Project Coordinator), Valerica Curtasu (Finance Coordinator) and Georgel Radulescu (Roma Health Education Coordinator).
DIP Reviewers: Melissa Merten and Daun Fest (PSI), Iulia Husar (Romanian NTP), Julie Wallace and Emily Wainwright (USAID).
Contact Person at DOW HQ: Alka Dev, Program Manager (alka.dev@dowusa.org).

Problem Statement:
Since the early 1990s, when economic and political decline contributed to the deterioration of public health structures in Romania, the Tuberculosis (TB) incidence has been increasing at alarming rates. The TB incidence doubled since 1990, jumping from 70/100,000 to 138.7/100,000 with 31,000 new cases and relapses reported in 2002 alone. In Europe, TB in Romania is the top-ranking infectious disease; further exacerbated by extreme poverty. The incidence in highest among adults of working age, but especially high among the Roma and in prisons.

In 2002, in Bucharest County the incidence rate was 135.8/100,000; Ilfov was 194,6/100,000 and Neamt reported 107.21/100,000. In the first 9 months of 2003, 1,681 new TB cases were diagnosed in Bucharest, 450 new cases in Neamt, and 387 new cases in Ilfov. The relapse incidence rate for Ilfov County was ranked second in Romania at 34.3/100,000 and well above the national average of 19.8/100,000. Neamt rate was close behind at 32.9/100,000, and Bucharest/Sector 5 came in highest with 40.2/100,000. TB incidence amongst the Roma is extraordinarily high at 1023.7/100,000. TB in the Penitentiary System is also alarming, increasing from 750.4/100,000 in 1999 to 1252/100,000 in 2002.[1]

Patients are limited in their ability to access care due to a lack of TB knowledge and lack of access to national insurance coverage for the unemployed, Roma and the poor which weighs against the intensity of TB treatment. Continued treatment for TB must be observed with each dose in a health clinic. Barriers to TB treatment are exacerbated by the competing life demands of marginalized populations.

[1] Data given to DOW by Deputy of Penitentiary Medical Service, Dr. Lucia Mihalescu.

Project Goals, Objectives and Strategies:
The Project goals are to improve treatment success rates among TB patients from vulnerable groups and to build the capacity of the Romanian NTP to provide effective health education and community outreach services. DOW's project goals were determined in close collaboration with the National Tuberculosis Control Program (NTP) staff, with contributions from USAID and the Romanian Ministry of Health and Family (MHF). Additional technical assistance on the BCC/IEC components, including the baseline KABP surveys, was provided by PSI.

Objectives are organized by strategy, focusing first on comprehensive national public health education for TB. Following this, the activities build provider capacity to deliver appropriate health messages, including through IEC materials and BCC, for both health system providers and community health network providers, followed by targeted IEC and BCC activities for vulnerable populations. An incentives program will be piloted and assistance provided to NTP for the transfer of monitoring and evaluation capacity for TB health education. The objectives are:

Objective 1: Develop a national TB and DOTS health education strategy with the MHF.
Objective 2: Strengthen and develop TB knowledge and communication and support skills of health providers to promote patient TB treatment completion.
Objective 3: Strengthen and develop TB knowledge in vulnerable groups, along with systems and approaches, to support treatment completion.[2]
Objective 4: Increase treatment adherence for TB patients by providing incentives for treatment completion, including coupons for transportation, food, and hygiene products.

Targeted providers include General Practitioners, General Nurses, Community Nurses, Roma Health Mediators, and Nurse Case Managers. Major planned interventions include provider training on patient education and communication skills, DOTS patient follow-up and monitoring; TB IEC and BCC campaigns; initiation of a Nurse Case Manager system and training of community health network providers in case management skills; and incentives aimed at patients and their families to encourage treatment adherence.

Major activities include:

- **Health Education:** Initiate health education strategies in collaboration with the Department of Public Health (DPH) to develop, implement, monitor and evaluate national campaigns for TB awareness for the general population. Implement targeted IEC and BCC activities for identified vulnerable populations. Both campaigns aim to increase TB knowledge, improve DOT adherence, and reduce stigma.
- **Public Health Systems:** Mobilize primary health care providers, including General Practitioners, Family Medicine Nurses and Nurse Case Managers, to educate TB patients in the continuation phase as well as informing other patients about TB treatment. Link an incentives pilot to promote adherence.
- **Community Health Networks:** Mobilize community based health workers, including Roma Health Mediators and Community Nurses, to provide case management services to high-risk TB patients at the community level, with a particular focus on defaulters.

[2] Vulnerable populations throughout the document includes ex-prisoners, Roma, poor Romanians, TB patients and their families.

Section B: CSHGP Data Form

Please see next four pages.

Child Survival Grants Program Project Summary

DIP Submission: Jun-29-2004
DOW Romania

Field Contact Information:

First Name:	[redacted]
Last Name:	[redacted]
Address:	Stirbei Voda 26-28, 3rd floor
	Sector 1
City:	Bucharest
State/Province:	
Zip/Postal Code:	
Country	Romania
Telephone:	011-40-21-312-4441
Fax:	011 (40) 21.312.44.98
E-mail:	gazmend.zhuri@dowusa.org
Project Web Site:	www.dowusa.org

Project Information:

Project Description:	Romanian Tuberculosis Control Partnership Project. The project focuses on strenghening the national DOTS strategy to improve treatment success rates among TB patients from vulnerable groups and to build the capacity of the Romanian NTP to provide effective health education and community outreach services. The project is designed to ensure a sustainable intervention in TB in the 3 project sites including progress toward a 70% detection of expected new cases of TB and a 85% cure rate. Objectives are organized by strategy, focusing first on a comprehensive national public health education strategy for TB. Following this, the objectives build on provider training to deliver health education messages for both health systems providers and community health network providers followed by targeted IEC and BCC activities of vulnerable populations. An incentives program will be piloted and

	assistance provided to NTP for the transfer of monitoring and evaluation capacity for TB health education.
Partners:	National Tuberculosis Control Program, Department of Public Health, Ministry of Justice, Ministry of Education, Romani CRISS (local Roma NGO) PSI Romania (Mentor)
Project Location:	Bucharest Sector 5, Ilfov and Neamt counties

Grant Funding Information:

USAID Funding:(US $)	$1,699,890	**PVO match:(US $)**	$437,741

Target Beneficiaries:

Type	Number
(No Data)	

Beneficiary Residence:

Urban/Peri-Urban %	Rural %
54%	46%

General Strategies Planned:

Advocacy on Health Policy
Strengthen Decentralized Health System

M&E Assessment Strategies:

Health Facility Assessment
Organizational Capacity Assessment with Local Partners
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation)

Behavior Change & Communication (BCC) Strategies:

Mass Media
Interpersonal Communication
Peer Communication
Support Groups

Capacity Building Targets Planned:

PVO	Non-Govt Partners	Other Private Sector	Govt	Community
US HQ (General) Field Office HQ	PVOs (Int'l./US) Local NGO	Private Providers	National MOH Dist. Health System Health Facility Staff Other National Ministry	Health CBOs Other CBOs CHWs

Interventions:

Tuberculosis 100 **%**
** CHW Training
** HF Training

Indicator	Numerator	Denominator	Estimated Percentage	Confidence line
Percentage of children age 0-23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)	0	0	0.0	0.0

Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child	0	0	0.0	0.0
Percentage of children age 0-23 months whose births were attended by skilled health personnel	0	0	0.0	0.0
Percentage of mothers of children age 0-23 months who received at least two tetanus toxoid injections before the birth of their youngest child	0	0	0.0	0.0
Percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours	0	0	0.0	0.0
Percentage of infants age 6-9 months receiving breastmilk and complementary foods	0	0	0.0	0.0
Percentage of children age 12-23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	0	0	0.0	0.0
Percentage of children age 12-23 months who received a measles vaccine	0	0	0.0	0.0
Percentage of children age 0-23 months who slept under an insecticide-treated bednet the previous night (in malaria-risk areas only)	0	0	0.0	0.0
Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	0	0	0.0	0.0
Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	0	0	0.0	0.0
Percentage of mothers of children age 0-23 months who cite at least two known ways of reducing the risk of HIV infection	0	0	0.0	0.0
Percentage of mothers of children age 0-23 months who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated	0	0	0.0	0.0

Comments
Used KABP Surveys for TB baseline assessments (instead of KPC).

Section C: Description of DIP Preparation Process

The DIP activities were initiated in October 2003 and included: a discussion with NTP to re-orient the project focus (see Section D on revisions) in light of the GFATM funding, office start up and project staff recruitment, design and implementation of baseline research framework, partners' meetings, collection and review of secondary data, DIP drafting and editing.

Key project start up activities included:

- Review of pre-grant assessment documents by field and HQ staff, including USAID comments
- Preparation of key job descriptions and recruitment plan
- Finalization of mentoring agreement details with PSI
- Legal and logistical assistance from PSI regarding operating in Romania including personnel policies, labor laws, financial reporting, recruitment, etc.
- Key stakeholder meetings, including NTP, WHO, USAID Mission, Romani CRISS, MOJ
- Registration of office in Romania
- Arrangement of baseline consultant visits to Romania including Pfizer Fellow to design research action plan and TB specialist to assess community DOTS implementation
- Review of DIP guidelines, TRMs, and other TB resources

Secondary baseline research was carried out by DOW staff and the TB consultant (Dr. Lisa Adams) and focused on data collection and review form the NTP, the MHF, and the 2002 census results. Site visits were also conducted in order to gain a better understanding of constraints in effective community based DOTS implementation. The baseline KABP surveys were adapted from DOW's Kosovo TB Control Project and reviewed with partners before implementation. Partners reviewing surveys included the NTP, the MOJ and the Roma Counselor to the Minister of Health. DOW also contracted a social marketing research group, Mercury Research, to implement the survey in the 3 project sites. Mercury personnel and DOW staff collaborated to develop a qualitative research component including in-depth interviews and focus group discussions. The results from the qualitative research were used to update the KABP surveys for the Romanian context. The survey for ex-prisoners was developed based on the survey for TB patients, but adapted in collaboration with TB health professionals from the Penitentiary system. For a more detailed discussion of the baseline process, See Section E1: Summary of Baseline Data.

The DIP was prepared collaboratively between DOW HQ staff, field staff, and partners, with technical assistance from an international TB consultant. The drafts of the DIP were prepared by field staff as well as HQ staff, and reviewed by PSI, USAID and partner staff. The DIP budget was prepared in collaboration with field staff and the Director of Finance and Administration at HQ.

Key DIP preparation activities include:

- Planning for and implementing baseline assessments
- A DIP workshop with stakeholders to review baseline findings, and prioritize intervention areas

- Select results and outcomes level objectives and indicators and set measurable targets for a concise set of objectives and indicators.
- DIP drafted by field staff, reviewed by field and HQ staff, with NTP staff assisting

Upcoming activities include:
- DIP submission and review
- DOW review of another PVO's DIP
- Preparation of presentation for the DIP's review by the USAID at the Mini-University
- Attend DIP Mini University, Finalize DIP and submit final version

Timeline: The negotiations with NTP were initiated in August 2003, prior to grant start-date and continued into the 1st quarter of the 1st grant year. The discussion concluded in December 2003 and a MOU was signed in January 2004. The planning for the baseline research was initiated in October 2003 when a Pfizer Health Fellow visited Romania and designed a research framework with the field staff. This framework was implemented starting in November 2003. KABP surveys were designed and finalize by January 2004 and implemented that month. Mercury concluded the survey implementation and data analysis by March 2004. The TB Consultant visited the project sites in January 2004. Secondary data analysis was concluded in March 2004 as well. The DIP was drafted and reviewed in March and April 2004.

The following individuals and stakeholders were instrumental in DIP preparation:

Individual/Partner	**DIP contribution**	**Amount of time**
HQ Staff		
Alka Dev, Program Manager	KABP survey development, Program Design, Final drafts of DIP sections, review and final submission. Attend Mini-University.	60% LOE for 5 months
Vandana Tripathi, Program Director	Continuing in-depth review of DIP drafts and strategic input into program design.	10% LOE for 5 months
Artem Vorobiev	Background research, Review and edit all drafts for clarity and readability.	30% for 5 months
Abigail Smith	Review and edit budget according to project workplan, Design finance session for Mini-University.	5% LOE
Field Staff		
Gazmend Zhuri, TB Project Director	KABP survey development, Partner meetings for planning and collecting secondary data, Draft of DIP sections	100% LOE for 5 months
Bogdan Pana, Project Coordinator	KABP survey development, Partner meetings for planning and collecting secondary data, Draft of DIP sections, Attend Mini-University	100% LOE for 4 months
Roxana Marin, Roma Health Education Coordinator	Input into health education regarding Roma population	100% LOE for 2 months
International Consultants		
Lisa Adams, TB Specialist	Field visit for baseline assessment of community based DOTS, Review and analysis of secondary and KABP survey data	10 days
Eleanor Levine, Pfizer Health Fellow	Design research action plan	1 week

Section D: Revisions (from the original application)

DOW has made revisions to the planned program from the version submitted in DOW's 2002 application to the Child Survival and Health Grants Program (CSHGP). These revisions were negotiated with the National TB Program (NTP) and Ministry of Health and Family (MHF) in Romania in cooperation with USAID staff from Washington, as well as from the Romania mission. Revisions were primarily in response to Romania's successful application to the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM). As DOW had developed its proposed TB intervention in response to the most urgent needs expressed by NTP and other in-country partners during a 2002 assessment, there a great deal of overlap between the activities proposed by DOW and those submitted by the NTP to GFATM. The most pressing capacity building and infrastructure needs for TB control in Romania were identified in both applications.

Since Romania received a far larger grant from GFATM, DOW worked with partners to identify the interventions proposed in DOW's CSHGP application that were still needed in addition to the planned GFATM activities. This process also required determining which interventions would be best implemented directly by the NTP and which would benefit by DOW taking the lead in development. These discussions and revisions occurred in summer and early fall of 2003, culminating in a Memorandum of Understanding (MOU) between DOW and the MHF of Romania, outlining the reaffirmed partnership between DOW and the NTP, as well as the key areas of TB Control that DOW will take the lead on, under the leadership of the NTP.

The goal of all partners in this process has been to develop a DIP where DOW's activities are complementary to those undertaken by the NTP, particularly in bolstering aspects of the DOTS Strategy that still remain weak in Romania, despite considerable progress in the last decade, and despite planned activities under the GFATM. This revision process has also helped identified interventions that are best suited to PVO implementation in the changed resource context created by the GFATM and other multilateral funding streams.

The revision process is discussed in more detail in the Baseline section of the DIP, and the final MOU is appended as Annex 4. However, key changes include the decision that DOW will not:

- Provide management training to NTP Managers and supervisory staff (Activities described under Objective 2 in the original Program Matrix)
- Strengthen the TB surveillance systems in Bucharest and Neamt (Activities described under Objective 3 in the original Program Matrix)
- Train TB specialists in DOTS (Activities described under Objective 4 in the original Program Matrix)

These activities are being supported by the GFATM and directly implemented by the NTP. DOW will participate in these training activities in project counties only as requested by the NTP.

Revisions also mean that DOW will shift focus to complement NTP activities by focusing on:

- Access to and utilization of TB services for vulnerable populations and those at highest risk for TB, such as ex-prisoners and the Roma in project counties.

- Strategies, including appropriate incentives and the training of community-based providers and Roma Health Mediators, to strengthen successful completion of treatment in the continuation phase.
- Development of a health education strategy for TB control, including messages for the general public and for specific vulnerable groups, such as the Roma, ex-prisoners, and TB patients and their families.

Due to the extent of changes and significant change in the focus of the grant, DOW is also submitting a revised budget, included as Annex 6 in this DIP.

SECTION E: DETAILED IMPLEMENTATION PLAN

Section E1: Summary of Baseline and Other Assessments

I. Baseline Assessment – Government Policy and Resource Context

DOW's baseline assessment began with developing an understanding of the government structures and policies that guide TB Control in Romania. DOW's key partner for this Project, the Romanian National Tuberculosis Program (NTP), is a part of the Ministry of Health and Family (MHF), under the jurisdiction of the MHF Director of Preventative Health. The MHF is responsible for developing national health policy and overseeing public health. The NTP Central Unit, located at the Marius Nasta Institute of Pneumophysiology in Bucharest, provides program leadership for TB Control. The NTP Manager, who is also the Director of the Institute, is assisted by the Head of the Data Collection Unit, the Chief of Bacteriological Laboratories, and four Supervisors. Ten university centers also support the NTP. There are a total of 50 NTP Managers, including 41 County Managers, six Bucharest Sector Managers and three Managers within the Penitentiary System of the Ministry of Justice (MOJ). These mid-level Managers are responsible for TB systems and staff in TB clinics and clinics and for managing interactions with the Central Unit, as well as with health providers making referrals into the TB control system, such as GPs (who are also responsible for DOTS in rural areas far from TB clinics).

The NTP coordinates with the primary health care entry points [General Practitioners (GPs) and nurses] to provide DOT to patients during continuation phase. However GPs are not appropriately trained in TB identification, referral, or treatment protocols, although they are mandated to implement the DOTS strategy. Although most agree to work with the NTP, they are not given a substantial insurance reimbursement to address TB treatment, and nurses are not empowered to support them in follow-up of patients who drop out of treatment. Nurses could play a role in tracking defaulters and in providing follow-up to patients entering community treatment from other settings (such as released prisoners). For vulnerable patient groups, they could provide DOT treatment; conduct patient education and address socio-economic (cost, distance, identification documentation) barriers to treatment completion with the aid of local PVOs.

The NTP aims to meet the WHO Recommended TB Control targets, adopted by the World Health Assembly (Resolutions WHA 44.8, 1991 and 46.36, 1993). These targets include curing 85 percent of newly detected cases of sputum smear positive TB, and detecting 70 percent of the estimated incidence of sputum smear-positive TB by expanding DOTS coverage to 100 percent of the country by 2008. In addition, DOTS-plus protocols for Multi Drug-Resistant (MDR) Tuberculosis will be incorporated into the DOTS strategy.

Under the national TB strategy, the NTP will:

1. Ensure the expansion of DOTS and prevention programs to curtail to the increasing incidence of TB. At the present time, access to DOTS is provided for 80 percent of hospitalized patients and 25 percent of patients in the continuation phase. The major activities designed to meet this objective include: well-trained human resources

(knowledge, attitudes, and practices of health staff updated to meet current WHO standards, guidelines and recommendations); the establishment of an incentives program for TB patients; and the improvement in TB control for children and high-risk groups, such as prisoners, members of the Roma community, and HIV-infected persons. NTP will re-train TB specialists, GPs, and registered nurses in DOTS. The last training of TB specialists was in 1997; for nurses, in 2001; and for GPs - within the last two years.

2. Strengthen the national healthcare system for TB patients by promoting a patient-centered approach to improve both access to and use of health services. Such services need to be enhanced to sustain and expand DOTS without compromising the quality of case detection and treatment. The objective contains three broad categories of activities relating to the strengthening of the bacteriological laboratory network, the establishment of three special centers for diagnosis and treatment of MDR-TB, the rehabilitation or refurbishment of three inpatient clinics, and a proper and adequate drug management system.

3. Strengthen the TB supervision/monitoring and surveillance system for TB within the National Communicable Diseases Surveillance Network. Such a system will ensure the assessment of all patients and that of overall program performance. The activities involve the development of a functional supervision and monitoring system with systematic county-level and countrywide visits from the Central Unit. Other activities will strengthen and integrate TB data collection/processing within the National Communicable Diseases Surveillance Network. The objective will be implemented under the authority of the County Coordinating Mechanism and that of the National TB Program Central Unit, and will involve a network of partners consisting of government institutions, professional organizations, locally registered NGOs, private practitioners, and the Romanian Orthodox Church.

DOW's program in Romania is part of joint efforts by TB Control partners to achieve the goals of this national TB strategy. Section D discusses the primary revisions to the planned DOW program from the original proposal submitted to USAID. These revisions arose largely from an increased national capacity to directly implement the national TB strategy, created by the award to Romania of resources from the UN-administered Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM). In 2003, Romania received $16.8 million for 5 years to fight tuberculosis from the GFATM. Following this award, DOW program revisions were planned in collaboration with the NTP and other TB partners in Romania during the baseline assessment period. DOW, NTP, and USAID representatives jointly discussed the existing strengths and weaknesses of the DOTS strategy implementation in Romania, as well as the areas of capacity development that NTP would undertake through GFATM resources. Within this context, the NTP requested DOW's involvement in Objective 1 above.

DOW will be supporting the NTP in administering Objective 1 via a pilot program in three project sites (Neamt, Ilfov, and Bucharest Sector 5). The programs will be targeted towards three specific vulnerable patient populations and selected providers. Patient populations include: prisoners with TB released during their continuation phase; poor Romanians with TB and their

families; and Roma community members with TB in the three project sites. A mass media campaign will also focus on the general population.

Targeted providers include General Practitioners, General Nurses, Community Nurses, Roma Health Mediators, and Nurse Case Managers. Major planned interventions include provider training on patient education and communication skills, DOTS patient follow-up and monitoring; and TB IEC and BCC campaigns, initiation of a Nurse Case Manager system in the three project sites, and incentives aimed at patients and their families to encourage treatment adherence.

Baseline research was conducted to guide the planning of specific interventions and indicators within these areas, in keeping with the Memorandum of Understanding signed by DOW and the MHF.

II. Baseline Assessment Primary and Secondary Data Collection

Since the award of this grant in 2003, Doctors of the World in Romania (DOW) has focused on collecting secondary baseline information from sources within Romania as well as conducting surveys to collect primary data related to TB Knowledge, Attitudes, Behaviors and Practice (KABP).

Secondary Data Review

Secondary data sources have included the MHF, and within it: the Census Bureau, the Central Statistical Unit, the Institute of Public Health, the National TB Control Program (NTP), the Roma Counselor to the Minister of Health, the County Public Health Departments, as well as TB dispensaries, hospitals, and general clinics in the target sites. The NTP Central Data Unit and TB County Managers provided national and county level cohort data for TB. Data on the prison systems and the National TB Control Program in Prisons (NTPP) were collected from the Independent Medical Service of the Penitentiary System within the Ministry of Justice; data on school systems were collected from the Ministry of Education. Romani CRISS, a leading Roma NGO, shared further information on the Roma population. DOW is grateful to all these partners and collaborators for providing key data for project design.

The secondary data collection yielded several sets of TB data from various sources, including the Central Statistical Unit of the NTP, former NTP presentations and reports, County Public Health authorities, County TB Managers, and the WHO Global Report. Inconsistencies in data reporting were found including:

a) Discrepancies between county level and central data in absolute numbers of TB cases as well as treatment outcomes and incidence. County level data reported by county health personnel showed higher levels of treatment success than the Central Statistical Unit's county data. In some cases, as in Ilfov, the discrepancy was as high as 75 percent cured (county) vs. 47 percent cured (NTP).
b) Unclear definition of indicators. It was unclear if the county level data were reporting on the same population denominator as the NTP level data. For example, at times it was difficult to determine if the data being reported were for smear positive cases or included culture positive cases as well, and whether data was for new cases only or retreatment cases as well. In some cases, data included retreatment cases, while in others only

relapse cases (a smaller subgroup) were included. This made inter-county comparisons difficult.

Some of these inconsistencies may have been magnified by challenges faced by country database managers, including lack of time for retroactive database creation and updates, as well as lack of feedback on performance.

NTP plans to address surveillance system infrastructure (computers and software) and training (data entry, analysis, and management) gaps under Objective 3 of the national TB strategy, funded by GFATM funds (see section I above). Since DOW will rely on NTP cohort data to measure performance, efforts will be made to use the central level data, when possible. Once training in surveillance has been implemented al all levels (including county), it is hoped that data will show greater consistency. While the inconsistencies in the data sets prevented certain kinds of aggregated data analysis, they still indicated key gaps and needs for strengthening TB treatment and follow-up.

KABP Surveys

To complete the baseline KABP surveys, DOW contracted a social marketing research group, Mercury Research Group: to assist with the design of the KABP survey, conduct, and finalize the surveys. Qualitative research, including some focus group discussions (FGDs) and in-depth interviews (IDIs), was also conducted to determine local attitudes toward TB. Population Services International (PSI), DOW's mentor for this project, recommended the research group. DOW also worked with Mercury to create an operational framework for the survey results and to prepare the final report. The surveys' respondents were selected at random from the target groups in the project sites, including:

- Poor Romanian population[1] (n=154) and Poor Roma population (n=153);
  - ► Random household selection. In each household the interview was conducted with the person who was 20 years old or older, had not suffered from TB, and the household income was below the poverty level. If more persons with these characteristics were in the household, the interviewer selected the person who celebrated his birthday most recently. If the eligible respondent was not at home when first contacted, interviewers revisited the household twice and then substituted with another respondent selected according to the sampling method. <u>Seven Roma Health Mediators were included in the sample of Roma population.</u>
- Prisoners suffering from TB (n=51);
  - ► Interviews were conducted in three places: Jilava penitentiary in Bucharest, Iasi penitentiary, and Tg-Ocna penitentiary hospital. Respondents were selected by the doctors in penitentiaries and were being treated for TB (intensive and continuation phases). This population was selected in order to assess the knowledge gaps for released prisoners.
- Discharged TB patients/their family members (n=151/150);

[1] The poor population definition is in concordance with the "Poverty Assessment Report" published by the Human Development Sector Unit of World Bank, in September 2003, based on a study conducted in Romania. Monthly income per adult is lower than 1,738,265 ROL (US$53).

- ► Respondents were randomly selected from lists of discharged TB patients received from TB clinics in Bucharest and Neamt. Respondents were TB patients who were discharged from the hospital in 2003.

- General Practitioners[2] (n=100) and Nurses (n=107)
  - ► Respondents who have patients with TB were randomly selected by Mercury.Research database. Twenty six community nurses were included in the sample of nurses.

III. Baseline Assessment –Findings from Primary and Secondary Data

A. Country Context: General

Romania is a lower middle-income country with Gross National Income per capita of US$ 1,850. It is the second largest country in Central and Eastern Europe, with a population of ~ 23 million. The country is in the process of comprehensively reforming and restructuring its economy with a view to joining the EU in 2007. As part of this effort, the Government is seeking to build institutions and design and implement public policies to fundamentally transform Romania's economy and society.

Although economic growth has turned around in the past two years, important challenges remain. Further structural reforms are crucial to build a competitive market economy, which is capable of withstanding the pressures of EU integration. In 2002, poverty was at 29 percent nationwide, and while the economic growth in recent years has contributed to the noted reduction of poverty overall, rural areas have not benefited from this as much as urban areas.[3] The 2002 census data show that 46 percent of Romanians live in rural areas and ~ 90 percent of the country's Roma minority are poor.

The percentage of individuals living in absolute poverty in Romania is among the highest in the European Region.[4] The working population decreased over percent between 1989 and 1995; the number of wage earners fell by over 27 percent during the same period.[5] Unemployment, largely resulting from lay offs or retirement from large state-owned textile, metal, and machinery companies, has risen steadily in the past decade. Unemployment correlates strongly to poverty overall: forty five percent of unemployed adults between the ages of 15-64 being classified as poor. Poor people are also less likely to have health insurance or to know someone who can help them with health problems: the poverty assessment found that eleven percent of poor people do not have access to health services, compared to 5 percent of the general population. Marginalized groups such as the Roma are still quite poor, with high unemployment rates and 3 out of 5 Roma living in extreme poverty.

Health status in Romania has also declined steadily. The infant and maternal mortality rates are among the highest in the European region and healthy life expectancy is 61 and 65 years respectively for men and women (ranking 37th in the European region)[6]. Communicable diseases

---

[2] Also referred to as family doctors in some documents. They are the same group.
[3] Assessment of the National Surveillance System for Infectious Diseases, WHO/PHARE: 2002.
[4] Making a difference. The world health report 1999. Geneva, World Health Organization, 1999.
[5] European Observatory on Health Care Systems, p. 3.
[6] The World Health Report 2003, WHO.

that were being effectively managed have re-emerged in the past decade, including a sharp increase in TB incidence.

TB-specific data on vulnerable populations in Romania will be provided in the subsequent sections.

Table 1 below highlights some of the important socio-economic and health status indicators for both Romania in general and the three project sites. Salient points include the illiteracy rate among the Roma, which is ten times higher than the general population, at ~26 percent. The health implications of such a high illiteracy rate affect both current knowledge levels and any health education interventions to be planned. Also notable is the dearth of community nurses in the project areas, with only ten in Ilfov and none in Sector 5 or Neamt. Community nurses can play a vital role in both health education and DOTS case management; strengthening and supporting their role must, therefore, be a key component in any community-based health intervention.

Table 1: General Health and Population Indicators for Romania and DOW Project Sites[7]

Characteristic	Romania	Bucharest/Sector 5	Ilfov	Neamt
Population	22.81 million	272,305	300,123	583,686
GDP per capita	US $1,710	**	**	**
Unemployment Rate (%)	12.6	5.7 (Bucharest)	4.6	16.6
Roma population	535,140*	~7,000	11,002	6,036
Roma population (%)	2.5	~2.57	3.67	1.09
Illiteracy (%)	2.1 (Romanians) 25.6 (Roma)	**	**	**
Infant mortality rate	17.33/1000	**	**	**
Life expectancy	71 years	**	**	**
# Community Nurses	325	0	10	0
# Roma Health Mediators	166	10	2	2

* EU estimates approximately 2.2 million or ~10%. Many Roma are hesitant to identify themselves due to fear of discrimination.
** *Not Available*

B. Target Areas Context:

Tuberculosis

Romania has the highest TB incidence in the region, and ranks 28th worldwide[8]. In 2000, the incidence rate was the third highest in Europe. In 2001, a total of 30,041 TB cases were registered (2,571 more than in 2000) and 31,000 total TB cases in 2002, with 138.7/100,000 incidence rate and 19.8/100,000 relapse rate. The TB notification rate is at the highest level in over 27 years.

According to the World Health Organization's (WHO) DOTS Expansion Plan, Romania is one of the top five European priority countries because of the alarming overall trend of TB, the burden of TB mortality, and the type and quantity of new activities needed to adequately expand the DOTS strategy. TB Incidence among vulnerable populations such as Roma and Prisoners is

[7] 2002 Census Data, Central Statistical Unit, Bucharest.
[8] Global Tuberculosis Control, WHO Report 2003

very high, and a recent rise in TB among children has resulted in the highest incidence rate of pediatric TB in all of Europe, from 3.8/100,000 in 1985 to 41.7/100,000 in 2003.

Table 2: TB Indicators for Romania and DOW Project Sites

TB Indicators[9] (2002)	Romania	Sector 5	Ilfov	Neamt
Adult Incidence per 100,000	138.7	145.1	194.6	140.1
All TB cases	33,554	363	633	823
New Cases	25,920	254	538	630
Retreatment	7,355	109	95	193
Roma Incidence per 100,000	**	538.7 to 1,023.7	**	**
TB among Prisoners[10]				
All TB Cases	1,488 (2,966.7/100,000)			
New Cases	628 (1,252/100,000)			
Relapses	860 (1,714/100,000)			
TB Among children	1,817	60.8*	124.3	58.5

* All Bucharest. ** Not Available.

Table 3: Romania TB morbidity data (absolute figures) for January- September 2003[11]

	TOTAL	NEW CASES	RELAPSES
Romania	23,294	19,995	3,299
Bucharest	1,954	1,681	273
Neamt county	562	450	112
Ilfov county	466	387	79

Treatment

In general, TB treatment in Romania follows the WHO recommended short course regimen of a two-month, four-drug intensive initial phase followed by a four-month, two-drug continuation phase. An evaluation for TB can be initiated either through the primary health entry point, by the general practitioner, or by self-referral to a TB clinic. TB patients who are sputum-smear positive begin therapy in a TB hospital and continue their treatment as outpatients under the supervision of the TB clinic or the GP/FD who originally referred them. Outpatient treatment is offered by more than 700 pulmonologists in 200 TB clinics.

According to the WHO 2004 Global Report on TB,[12] DOTS coverage (defined as the percentage of people living in areas where health services have adopted the DOTS strategy) in Romania is currently measured at 54 percent, with 41 percent of smear positive cases being treated under DOTS nationally at a 78 percent treatment success rate.

Another indicator of DOTS coverage is the proportion of diagnostic centers with adequate population coverage. The WHO recommended range is one diagnostic center per 50,000 to 150,000 population. The two TB dispensaries in Ilfov (Buftea and Saftica) serve a population of 110,000. The three TB dispensaries in Neamt (Tirgul Neamt, Roman and Piatra Neamt) county serve a population of 554,512 people. In Sector 5 in Bucharest, there are approximately 300,000

[9] NTP Data from the Central Data Unit.
[10] Ministry of Justice, Penitentiary Medical Service Report 2002.
[11] Ministry of Health, Central Statistical Unit, Bucharest, Information bulletin Nr.9 2003
[12] Global Tuberculosis Control Report, WHO, 2004. Reports on 2002 data.

inhabitants and one TB dispensary with five TB cabinets. The DOTS coverage in the project sites is adequate.

This comprehensive system is part of national commitment to successful DOTS implementation, and DOW will work with this structure and leadership to implement all Project activities.

TB in Prisons

The DOW counterpart for the prison target population is the Ministry of Justice's (MOJ) National Tuberculosis Program in Prisons (NTPP).[13] In 2002, incidence of new TB cases in prisons was 10 times higher than that in the general population and cases of relapse were 84 times higher. Altogether the prison incidence is 20 times that of the general population (See Table 3, page 3).[14] In 2003, the MOJ developed a comprehensive strategy for TB control activities in prisons under the five-year National TB Control Program strategy. The Medical Independent Service (MIS) coordinates the NTPP within the General Prison Department, and most services provided by the medical units within each prison.

The MIS ensures:

- Establishment and implementation of specific guidelines and technical standards in accordance with the National Program for the Penitentiary System;
- Estimation of necessary inventory of medication to maintain a continuous supply;
- Organization and supervision of the TB data registration and reporting system;
- Training of medical and non-medical prison personnel;
- Implementation of prisoners' health education strategy;
- Ongoing monitoring and evaluation;
- Coordination and direction of any international or non-governmental organizations.

Prisoners released during their TB treatment continuation phase have been identified as one of DOW's target populations for this project. Under current MOJ protocol, prisoners receive a maximum of two doses of treatment, and are referred to the local clinic or to a general practitioner upon release. Both the referral site and the patient receive a copy of the patient's treatment card, a medical letter, a transfer form, and a treatment evaluation record. Ex-prisoners and their families are informed about the consequences of discontinuing treatment. In the case of a contagious patient, arrangements are made to transfer the patient to a TB hospital, or in special cases, to a TB clinic under strict supervision. The Medical Independent Service does not follow-up on the patient after release, and anecdotal information points to high default rates.

The medical units of each prison have the following tasks:

- Patient referral to county-level TB outpatient clinics;
- Tracking prison TB case transfers (both releases from penitentiary hospitals and transfers from other prisons);
- Monthly, quarterly, and annual reports to the MIS;
- Professional training of non-medical prison staff.

[13] National TB Program in Prison, Hard copy from Medical Department of Penitentiary system Bucharest 2003
[14] Data gathered from the Medical Independent Service, General Direction of Penitentiary, MOJ

While incarcerated, prisoners with TB have access to health information from the medical staff of the pneumology section in the penitentiary hospital. Patients are advised about the importance of finishing their prescribed treatment and possible side effects to expect, but due to lack of follow-up after release, compliance is suspected to be low.

For this project, DOW will focus on post-release education and outreach for TB-positive prisoners. DOW will initially partner with two prisons in Romania: the prison in Bucharest (serving both Bucharest and Ilfov), and the prison in Iasi (serving northeastern Romania, including Neamt country.

Roma

Given the high incidence of TB among Roma and the severe lack of access to and low utilization of health services, the TB status of Roma populations is still a concern. However, due to the high treatment success rates in the two TB clinics in Ilfov county (96% in 2003), DOW Project activities can now be expanded to include active case detection and greater outreach to poor and Roma communities to ensure better access to Ilfov's network of DOT providers. Health Education activities and support for DOTS will be carried out in both GP offices and the TB clinics. General campaigns to improve case detection will also be implemented.

The Roma community presents a serious challenge for TB control due to widespread poverty, social exclusion, poor access to healthcare, and low education level. Some contributing factors identified by the MHF include: 1) lack of identity documents and/or lack of enrollment in health insurance, 2) prejudiced attitudes toward Roma among health care personnel, 3) cross-cultural communication challenges, 4) insufficient Roma financial and human resources, and 5) poverty-related living conditions that are often isolated, overcrowded and unhygienic. Higher literacy rates among younger, female and urban Roma suggest a greater potential for more comprehensive health education for these populations.

Population in Focus: The Roma
With Romania set to join the European Union in 2007, the situation of the Roma minority has come under close scrutiny by the international community. Romania has the largest Roma population in Europe, and their poverty and exclusion from Romanian society have profound impacts on their health and well-being. The unemployment level among the Roma remains at 24%, and 16% of Roma families depend on state support for survival. The substandard living conditions of the Roma in Romania frequently result in vitamin deficiencies, malnutrition, anemia, dystrophy and rickets. Infant mortality is up to four times higher in the Roma population. Poor living conditions faced by Roma frequently include lack of safe water, food and sanitary equipment, evictions from their places of residence, and lack of access to education and professional training. UNDP data also indicate that more than 40% of children in Roma households in Romania experience severe malnutrition. The existing health system, including insurance coverage, creates difficulties for Roma in seeking care for these health problems. In addition, many doctors in Romania require cash payments, even from insured patients, that the majority of Roma patients cannot afford to make. Moreover, when the Roma do seek medical assistance, they are frequently denied access and/or services based on racial prejudice and the discriminatory application of ambiguous administrative regulations. Despite this disparity and discrimination, Roma desire greater integration and inclusion. Roma communities recorded an 80% turnout during the last national elections and secured as many as 220 seats at the municipal level of government in 2000. Roma representation in local government is seen as an important precondition to equality. Increasing such representation is one way to advance greater equality for the Roma. Promoting the connection of Roma to health systems and improving their health

status is another way to support progress and integration for one of Europe's oldest and most disenfranchised minorities.

TB Education in Schools

At present, there is no formal TB health education component in school curricula for teachers to teach children. Most teachers choose to include health education in their syllabus but there is no mechanism to do so systematically, nor is there a way to set priorities. In Bucharest there are 454 elementary and high schools with 280,769 students and 17,862 teachers. In Sector 5, there are 14 schools where health education is an optional topic. Ilfov County has 42 schools, 34 elementary and 8 high schools. Seventy-eight teachers choose to teach health education. Neamt County has a total of 131 schools, with 83 elementary and 28 high schools. There are 164 teachers in Neamt who teach health education. The Ministry of Education (MOE) currently implements the strategy for Health Education in the Romanian School System. DOW activities will be integrated into this strategy, under which a health education curriculum for teachers is being developed.

C. Project Sites:

Ilfov

Ilfov has the highest TB incidence rate of any county in Romania, jumping from 190.3/100,000 in 1999 to 228.9/100,000 in 2002. Approximately 15 percent of these are relapse cases. Cohort analysis of county data shows that the treatment completion rates in Ilfov are quite good: in 2003, 75 percent of new cases were cured, and an additional 20 percent completed treatment. Of the 31 relapse cases, 26 were cured (84%) and 5 (16%) completed treatment. Data show that for the pneumology offices in Balotesti and Buftea, treatment outcome rates have remained stable since 1999. There are 114 GPs in Ilfov county who see TB patients. Data from the other villages were not readily available as those patients are seen by providers in Bucharest, and not Ilfov. However, data from the NTP Central Statistical Unit show that treatment success rate in 2003 was only at 52 percent vs. the 95 percent reported by the county Public Health Authority.

Table 4a: Summary of Cohort Data from Ilfov County since 1999* (New + Retreatment Cases)

Year	Number of cases	Number cured (%)	No. Completing treatment (%)	Abandoned Treatment (%)
1999	228	189 (83)	23 (11)	5 (2)
2000	342	240 (70)	95 (28)	1 (.29)
2001	371	249 (67)	111(30)	--
2002	325	244 (75)	66 (20)	6 (2)
2003	296	226 (76)	58 (20)	3 (1)

*Data from Dr. Minerva Ghinescu, Deputy Director of the Department of Public Health for Ilfov.

Table 4b: Summary of Cohort Data from Ilfov County 2002-2003* (New + Retreatment Cases)

Year	Number of cases	Number cured (%)	No. Completing treatment (%)	Abandoned Treatment (%)
2002	488	231 (47)	26 (5)	20 (4)
2003	238	**	**	**

*Data from NTP Central Data Unit. **Data not yet available.

Bucharest and Sector 5
In 2003, Sector 5 had the highest TB incidence rate in Bucharest (150.5/100,000), which included 410 new cases and 73 relapses. Sector 5 also has the highest population of the Roma nationwide and is one of the poorest sectors in Bucharest city. There are a total of 75 GPs who see TB patients.

Table 5a: Summary of Cohort Data from Bucharest since 1999 (New + Retreatment Cases[+])[*]

Year	Number of cases	Number cured (%)	No. Completing treatment (%)	Abandoned Treatment[++] (%)
2002	1242	913 (74)	132 (11)	22 (2)

[+]New smear positive cases. [*]Remaining data unavailable at present.
[++] Includes those who interrupted treatment and were lost during follow-up. Does not include those who moved or died.

Table 5b: Summary of Cohort Data from Sector 5 for 2001 (New + Retreatment Cases)[*]

Year	Number of cases	Number cured (%)	No. Completing treatment (%)	Abandoned Treatment[++] (%)
1999	427	*	*	*
2000	411	*	*	*
2001	399	224 (56)	29 (7)	42 (10)

[*]Remaining data unavailable at present.
[++] Includes those who interrupted treatment and were lost during follow-up. Does not include those who moved or died.

Neamt
In Neamt County in the northeastern Moldavia region, TB incidence was 101.2/100,000 in 2003.[15] Neamt has the second highest incidence of TB relapse of all counties in Romania, at 25.6/100,000. This suggests high rates of HIV infection, frequent TB re-infection, incomplete TB treatment, and possible incorrect discharges of cases as "cured" or "treatment-complete." Reportedly high poverty levels (12.5% unemployment in 2001), low health insurance coverage among Roma (54% urban, 40% rural), and discrimination by health providers against the estimated 6,000 Roma in this county compound the problems of this predominately rural county.

Table 6: Summary of Cohort Data from Neamt County since 1999 (New + Relapsed Cases[+])[*]

Year	Number of cases	Number cured (%)	No. Completing treatment (%)	Abandoned Treatment[++] (%)
2001	465	150 (32)	116 (25)	43 (9)
2002	447	192 (43)	51 (11)	9 (2)

[+]Smear positive cases.
[++] Includes those who interrupted treatment and were lost during follow-up. Does not include those who moved or died.

D. KAPB Survey Results

Table 7 below presents descriptions of the patient and provider groups targeted in this project and who were therefore targeted for baseline KABP surveys. The only except is ex-prisoners who could not be contact due to legal restrictions. Therefore, KABP surveys were conducted

[15] Data from the TB County Manager.

with incarcerated prisoners in order to determine the general trends and attitudes among prisoners toward TB and its treatment.

Table 7: Categories of Stakeholder

Target Group	Description	Number targeted
General Practitioners	General Practitioners are private doctors and are the first contact point for primary health care. GPs are independent and are contracted by the health insurance funds. GP services are financed per capita through premiums collected by the health insurance system from employees and employers.	Over 300 will be trained in the 4 project sites
Family Medicine Nurses	Family Medicine Nurses are contracted by GPs and paid according to the terms of the contract (depending on level of training, working hours etc). They work in the clinic and carry out tasks such as delivery and pick-up of medication, recording keeping and administrative work.	Over 300 will be trained in the 4 project sites
Nurse Case Managers	Nurse Case managers are nurses who work mainly outside clinic settings. Their goals are to lower continuation-phase default rates through patient referrals to clinics, counseling patients on managing treatment barriers, incentives distribution, and patient follow-up.	6 will be appointed in DOW project sites
Community Health Nurses	Community Nurses are a recently appointed group of nurses by the local Public Health authority through a National Center for Health Promotion program. They are responsible mostly for delivering reproductive health and family care information at the community level.	10 in DOW's project sites 325 nationwide.
Roma Health Mediators[16]	Roma Health Mediators are Roma women with secondary education who are employed by the Ministry of Health to provide basic health information in Roma communities. Their goals are to serve as case managers for Roma TB patients, as well as carry out community based health education regarding TB and its treatment.	There are 14 in DOW project sites. Advocate for 8 more.
Peer Health Educators	Peer Health Educators are members of the Roma community who will be identified and trained to provide community based health education to Roma in their communities.	Overall, 25 will be identified.
Roma	The Roma (Gypsies) remain to date the most deprived ethnic group of Europe. Discrimination against Roma in employment, education, health care, administrative and other services is common in Romania.	24,000 from census, estimated ~250,000
Poor Romanians	Poor Romanians are non-minority people living below the poverty level (estimated at monthly income per adult < US$53.	~30% of population (>330,000)
Ex-prisoners	Newly released prisoners who have TB and are in the continuation phase of treatment.	Not yet available
TB patients and family members	TB patients in the continuation phase of treatment and their family members who are living with them. Intensive phase patients will be targeted for in-patient health education.	~1800 in DOW project sites.
General Population	General Romanian population reached through popular media.	Estimated 1,126,930

[16] In August 2002 MHF approved the start of Roma Health Mediators activity. The Mediators serve as bridges between the Roma community and health care services. This project will advocate increasing the number of Roma Health Mediators to the MHF.

Specific Findings: Patients and Providers

Roma (n=151)

Key characteristics:

- 56 percent were male, 44 percent female
- About half were 20-40 years old, and half 41-65 years old
- Less than 20 percent could read

Socio-Economic Status

According to the 2002 census, only 25 percent of the Roma in Romania are literate.

There were high rates of illiteracy among the Roma surveyed, especially rural populations. Roughly 80 percent of the Roma interviewed reported that they never finished grade eight, and while overall literacy was low (<20%), great differences were found between categories: women were twice as likely as men to be literate, younger Roma (ages 7-16) three times as likely as older Roma, and urban Roma were six times more likely than rural Roma to be literate.

Over half of the Roma interviewed are not registered with a GP and fewer than half would seek medical attention when ill. Younger and urban Roma were significantly more likely to seek GP care. Over 90 percent of Roma lived close to a GP and could get there quickly. On average, well over half did not get health information from a GP, and in Neamt, all of the respondents reported getting no information from a GP.

TB Experience

Survey respondents older than 50 were four times as likely to experience recurrent (more than three) episodes of TB. Males had more recent and more recurrent episodes than females. Of those who had TB, 6 percent of patients ages 35-50 did not stay in a hospital the last time they were sick (this was twice as likely among urban Roma). This reflects a barrier to treatment among people of prime working age and indicates barriers other than distance to treatment site, such as work commitments, fear of discrimination, or costs. Twice as many females as males did not stay in a hospital last time they were sick.

TB Knowledge

Overall TB knowledge among Roma was the lowest of all groups surveyed. Just over half of all Roma surveyed had ever heard of TB, with males and urban residents likely to know more than females and rural counterparts. Overall knowledge of symptoms and treatment was very low, with only 15-30 percent naming major symptoms and less than half knowing that TB is treatable. Among rural Roma, only 20 percent on average could name major symptoms. Among the Roma interviewed, 31 percent did not know one symptom of TB. Only 27 percent in rural areas and 55 percent in urban knew that TB was contagious, with an average of under 50 percent knowing that it is airborne. Only 8 percent rural Roma knew of airborne transmission.

Peers (family and friends) were the greatest source of TB info, with medical staff and TV half as common. Women were twice as likely as men to get health information from doctors than from peers.

TB Behaviors, Practices
One-third of respondents would seek medical attention or more information about TB, but fewer than 6 percent would go to a hospital. Young males were more likely to avoid hospitalization if it took longer than 2 months. Lack of finances and lack of understanding of the necessity for clinical treatment were major reasons not to seek care.

TB Attitudes
Misinformation and stigma were found to be major factors shaping Roma attitudes about TB. Fear of losing a job was an overwhelming reason not to disclose TB status, with social isolation a close second. More than 50 percent of respondents said they would avoid visiting acquaintance with TB. Less than half would notify families of disease status, and felt that pity, avoidance, and rejection were more common responses to TB than help. "Help from family" was listed as a response by roughly 20 percent of Roma overall and by 40 percent Roma in rural areas, suggesting a closer community network in the latter.

Poor Ethnic Romanians (n=155)
Key characteristics:

- 59 percent were male, 41 percent female
- About half were 20-40 years old, and half 41-65 years old.
- Almost 85 percent could read.

Socio-Economic Status
Compared to the low literacy levels in the Roma population, poor ethnic Romanians fared better: 84 percent interviewed were literate and 48 percent attended high school or higher; however, rural populations were less educated than urban. Roughly 60 percent had fulltime or temporary work.

TB Knowledge
In general women and people from rural areas knew less about TB, with Ilfov residents scoring dramatically lower. Of those interviewed, 88 percent had heard of TB, more of them in urban areas. About 56 percent knew that TB was a lung disease, men more cognizant than women. The remainder believed TB to be anything from a cold or a flu to a disease caused by smoking, alcohol, or poverty. Over half of poor Romanians (both urban and rural) identified a persistent cough for more than three weeks as a symptom of TB. About 20-30 percent knew other symptoms as well (including night sweats, fatigue, fever for over a week, and weight loss). Overall, 75 percent knew that TB was contagious, but Ilfov scored low -- only 44 percent knew that. While most poor Romanians (>80%) knew that TB was transmitted through the air, in Ilfov only 16 percent knew this. Myths of transmission were also common, such as using the same objects (86%), sharing food (38%), and touching (15%).

Of all poor Romanians interviewed, 20-25 percent did *not* know that treatment was available, compared to 75 percent who did not know this in Ilfov. More had heard of TB from friends and neighbors than from doctors, nurses, and TV, even though nurses, doctors, and pharmacies were the most common sources of health information about other topics.

TB Behaviors, Practices
More than 90 percent of those interviewed have easy access to GPs (defined as being registered with a GP and living less than an hour away from a GP) – but roughly one-third (30%) rely on public transport to get there. Close to 90 percent reported that they would go to either a doctor or a hospital if they found out they had TB, with a large preference for doctors over hospitals (80% vs. 10%). Most (>75%) people also claimed that they would stay in a hospital for two full months "if [they] had to." Over 90 percent would see a doctor for persistent cough or fever, but fewer would for weight loss. Of those who do not go to the doctor, most would seek over-the-counter medication at a pharmacy, usually based on the pharmacist's recommendation. Approximately 75-85 percent sought medical care for TB symptoms, with the following distribution:

- Females were twice as likely to seek treatment as males;
- Urban poor sought care more than rural poor;
- Feeling better, lack of time and money were noted as top reasons not to seek care

TB Attitudes
TB stigmatization among poor Romanians was very strong. Isolation from family was a common self-enforced protection measure and females were twice as likely to hide TB symptoms. Avoidance of TB patients is very common, and much more likely among females than males. Just under half (49%) of poor urban Romanians and 30% of rural poor said they would avoid visiting people who have TB. The fear of losing friends was high (90%) among females and the fear of losing their job was high (100%) among males. Only 25-40 percent believed that TB patients would not try to conceal illness.

Prisoners with TB (n=51)
Surveyed: Bucharest, Iasi and Tg Ocna* (*Referred to as "elsewhere")*

- Almost half were in prison for more than 3 years.
- About 70 percent could read.

Socio-Economic Status
Almost half of the prisoners with TB surveyed were unemployed prior to incarceration, with only 10 percent serving sentences of less than one year. About 70 percent of the prisoners interviewed could read, although literacy among prisoners was slightly higher in rural areas (77%) than in urban (68%).

TB Knowledge
TB knowledge varied widely, with misinformation rampant and the Bucharest sample scoring significantly lower on many questions than the rest of the sample, indicating the need for special attention in terms of IEC efforts. After hospitalization, most prisoners reported receiving TB information orally from doctors (93%) and from written materials (73%), but almost 15 percent of non-Bucharest prisoners received no TB information after hospitalization. Among those who did receive TB information, 6-35 percent still had major knowledge gaps about basic TB facts. In almost all cases a doctor provided information (98%), but 86 percent in Bucharest also reported a nurse educating them.

Slightly over 90 percent of prisoners surveyed knew that TB was contagious. Close to 70 percent of all prisoners knew that persistent cough, night sweats, fatigue and weakness were symptoms of TB and half believed that weight loss was another symptom. One-fifth of the Bucharest sample could not name any TB symptoms.

Transmission was the topic with the greatest misinformation. Overall, more than 90 percent correctly identified airborne routes as a mode of transmission, but large numbers also named use of the same objects (71%), sharing food (~50%), transmission by blood (29%), and skin contact (23%). 10 percent of the Bucharest sample could not name any means of transmission.

Misinformation was also prevalent concerning contraction. Over half of respondents believed they got TB from a cold/flu. One-third thought it was due to tiredness or working too hard. A quarter overall (24%) believed they contracted TB due to contact (being in the same room) with another patient, while 22 percent believed heavy smoking caused their TB.

TB Behaviors, Practices

Over half of the prisoners waited two weeks to one month before seeing a doctor for their symptoms, with almost 23 percent waiting more than three months. In over half of all cases (53%) it was fatigue that caused the patient to seek medical advice before being diagnosed with TB. For 50 percent, it was the fever, the weight loss or coughing. One quarter were diagnosed upon their arrest.

Roughly 80 percent of all respondents tried to find out more about TB after being diagnosed. Eighty-eight percent informed family members of their status in order to protect them, and over 90 percent overall employed some method to protect their fellow inmates (seeking treatment, not sharing dishes, etc.).

TB Attitudes

Like the other populations interviewed, stigma was common among prisoners, but was more "fear" than "shame." 60 percent of the respondents claimed to "fear" TB, perceiving roughly the same level of fear among their fellow prisoners. Over 20 percent reported TB to be "shameful," perceiving about 35 percent of other prisoners to consider it so (these levels were lower in Bucharest – 18%). When asked why TB was something to be ashamed of, 31 percent mentioned ensuing isolation, differential treatment and avoidance by others. About 65 percent of respondents were afraid of passing TB to their inmates.

Three-fourths of respondents believed having TB made their life harder. Main concerns reported were the treatment (18%), isolation (16%), and not being able to work (14%). Side effects (10%) and poor detention conditions (8%) were also mentioned.

TB Treatment

It is worthy of note that over 70 percent of prisoners surveyed never had TB before their incarceration. All of the respondents were hospitalized for TB and were supervised while taking the medication. Almost one third (27%) stayed in the hospital more than three months. Of those in continuation phase, 91 percent report being supervised by a doctor while taking their medications, and another third report a nurse being present.

In terms of TB education, 12 percent say they did not get any TB information while hospitalized. Of the 88 percent that did receive information, 60 percent said they understood what they were told. All respondents believed TB could be lethal if left untreated, but 26 percent were not sure why periodic examinations were important, and one-fifth did not understand why treatment was so lengthy. A full 40 percent of prison cases could not recall how long they were to continue treatment after they were discharged from the prison hospital.

TB Patients

Key characteristics:

- About 75 percent were male, and the remaining were female
- About 40 percent were 18-40 years old, and the rest were 41-65 years old.
- Almost 90 percent could read.

Socio-Economic status

TB patients listed an economic burden from TB and its treatment leading to shorter hospital stays due to potential loss of a job, with women at the twice the risk as men. Women were five times more likely to receive social aid than men, but men were six times as likely to be salaried. While urban residents are more likely to have a salary and be on medical leave, rural residents are far more likely to receive some kind of social assistance. Almost 25 percent of all TB patients who were surveyed did not have an income at all.

Females and Neamt and rural residents tended to have higher knowledge across the board with one exception: young, urban, female respondents were almost three times as likely to believe TB was sero-transferable, possibly due to confusion with HIV/AIDS. This could have significant impacts on behavior and should shape IEC design for these populations.

TB Knowledge

Less than half of TB patients interviewed believed they had contracted TB from another TB-infected person. Neamt residents displayed greater knowledge, fear and care-seeking behaviors than all others across the board. Roughly 40 percent of all surveyed (except Neamt residents) waited a month or longer to seek treatment. Lung hospitals and policlinics are major sources of treatment: over 90 percent of respondents sought care at these facilities.

Over 90 percent of the patients received information about TB while they were in the hospital and most of them received information orally. TV was stated as the preferred method for disseminating TB information, with brochures and posters as a second choice. Over 80 percent of all patients watch TV daily, in comparison to 25 percent who listen to the radio and 10 percent who read newspapers. GPs were named as a source of general health information.

TB Behaviors, Practices

Cough, fatigue, fever, and weight loss were the most significant symptoms that caused people to seek care. Among respondents, only those in the 35-50 age group declined hospitalization, with females twice as likely as males to decline. A quarter stayed at the hospital for the entire intensive phase of treatment. Rural patients were five times as likely to leave because they “had to get home.” Almost 95 percent reported continuing treatment after discharge.

Women, urban residents, and people of working age were more likely to take medications at home, with a majority (63-95%) taking medications at home at least some of the time. A notable disparity is between Bucharest and Neamt: 96 percent of Bucharest but only 3 percent of Neamt patients surveyed were taking medication at home. Fewer than 25 percent of all patients (except for Neamt- 45%) took medication under supervision (at a TB clinic).

Non-compliance with a full regimen (stopping treatment early) varied greatly: rural residents were three times as likely to stop and men were *seven times* as likely to interrupt treatment. Feeling better was the greatest reason for non-compliance, with 20-60 percent claiming side effects. Cost and availability affected only under 5 percent of patients. Men, Neamt residents and those over 50 were more likely to believe treatment could be stopped if they "felt better."

About 6 percent of patients ages 35-50 did not stay in the hospital the last time they were sick. Twice as many females did not stay in a hospital last time they were sick as males. More than twice as many urban residents (who are also more likely to be employed) did not stay in a hospital the last time they were sick.

TB Attitudes
Rural males (young and old) were less likely to tell family of their TB status, with the exception of Neamt, where only half of the respondents feared spreading TB to family members. However, almost all (approximately 90 percent) had all family members screened for TB. Isolation from family was a significant protection strategy among patients for family members - indicative of stigma and the social cost of TB. Neamt residents and those under 35 had significantly higher feelings of "shame" about TB.

TB Patients' Family Members (n=150)
Key characteristics:

- About one-third were male, and two-thirds were female
- About one-third were 18-40 years old, and the rest were 41-65 years old.
- Almost 90 percent could read.

Socio-Economic Status:
There were large gaps between urban and rural residents in terms of amenities: urban and Bucharest residents were far more likely to have running water and toilets in their houses (70-90% vs. 40-65%). Only 50-60 percent of family members were employed in any capacity.

TB Experience
Half of the family members surveyed were told by TB patients of their illness, with patients twice as likely to tell younger family members than those over fifty. Those notified were told immediately after diagnosis.

While most patients get TB information from GPs, only 4 percent [1-10%] were diagnosed by their GPs. Most diagnoses come from the "lung hospital" or policlinic. Spouses and mothers were the first to detect an illness, overwhelmingly more often than the patients themselves, indicating a potentially valuable IEC audience.

TB Knowledge
While most respondents got their general health information from GPs, very few got their TB information from them: most family members surveyed learned what they know from the TB patients in their families, than any other source. Knowledge of the treatability and symptoms of TB were high, but causes and transmission knowledge were low: colds and flu were overwhelmingly thought to cause TB, as compared to contact with a TB-positive person; persistent coughs, night sweats, fatigue, and fever were the most commonly recognized TB symptoms; the vast majority (90%) knew TB is contagious, but only 40 percent worried about TB spreading to the family.

TB Attitudes
Misconceptions and stigma affect patients at home: roughly 25 percent of families isolate TB patients and 7-15 percent of family members conceal family TB status from friends and neighbors. Association with poverty and isolation were the greatest stigma factors. Family members in Neamt, rural areas and of people of working age were two to three times as likely to note "length of treatment" as a burden. Family members of rural residents, women and people of working age were more likely to note lack of family finances as a burden. Urban residents were *eight* times more likely to be worried about the contagiousness of TB than rural residents, indicating particular attention needed in rural areas for IEC interventions.

General Practitioners (n=100)
Key characteristics:

- About 70 percent worked in urban areas while 30 percent worked in rural areas.

Socio-Economic Status
General Practitioners are paid through the national Health Insurance Fund as independent contractors on a contractual basis. The Health Insurance Fund comprises contributions from employees, employers, and the state, and pays for those without employment. GPs are paid according to a capitation scheme and a motivational fee for specific health promotion and preventive services. Most GPs still accept and even expect informal payments, which can deter poor patients from seeing a provider. A delay in presenting at a health facility can increase disease progression to advanced stages before detection.

TB Experience
General Practitioners are often the first point of contact that a client has with the health system, and a referral from one is needed to see a specialist; however, in the case of TB, patients are free to go directly to the TB clinic. As of 2003, home care providers are also allowed to sign contracts with health insurance funds but they are not required by the MHF to monitor DOTS. Over half of all respondents nationwide said they sent new patients with TB to a Lung Hospital, their number being the highest in Bucharest (80%) and lowest in Neamt (15%). Just over half (51%) considered more attention and monitoring to be necessary for treating TB patients, including TB education for the patients. Only 22 percent of GPs surveyed said they monitored via weekly checkups, while 40 percent monitored monthly.

Almost all (95%) respondents said they performed a clinical examination when examining a TB patient. Only 15 percent said they conducted a sputum examination when diagnosing a TB patient.

TB knowledge
While much of the information GPs pass on to their TB patients is accurate, over half also recommend keeping their personal articles separate from the rest of the family's things, 10 percent did not know what MDR-TB was, and 3 percent did not believe TB to be treatable. Over one half (52%) of respondents said TB treatment lasted over three months while 44 percent said it was supposed to last "until the sputum examination yielded negative results".

TB Attitudes and Practices
85 percent of respondents reported advising their patients to take the treatment in order to avoid spreading the disease. 64 percent advise eating well, this number being as high as 90 percent in rural areas and as low as 41 percent in Bucharest. While much of the information GPs pass on to their TB patients is accurate, over half (64%) also recommend keeping their personal articles separate from the rest of the family's things. Over three quarters of doctors said their patients' family members were tested upon learning of patient's TB status. Over one-half recommend that their patients isolate themselves.

Roughly half of respondents said they had patients who did not comply with the treatment regimen. 91 percent of all doctors said they explained to their patients what tuberculosis was in order to improve treatment compliance. Over a third gave their patients information materials, contrasting with patients' noting that information was provided orally

Among the reasons why the patients do not follow the treatment regimen, 64 percent of doctors stated patients' lack of understanding of the importance of treatment. Almost 60 percent said patients did not have money for proper food or were not interested. Almost 70 percent of all doctors report low treatment compliance as a problem to contend with in treating TB. Fifty two percent mention the lack of informational materials. Forty four percent of doctors believed that the significant majority (75-99%) of their patients completed their TB treatment. There was great variation in this number, which was lowest in Bucharest (26%) and highest in Ilfov (70%). When asked to list features of patients who do not complete their treatment, commonly reported traits were: poor (56%), abusing alcohol (46%), poorly educated (44%), and not informed (23%).

Over two-thirds of all doctors nationwide said that a training/educational program on TB would be useful to them. However, almost a quarter did not know what subjects such a program should deal with. Almost all (99%) said that patients' education was very important in order to control the spread of TB.

64 percent said the most appropriate way to disseminate TB info was health education in schools. 60 percent also recommended health programs on TV. Almost one-third mentioned health programs on the radio and 45 percent noted brochures, flyers in pharmacies, GP offices, on the street, and in the mail as the appropriate way to disseminate TB-related info.

Over 40 percent of respondents said the main problem was their patients' low educational level. Over one-fifth said it was lack of time and 19 percent said the main problem was the lack of informational materials for patients. Half of all respondents believed information about TB could convince the patient to complete the entire course of TB treatment. Half (50%) of respondents said patients did not complete treatment because they did not have enough money for proper food.

Quality Treatment Barriers
Over half of doctors surveyed mentioned lack of patient informational materials and 10 percent reported lack of medicines as quality problems. Almost all (99%) said that patients' education was very important in order to control the spread of TB, but 60 percent considered patients and family members to be "little informed" about TB transmission (a quarter said they were "not at all informed"). Over two-thirds (70%) of all doctors nationwide said that a training/educational program on TB would be useful to them.

Nurses (n=107)
Key characteristics:

- About 70 percent worked in urban areas while 30 percent worked in rural areas.
- Over half (31 of 51) nurses interviewed in Bucharest and 4 of 22 in Ilfov and were community nurses. The rest were family medicine nurses (working in GP offices).

TB Knowledge
In general, nurses are knowledgeable about TB symptoms, but prejudice regarding TB patients and misinformation about the disease is unfortunately common. The majority of nurses thought that TB was a disease of people who are poor, have poor nutrition or smoke. In rural areas, nurses were more likely to say that TB patients were poor (84% vs. 66%) and less likely to say that they were dangerous for others at the clinic (29% vs. 66%). Among characteristics of patients who do not complete treatment stated by nurses were poverty, alcohol consumption, and lack of information. Although over 95 percent of nurses knew that TB was airborne, over 50 percent also claimed that TB could be contracted by using the possessions of a TB patient or at birth. Most nurses did not know what multi-drug resistant TB (MDR-TB) is but thought it could be treated. In Bucharest, more than half of nurses interviewed thought that TB could also be transmitted through blood. Nurses in urban areas were more likely to know that TB is a disease that anyone can get, compared to nurses in rural areas.

TB Attitudes and Practices
According to nurses, the most common questions patients and family members ask regard TB treatment and transmission. Almost 60 percent of the nurses would advise patients to isolate themselves and 30 percent would advise them not to share food with anyone.

As nurses perform a significant portion of patient treatment and education and are essential to quality care, this link in the health care system must be given special attention. For instance, almost one-half of rural nurses and 1/3 of urban nurses found it preferable if the patients took their medication at home. Fortunately, many nurses surveyed (80%) did see it as within their duties to perform patient IEC and ensure TB patient follow-up.

The main advice nurses give patients with TB is to complete their treatment (91%); a smaller proportion advise on the importance of regular follow-ups (35%). Other topics of discussion include protecting other family members, information about TB and treatment, and that treatment is free. Almost half of the nurses monitored patients in monthly checks, and approximately 20 percent in weekly checks. Urban nurses were more likely to perform monthly checks (50%) than rural nurses (23%) who were more likely to perform weekly checks (48%). During the survey, most nurses estimated that only one-third of their patients' completed treatment. Of the nurses who have defaulting patients, probable reasons for default were guessed as lack of understanding of health consequences, lack of interest, and lack of money or food.

Quality Treatment Barriers
The most common problems nurses experienced in working with TB patients were lack of IEC materials (69%), too little time for each patient (41%), and patients' lack of adherence to treatment (39%). Nurses saw IEC campaigns as important for preventing the spread of TB, and almost 60 percent thought that there should be an incentives program or other motivation for patients to complete treatment. Approximately 80 percent of the nurses saw it as their responsibility to conduct IEC activities and ensure that patients come for follow-up.

Summary of KABP Data:

Knowledge about TB: Urban and younger (<50 years of age) people were more literate than rural or older people. Roma and rural women tended to know the least about TB, as compared to urban residents, who knew about TB symptoms and transmission. The most common misinformation about TB was about transmission, with a majority believing that it was caused by a cold or a flu. GPs also felt that their patients were least informed about transmission. Women knew less about TB, but received general health information from their friends and families, as well as GPs. However, both GPs and nurses reported that they lack materials about TB to share with patients. Mothers and spouses were also the first to know if a family member was sick. Cough and fatigue were the most common TB symptoms for which people would seek care. Television and oral advice by the doctor were seen as the most common channels for health information. Information retrieved from a pharmacy was also important, in case a health provider was not easily accessible. All GPs felt that health education training was necessary and would improve treatment compliance.

Stigma: Stigma was extremely important to each target group, with fear of isolation and pity from friends and family as the most significant related perceptions. Many GPs and nurses also advise TB patients to isolate themselves and their belongings from family members, potentially leading to stigma. Fear of TB in general was also a concern cited by all groups. Both GPs and nurses also reported that upon diagnosis, most patients feel afraid to tell their family, may deny the finding, and feel depressed or ashamed.

Care-seeking behaviors: Younger people were more likely to seek care in the event of an illness but also more likely to avoid staying in a hospital. However, older men were more likely to have recurrent episodes of TB. Women were almost twice as likely as men to refuse hospitalization and to leave the hospital earlier. Key reasons included loss of income or work and a lack of understanding why this was necessary. GPs and nurses also felt that patients

interrupted treatment due to a lack of understanding but that compliance would improve once they were educated about the disease. Urban residents were also more likely to avoid hospitalization. Rural residents and men were more likely to stop treatment if they "felt better".

IV. Baseline Assessment – Conclusions from Data Analysis

A. Constraints

DOTS/TB patients
In the intensive inpatient phase, 85 percent of patients in the pilot counties reportedly received directly observed therapy (DOT).[17] However, full implementation of DOTS is compromised by lack of follow-up upon treatment interruption, and lack of support for patients during the continuation phase. The number of patients receiving DOT in the continuation phase ranges from 30-80 percent. In some areas, health providers ascribe treatment failures to poor compliance in some risk groups such as the poor, children, Roma, and newly released prisoners.

The biggest current obstacle to successful diagnosis and treatment completion for these groups is lack of knowledge about TB. The baseline KABP surveys found the levels of TB-related knowledge amongst the general population to be profoundly low. Large numbers of people surveyed (especially poor Romanians and Roma) were unaware that TB was curable and treatment was free, and could not identify symptoms or paths of transmission. In addition, these same high-risk groups often report a lack of access to GPs. Thus, they are more likely to go undiagnosed, to transmit TB, and to wait until they are in the terminal stages of the illness before seeking treatment.

Although most of the GPs agree to work with the NTP, they often receive inadequate insurance reimbursements for TB treatment. Ideally, nurses could play a role in TB education and DOT compliance via such tasks as providing DOT, educating patients, tracking defaulters, working with local NGOs to address socio-economic barriers to treatment, and providing follow-up to patients entering community treatment from other settings (such as prisons), but currently lack administrative support and capacity to do this.

Thirty nine percent of poor children aged 15-24 years are not in school, indicating a need for varied community outreach to poor areas that go beyond school-based programs.

Finally, as in other countries of Eastern Europe, stigma associated with TB is widespread in Romania. The baseline KABP surveys found that people considered TB to be an isolating disease, one that a TB patient and his/her family should be ashamed of. Common reactions among TB patients and family members included non-disclosure of disease status and avoiding people known to be infected. Such stigma can have enormous impact on detection and treatment efforts.

[17] NTP Data, WHO 2003 Global Report.

Section E2: Program Description By Objective, Intervention And Activities

DOW's Project goals are determined in close collaboration with the National Tuberculosis Control Program (NTP) staff with contributions from USAID and the Romanian Ministry of Health and Family (MHF). Collaborative discussions led to the drafting and signing of a Memorandum of Understanding between DOW and the MHF, clearly stating the purpose and activities of this Project. The goals reflect a joint effort to ensure that DOW activities support NTP's larger framework for TB control in Romania, including those activities currently funded by the Global Fund for AIDS, TB, and Malaria. These goals are:

1. To improve treatment success rates among TB patients from vulnerable groups.
2. To build the capacity of the Romanian NTP to provide effective health education and community outreach services.

These goals will be achieved through several strategies that will mobilize the appropriate resources for community-based advancement of DOTS and patient adherence to the recommended protocols. The following strategies are crucial to the implementation of program objectives:

a) **Health Education:** Initiate health education strategies in collaboration with the Department of Public Health (DPH), to develop, implement, monitor and evaluate national campaigns for TB awareness for the general population. Implement targeted IEC and BCC activities for vulnerable populations to increase TB knowledge, improve DOT adherence and reduce stigma.
b) **Public Health Systems:** Mobilize primary health care providers, including general practitioners, family medicine nurses and nurse case managers, to educate TB patients in the continuation phase and their other patients about TB treatment. Link an incentives pilot to promote adherence.
c) **Community Health Networks:** Mobilize community based health workers, including Roma Health Mediators and community health nurses, to provide case management services to TB patients and vulnerable populations at the community level, with a particular focus on defaulters.

Table 1 presents a summary of the approach and desired behavior change for each group of providers and patients. **Table 2** presents a summary of the intended roles of institutional partners. **Figure 1** is an organizational chart which identifies all partners and reporting relationships.

Mentorship Framework

This grant has been awarded under the mentorship category of the Child Survival and Health Grants Program. The project is being implemented under the mentorship of PSI. The two organizations will share expertise in order to ensure effective implementation of IEC and BCC activities during the course of the DOW project and to build PSI's capacity for integration of TB activities into their existing focus. At the headquarters level, PSI has advised DOW on DIP development: including reading and providing feed-back on DIP drafts, mentoring in preparing

for the DIP Mini-University, and technical assistance on the BCC/IEC components of the DIP activities. During the course of the project, PSI will also advise on and review annual workplans, reports, mid-term review and final evaluations. In return, DOW will provide technical assistance to PSI staff on developing TB programs or the integration of TB into their existing HIV programs. Assistance will include review of potential proposals that include TB components, and sharing DOW's TB materials and suggesting expert TB consultants for PSI project sites.

At the field level, PSI Romania has provided DOW with advice and assistance on establishing a field office in Romania, including financial laws, registration and local context for PVO presence. Additional technical support has included assistance with the planning for and implementation of baseline KABP surveys, including referrals for consultants and market research organization. Technical assistance throughout the course of the project will focus on developing IEC and BCC strategies and creating dialogue to integrate these strategies into existing MHF frameworks. The PSI Romania office has also been helpful to DOW in accessing local opportunities such as an application to the Romanian Principle Recipient for funding for an incentives pilot through the Global Fund to fight AIDS, TB, and Malaria (GFATM).

Major Objectives and Activities

The following objectives and activities are planned for the implementation of the DOW-supported DOTS expansion activities in Romania. Objectives are organized by strategy, focusing first on a comprehensive national public health education strategy for TB. Following this, the activities build provider capacity to deliver appropriate health messages, including through IEC materials and BCC, for both health system providers and community health network providers, followed by targeted IEC and BCC activities for vulnerable populations. An incentives program will be piloted and assistance provided to NTP for the transfer of monitoring and evaluation capacity for TB health education.

(Editing Note: While Section E1 presents common baseline findings across groups, in this section, baseline findings specifically relevant to particular activities are also noted).

Objective 1: Develop a national TB and DOTS health education strategy with the MHF.

Objective 1 fulfills IR3 of the Child Survival and Health Grants Program: Child and maternal health and nutrition and infectious disease program strategies, tools and approaches developed/adapted, tested and applied. Under this objective, DOW will develop a TB focused health education model, including a national strategy, health education materials and monitoring tools, which will be tested and implemented in the project sites for the first time. The national strategy will serve as a framework for replication and scale-up of health education activities throughout Romania in a national campaign.

See Objective 1 in the Planning Matrix in Annex 2 for a summary description of the activities and outcomes under this objective.

Objective 1 will be fulfilled by the following major activities:

Activity 1.1: Develop NTP and DPH's capacity to collaboratively disseminate TB information for the general Romanian population to increase knowledge of TB including recognition of symptoms, modes of transmission, importance of seeking treatment, and reduction of stigma.

Current Situation

The DPH operates under the direction of the MHF and administers all public health campaigns that are launched in Romania. The DPH's dissemination network includes the Local Public Health authorities from each county as well as mass media channels. The campaigns are implemented in partnership with non-governmental organizations and supported by different financial sources, inlcuding the MHF budget, Global Fund, World Bank, JSI, USAID, UNFPA, UNICEF, and DOW.

The DPH has recently developed a strategy document by which priorities in the field of health promotion will be identified. The strategy will be approved during a national conference in May 2004 and will establish criteria for the establishment of priorities and the development of related national communication campaigns for behavior change. TB has been identified as one of these priorities due to the high TB-associated morbidity rates, the economic and social impact of the disease, and the possibility of achieving immediate results from a mass media campaign, such as improved case detection rates and treatment adherence. Community health nurses, Roma Health Mediators, GPs, nurses, TB Dispensary staff, teachers, and community leaders will form an important part of the dissemination network for TB health education.

At present no health education and promotion programs exist to address TB for the general public. The DPH and NTP do not collaborate on any health education activities, and there is no quality assurance, such as for accurate and consistent messages, of TB education materials if they are produced by local public health authorities. Under this objective, the health promotion expertise of the DPH will be combined with the TB expertise of the NTP and DOW, as well as the community oriented program and policy development expertise of DOW to foster greater integration of program activities.

Intervention

The DOW Project Coordinator will work closely with DPH staff to develop a TB health education working group which will have members from DOW and DPH staff. The NTP, the MOJ and the local Roma NGO Romani CRISS will be requested to designate a staff member who can participate in the working group. DOW's mentor, PSI will provide technical assistance to the working group. See Table 2: Intended Role of Institutional Partners.

Representatives from provider target groups such as TB specialists, GPs, family medicine and community health nurses, Roma Health Mediators and targeted beneficiaries will also be invited to attend meetings where their input would be most relevant. One Nurse Case Manager from the Bucharest/Ilfov area will also be asked to attend meetings.

The intention is to create an effective working group that can create a national health education strategy based on information solicited from intended audience as well as those expected to

deliver the education messages. The group will be formed in the 4th quarter of Year 1 and will meet monthly throughout the course of the project. In addition to developing a national IEC strategy, the working group members will be actively involved in monitoring activities, designing and developing materials, and evaluating outcomes of IEC activities.

The TB health education messages will include general information about recognition of symptoms, visits to a General Practiotioner or TB Specialist for symptoms, general information about what to expect with TB treatment, and reduction of stigma. The intended audience for this campaign will be the general population. Messages will be delivered through print media, TV and radio advertisement spots, and community based health education sessions. DOW will assist the DPH to produce standardized and accurate TB messages, particularly for high risk and vulnerable population groups.

Furthermore, both the NTP and DPH's capacity will be built to collaboratively develop and carry out general TB health education campaigns. The NTP and DPH will be stronger in the following capacities: community-oriented assessment of TB health education needs, involvement of relevant providers, development of IEC materials, patient education, utilizing dissemination networks, and assessment of communication outcomes. Building partners' capacity to scale up health education models nationally will ensure sustainability and expansion of the project's impact.

The NTP will eventually be responsible for managing a National TB Health Promotion strategy that will encompass both TB IEC for the general public as well as targeted IEC/BCC approaches for specific vulnerable populations, as well as TB patients (discussed in Objectives 2&3). Such a strategy will include the following components:

- Project Priorities (e.g., DOT, stigma and dispelling myths, prevention, treatment adherence, World TB Day, other general public campaigns and vulnerable groups campaigns)
- Training (e.g., public health outreach workers, teachers, community health nurses, nurse case managers, Roma Health Mediators and Peer Health Educators)
- Community Outreach (e.g., mobilization of networks, school education, community groups, employers, and use of media)
- Patient & Family Education (e.g., inpatient education using specific materials, group sessions and individual counseling, and outpatient education with the patient & family using specific materials and individual counseling, group sessions at dispensary.)
- Materials Development and Dissemination (e.g., standards for health education materials, piloting and evaluating materials, approval of materials before dissemination and dissemination cascade).

Activity 1.2: Launch a mass media campaign around World TB Day targeting vulnerable groups as well as general population.

Current Situation

At present, the NTP is minimally engaged in planning for, implementing and promoting World TB Day events and activities. The activities carried out thus far consist of a press conference and the release of TB related data and/or information. This is open to local TB partners, such as

USAID, DOW and other international and national organizations. However, there is very little accomplished to reach the general population.

Intervention

DOW intends to use the occasion of World TB Day during Year 2 to assist the NTP to launch the first ever comprehensive national campaign for TB education. With significant contribution from and collaboration with the TB health education working group (discussed in Activity 1.1), DOW and NTP will launch World TB Day media campaign, which includes the following activities:

- Printing posters, flyers, and developing spots for TV and radio
- Posting posters, distributing education materials, and broadcasting media messages
- Conducting TB awareness sessions in schools, communities, TB hospitals and GP clinics

Activity 1.3: Train primary and secondary school teachers in Bucharest/Sector 5, Ilfov and Neamt to teach school children about TB and dispel prevailing stigmatic myths.

Current situation

At present, there is no formal TB health education component in school curricula for teachers to teach children. Most teachers choose to include health education in their syllabus but there is no mechanism to do so systematically, nor is there a way to set priorities. In Bucharest there are 454 elementary and high schools with 280,769 students and 17,862 teachers. In Sector 5, there are 14 schools where health education is an optional topic. Ilfov County has 42 schools, 34 elementary and 8 high schools. Seventy-eight teachers choose to teach health education. Neamt County has a total of 131 schools, with 83 elementary and 28 high schools. There are 164 teachers in Neamt who teach health education. The Ministry of Education (MOE) currently implements the strategy for Health Education in the Romanian School System. DOW activities will be integrated into this strategy, under which a health education curriculum for teachers is being developed.

Intervention

An age-appropriate section on TB will be added to curricula to be developed for primary and secondary school teachers. Primary priorities under this activity are to develop and implement a training curriculum for teachers, education of primary and secondary students through active learning approaches, and evaluation of what students and teachers have learned. PSI, as mentor, will provide technical assistance in developing materials that are appropriate for this target group. Within the national strategy, DOW will:

- Provide advice and consultation in drafting the section of the curricula regarding TB prevention prevention.
- Conduct, through its consultants and experts, the training of teachers of Bucharest/Sector 5, Ilfov County and Neamt County on basic knowledge of TB.
- Contribute to the production of teaching materials (handbooks, guides for teachers and students, brochures, flyers, audio and video tapes, CDs) for the subcomponent of the TB national strategy.

- Build capacity in Bucharest/Sector 5, Ilfov and Neamt Counties for teachers to deliver health education messages to students and nurses to deliver health education messages to patients,

Objective 2: Strengthen and develop the knowledge and skills of health providers to communicate regarding and support patients in completing TB treatment.

Objective 2 fulfills IR3 of the Child Survival and Health Grants Program: Child and maternal health and nutrition and infectious disease program strategies, tools and approaches developed/adapted, tested and applied. In most contexts, the providers DOW is targeting are better acquainted than specialists with individual patients' needs and resources due to sustained contact. An outcome of this objective will be providers who are better able to provide TB outpatients, their families and vulnerable communities with the most relevant and culturally appropriate information regarding TB and its treatment. This will be enabled through targeted training as well as health education materials developed during the project. DOW will work closely with NTP and the DPH to design the content of the materials as well as the training plan, in order to ensure relevance to and integration into the NTP strategy. It will be important to ensure that the materials are useful for other trainings concurrently being implemented by NTP. Through the course of the project, DOW will also participate with NTP in county level discussions regarding case management and the roles of different levels of providers.

See Objective 2 in the Planning Matrix in Annex 2 for a summary description of the activities and outcomes under this objective.

Objective 2 will be fulfilled by the following major activities:

Activity 2.1: Enable primary care providers involved in TB service delivery to assure that TB patients are adequately educated and complete treatment.

Current Situation

Primary care providers include GPs and family medicine nurses who are the first point of access for health care for most people in Romania. In the baseline assessments, DOW learned that many GPs and nurses are actively involved in treating TB patients in the continuation phase and feel a need for more IEC training and patient-oriented health education materials. When GPs suspect that a patient has TB, they refer that patient to the closest TB dispensary or TB hospital. Once the patient has been treated during the intensive phase, he or she either continues to receive DOT at the TB facility or returns to their general practitioners for chemotherapy. Therefore, GPs and nurses, with their understanding of the needs of individual patients, should be involved in providing effective case management.

All of the 147 GPs in Ilfov have been trained in DOTS. They receive annual one-hour refresher information sessions implemented by the NTP, but these do not cover DOTS as a whole. Approximately 50 (34%) GPs are currently providing TB therapy (mostly continuation phase) in their practices.

While much of the information GPs pass on to their TB patients is accurate, some inconsistencies remain in terms of recommendations to isolate the patient and keeping their personal articles separate. There is a need for health education materials dedicated to TB the can be distributed by GPs. Almost all GPs feel that patient education is important, but majorities are not able to tell their patients much about the disease or DOT. Moreover, most GPs are not trained to counsel patients and therefore do not have appropriate communication skills. However, GPs express that a training program teaching them how to address patients would be helpful.

GPs and nurses also state that the patient's family also needs to be informed about transmission, symptoms of the disease, and TB Treatment. Since families are an important source of physical and emotional support for patients, it is relevant that providers discuss the role of family members in improving treatment adherence.

Interventions

Under this activity, DOW will hire a Training Coordinator, who will assist the Project Director and the Project Coordinator to develop a brief training course for doctors and nurses focused on educating patients about TB and related behavior change approaches. PSI, as mentor, will provide technical assistance in developing curricula for the course and participate in training and/or facilitation. The training team will conduct an in-depth review of the baseline KABP data from the doctors and nurses in order to identify key areas for training intervention such as gaps in knowledge, misperceptions about TB, lack of means to address patients' limitations, and poor communication skills. For example, in some cases, nurses listed coercion by the police as a means to increase DOT adherence, a belief that should be addressed and modified to emphasize the supportive role of DOT providers[1]. The course curriculum will be developed during the last quarter of Year 1 and in the early part of the 1st quarter of Year 2. The training will be implemented during the 2nd quarter of Year 2.

The training will focus on important theoretical and clinical aspects of the DOTS strategy as well as appropriate communication/counseling techniques for delivery of health education messages within patient clinical encounters. Specific areas for improved health education and counseling have been identified during the baseline data review and include: identifying transmission pathways, protecting family members, and adhering to treatment protocols.

GPs and nurses will also be trained to counsel suspected TB patients and to prepare them for the possibility that they are infected with TB. Training will enable these providers to better explain TB transmission and next steps for diagnosis and treatment, including referral to a TB facility. Patients during the continuation phase will receive short counseling sessions when they come to clinic for DOT and when nurses, nurse case managers, community health nurses or health mediators need special assistance with a difficult patient. Primary care providers will be trained to counsel patients on the importance of completing DOTS and expected health outcomes upon

[1] In a study of DOT approaches, Macq et al. found that different health providers view their roles differently regarding encouraging treatment adherence in patients, from authoritative to supportive. The spectrum of DOT providers in different contexts affects logistical and economic accessibility as well as social stigma. In Macq, J. (2003) "An exploration of the concept of directly observed treatment (DOT) for tuberculosis patients: from a uniform to a customized approach," *Int J Tuberc Lung Dis* 7(1):1-7.

recovery. Communication with patients will also focus on the consequences of treatment interruption (such as the development of drug resistant TB).

Nurses can play a role in tracking defaulters and in working with planned nurse case managers to provide follow-up to patients entering continuation phase treatment from other settings (such as prisons). Under the NTP strategy, for these and other vulnerable patient groups, family medicine nurses provide DOT, conduct patient education and report on and/or address socio-economic barriers to treatment completion (such as cost, distance, identification documentation). Therefore, they will be important in complementing the activities of the planned case managers, and will be trained to work with the planned case managers to address difficult cases. Training will address the ways in which different levels and types of providers can be involved in case management activities.

GPs and nurses working in Sector 5 and other areas with large Roma or poor populations will receive sensitivity training and be made more aware of the social issues that further prevent Roma and the rural and urban poor from accessing TB services. Providers who participate in working groups will learn of complementary health education exercises such as national campaign, radio or TV spots, and World TB Day activities (See Activity 1.1).

Nurses and GPs will be trained jointly at the county level to build a sense of collaborative DOTS implementation. Trainings will be organized by DOW, NTP and the DPH but DOW will assume the related costs. Attempts will be made to stress an equitable but coordinated distribution of responsibility for patient education between doctors and nurses by delineating different roles for different stages of TB related IEC.

Activity 2.2: Develop and implement a TB case management system (involving community health nurses and Roma Health Mediators) to assure that high-risk patients complete treatment.

The DOW training team, in collaboration with NTP, DPH, and local NGO partners will assemble a second training course for the community health nurses and Roma Health Mediators. This will be complementary to the development of a case management system and piloting of planned nurse case managers for ex-prisoners, described in Activity 3.3 below. DOW and partners will utilize existing materials as much as possible, particularly those created by the DPH for outreach workers and Romani CRISS specifically for RHMs. Any new training materials will be developed with feedback from the target training groups, and will be supplied to the DPH, NTP and CRISS for use in future activities. Special attention will be paid to the health status and access issues of marginalized populations, including poor uninsured Romanians, Roma and ex-prisoners in the community.

<u>Roma Health Mediators and Peer Health Educators</u>
Roma Health Mediators (RHMs) are Roma women with secondary education who are employed by the Ministry of Health to provide basic health information in Roma communities. Peer Health Educators (PHEs) are similar community-based educators that will be identified and trained where there are insufficient RHMs. Preliminary training activities with RHMs/PHEs will include holding community-wide meetings to discuss the project in more detail, as well as the tasks and skills that will be required of the Health Mediators. The DOW Roma Health

Coordinator who has been hired through the matching activities funded by OSI will coordinate the training activities. DOW will conduct three-day trainings for RHMs/PHEs in the DOTS Strategy and case management. Topics will include health education methodologies, TB prevention and treatment, the fundamentals of the DOTS strategy, as well as addressing barriers for Roma access to directly observed treatment. Training on advocacy, rights and mediation strategies will be tailored for practical application, thereby suitable to the needs and interests of the target audience.

While existing materials will be utilized whenever possible, new materials will be developed as appropriate for identified health priorities. In addition, DOW will provide the RHMs with health education and promotion materials that are suitable for the non-literate Roma audiences.

The training schedule will depend on the needs of the Roma Health Mediators, as well as the priorities identified in the project settlements, but the sessions will total approximately 70-80 hours. DOW will provide training in relevant skills such as in graphic design, coordination, and priority setting as requested by the Roma NGO partner Romani CRISS. Care will be taken to complement and strengthen – rather than create redundancies with – any training already provided by Romani CRISS.

Since there are only eight RHMs in the project site, DOW will also work with Romani CRISS to determine selection criteria for PHEs, based on the similar model from DOW projects in Kosovo. PHEs will be members from the Roma community who have a level of education similar to the RHMs/PHEs and are interested in working within their community. One advantage of PHEs will be that they can be male which will be useful in their ability to work with male TB patients. At present, all the RHMs supported by the MHF are women. Toward the completion of the project, DOW will advocate with the MHF to include the PHEs into an expanded RHM model or into the community health worker network.

A total of approximately 40 mediators and PHEs will be trained from the two counties, 25 in Bucharest County and 15 in Neamt County. DOW will encourage CRISS to invite other Health Mediators to participate from additional counties, in order to maximize the geographic impact of training.

Community Health Nurses

The community health nurses initiative is new and only 5-6 new counties are added each year. Community health nurses are trained by the group of 24 trainers with accreditation to train from MHF. There are no TB curricula and materials at present and support is needed to develop these as well as to train community health nurses in Bucharest/Sector 5, Ilfov and Neamt Counties. In order to improve patient follow-up, DOW plans to promote the community health nurses' roles by training them in case management, including providing follow-up to patients who default during the continuation phase. PSI, as mentor, will provide technical assistance in developing curricula for the course and participate in training or facilitation. Community health nurses will be trained in providing health education to TB patients regarding TB and DOTS and will receive health education materials to distribute among their patients. This will build the capacity and skill set of community health nurses as case managers to improve TB patients' treatment completion. Community health nurses will receive training in counseling skills, educating non-

literate people, addressing potential barriers to accessing services including gender issues, and communication skills specific to disseminating health education messages. The 10 existing community health nurses in Ilfov will be trained and DOW will advocate for the identification of at least 10 such nurses in Neamt and at least five in Bucharest Sector 5.

Gender
Due to a variety of family obligations, female patients often are unable to stay for the full two months of intensive phase treatment. Approximately 75 percent of the intensive phase treatment patients at the TB Hospital in Neamt are male and 25 percent are female. Fifty percent (50%) of female TB patients stay less than two months in the TB Hospital, while more men are likely to complete the entire intensive phase treatment. While it is feasible and reasonable for these patients to complete their intensive phase of therapy as outpatients, these patients must then be a high priority for receiving DOT. These outpatients may also need additional support given the importance of consistent treatment and the complexity of the regimen during the intensive phase of treatment. As part of the activities to strengthen community nursing, community health nurses in each project area will receive additional training on gender issues and gender-sensitive care, as well as training related to intensive phase treatment issues (e.g., regimens, potential side effects). When a female patient is discharged or leaves the hospital against medical advice prior to completing the intensive phase, she will be assigned as a high priority to community health nurse for follow up. The community health nurse will visit defaulting female TB Patients twice per week to provide intensive phase DOT. For continuation phase treatment, community health nurses will work with female patients to address barriers to treatment adherence and to help them get treatment at a health facility.

Objective 3: Strengthen and develop TB knowledge in vulnerable groups[2], along with systems and approaches, to support treatment completion.

Objective 3 fulfills IR1 of the Child Survival and Health Grants Program: Increased use, coverage, and quality of child and maternal health, and nutrition and infectious disease programs implemented by PVOs and their local partners. The activities that fulfill this objective will ensure that health education training and dissemination activities are supported by appropriate educational materials and focus on increasing adherence with continuation phase treatment. This will not only include patients who are currently completing DOT but also those who are defaulters on treatment. By beginning the delivery of IEC materials at clinics and during intensive phase treatment, activities will create a foundation for community-based activities in continuation phase. Furthermore, focused health education, community based activities and an incentives program will improve the health seeking behavior and treatment completion rates of people from extremely vulnerable populations such as Roma or poor Romanians.

See Objective 3 in the Planning Matrix in Annex 2 for a summary description of the activities and outcomes under this objective.

Objective 3 will be fulfilled by the following major activities:

[2] Vulnerable populations throughout the document includes ex-prisoners, Roma, poor Romanians, TB patients and their families.

Activity 3.1: Evaluate existing TB IEC practices and materials and develop new materials and related dissemination schemes.

Current Situation

At the TB clinic in Sector 5 and the TB hospital in Piatra Neamt, there is no formal patient and family TB education program and therefore education occurs in an ad hoc and informal manner. Currently, there are no TVs or VCRs for showing health education videos. Several of the physicians reported educating patients about TB, stressing messages about the duration of treatment, the importance of continuing therapy outside of the hospital even when the patient feels well, and that TB is curable. However, there is no designated room or formal health education sessions for patients. Similarly, in Ilfov, health education occurs on an ad hoc basis, largely dependent on the time and knowledge of the health providers.

The three health education brochures currently distributed to patients in Piatra Neamt are generally too technical for laypeople, contain outdated messages that emphasize the use of the PPD test instead of sputum smear, and do not provide practical information such as names and addresses of facilities for follow up.

Baseline KABP surveys show that both urban and rural TB patients prefer TV advertising and broadcasts followed by posters in public transportation or on the street as dissemination channels for TB information. Brochures and flyers in pharmacies and GP offices were more preferable to urban patients than rural. Roma in rural areas also preferred radio broadcasts.

Interventions

Working closely with the NTP and DPH, DOW (with technical assistance from PSI) will develop relevant health education materials based on the results of the KABP survey, input from government and NGO partners and input from target groups. The materials will include standardized messages about TB and DOTS as well as address the specific local and culturally relevant topics that have emerged during the baseline assessments. Under this activity, DOW will hire a Health Education Coordinator, who will assist the Project Director and the Project Coordinator in the development of IEC materials and dissemination schemes for vulnerable target groups.

The DOW training team will conduct an in-depth review of the baseline KABP data from patients and their families, prisoners, poor Romanians, and Roma to identify key areas for IEC intervention such as gaps in knowledge, misperceptions about TB, lack of means to comply with DOT, and social stigma. Since IEC materials will be developed for several populations, they will also be disseminated through channels identified by each target population during the interviews. As almost all respondents identified television broadcasts, DOW will work with the DPH and the NTP to develop broadcasts that can be aired nationally as part of the comprehensive TB health education strategy discussed in Objective 4. PSI will play an important role in guiding the DOW team to plan for diverse IEC activities. A regional TB IEC expert will also be hired as a consultant to provide ongoing technical assistance to the team throughout the course of the project.

DOW will work with the DPH to develop tailored materials for each target population, which will contain varying sets of information pertaining to TB and its treatment. IEC activities and materials will include the following aspects for different populations:

TB patients and family members:

- Designation of health education hours during intensive phase treatment when materials can be studied.
- TB information, prevention and treatment videos to be broadcast in the TB clinics and hospitals for patients who are undergoing intensive phase treatment.
- A brochure for intensive-phase TB patients and their families which explains the disease and treatment in some detail, focused more on what to expect during treatment than on general TB information. The rationale is that tailored materials will help family members support TB patients to adhere to treatment.
- A pamphlet on continuation phase treatment that is given by the provider who is monitoring the patient at that time. This pamphlet should complement the information given during intensive-phase treatment but with more focus on treatment adherence. Patients should be encouraged to be think about their accessibility obstacles as DOT supporters might be able to assist with concerns. [The incentives pilot (discussed in Objective 5) will be important for this population.]

Roma population:

- Roma health education activities will focus on community based health information sessions led by Roma Health Mediators and where possible, Peer Health Educators.
- Materials including posters and pamphlets will be designed for a non-literate audience, since Roma have high illiteracy rates. Emphasis will be on recognition of symptoms, prevention of transmission, and seeking and accessing treatment.
- Radio broadcasts in Romani will also be developed and aired on Roma radio stations. The costs for national broadcasts will be discussed with the Department of Public Health and the NTP as DOW will develop messages but not pay for national broadcast.

Ex-prisoners:

- Through the WHO IEC program in prisons, health education activities with ex-prisoners will have started when they were still incarcerated. Upon release, prisoners with TB will receive one-on-one counseling with a nurse case manager, a pilot program for planned case management discussed in more detail in Activity 3.3. The nurse case manager will explain the next steps involved for the ex-prisoner to access continuation phase services in their community. If the ex-prisoner intends to stay in one of DOW's project sites, plans will be made to assign him/her to a nurse case manager identified by DOW.
- Brochures and pamphlets will be handed to the prisoners upon release focusing on continuation phase treatment. After this, they will also receive follow-up materials from their DOT provider.

Poor Romanians:

- Brochures and pamphlets will be developed that address the barriers to access faced by poor people, in particular loss of income. Attempts will also be made to focus on

employer education if particular employers (such as factories) can be easily identified in the course of project activities.

The DOW, NTP, PSI, and DPH team will develop health education materials for these vulnerable populations during the first two quarters of Year 2. Dissemination of materials will begin during the 3rd quarter of Year 2, once the providers have been trained in relevant IEC activities, listed under Objective 2. Please refer to the project workplan in Section E4 for further clarification of the project timeline.

In all, print materials will be developed for four different audiences and will include a range of materials including brochures, posters, and pamphlets. Audio-visual materials will include videos to be broadcast in TB hospitals, radio broadcasts for Roma populations, and wider television broadcasts for the general population.

Activity 3.2: Develop strategies to implement Information Education Communication (IEC) and Behavior Change and Communication (BCC) activities and increase continuation phase DOTS adherence for Roma populations.

Current Situation

Training and health education activities that focus on the Roma will be more effective by taking into consideration the existing beliefs, attitudes and health seeking behavior of the Roma community. Roma have generally been discriminated against in Romanian society, including discrimination in schools against Roma children as well as denial of services to Roma patients presenting at a health care facilities[3]. Therefore, confidence about obtaining adequate health services is low. The poverty level of Roma groups as well as the consequent living conditions may contribute to the spread of infectious diseases such as TB, leading to an incidence in this population that is up to 9 times higher than that in the general Romanian population. In 2002, the TB incidence for Roma was as high as 1,023.7/100,000 in the high incidence area in Bucharest/Sector 5, compared to the general incidence of 145.1/100,000[4].

The baseline research has also helped DOW to determine TB health education priorities among Roma communities, through KABP surveys, that can be highlighted in the health education messages. Roma have a clear disadvantage in recognizing TB symptoms, seeking care for these symptoms, and acquiring important information about TB and its treatment. Roma are less likely to seek a GP's care when sick. Only 15-30% can name major TB symptoms and less than half know that TB is treatable. Only slightly more than half say they would seek care if they have a common TB symptom. Furthermore, older Roma are especially vulnerable to recurrent TB episodes combined with extremely low literacy rates and greater poverty. Health education for Roma is complicated by the fact that they are ten times more likely to be illiterate than the general population.

Interventions

Based on input from preliminary meetings with a number of key nongovernmental Roma stakeholders, activities have been designed to strengthen existing systems– specifically, the

[3] State of Impunity: Human Rights Abuse of Roma in Romania, ERRC: 2001.
[4] NTP data acquired during baseline research in 2003-2004.

Roma Health Mediators (RHMs) – and to facilitate the formation of new community health actors – DOW-trained Peer Health Educators (PHEs) – where gaps are identified. In Objective 2, it was described how DOW will strengthen the capacity of RHMs and PHEs to participate in case management. DOW also plans to strengthen their ability to deliver information in the community regarding TB and treatment. DOW will work closely with two partners in order to integrate TB and DOT promotion health education activities into existing training and community-based activities as well as to develop new training protocols and health education messages, as needed, for Roma populations. DOW will also assist RHMs and PHEs to plan and implement community information and education sessions to educate Roma communities about TB.

The first partner will be the Counselor for Roma Issues to the Health Minister, who has been housed at the DPH since August 2000. This position was created to promote dialogue between the Ministry of Health and the Roma community and to contribute to the improvement of the health status of Roma in Romania. At present, the Roma health activities carried out under this Counselor include management of the RHMs/PHEs. The Counselor advocates for the establishment of RHM positions within the local public health network, assists in their identification and selection, and works with local NGOs to carry out RHM's training on hygiene and reproductive health, including the development of training manuals. This is a key position for bringing urgent and long-term Roma health issues to the attention of MHF staff as well as for sharing the MHF policies regarding Roma populations with Roma community members.

The second partner will be a local Roma NGO, Romani CRISS, who is assisting the MHF with training RHMs. The Roma Health Mediator program was established due to Romani CRISS' advocacy and sustained commitment to the issue of Roma health for the past decade. At present, the NGO is active only in Bucharest/Sector 5 and Ilfov County but is an umbrella organization for most of the Roma NGOs in Romania. DOW plans to work closely with Romani CRISS to update the existing RHM manual to include TB and DOTS information, co-train health mediators active in DOW target areas and monitor RHMs in follow-up of Roma TB patients in the continuation phase (as described in Objective 2).

RHM and PHE training will enable community-based tuberculosis health education, promote access to related health services, and create a team of leaders and health promoters who will advance the rights of Roma to health care. RHM and PHE involvement in case management will help them identify obstacles to access for Roma in the continuation phase. Furthermore, in collaboration with Roma stakeholders and community leaders, DOW will work to develop advocacy strategies to apply this knowledge and address the role of health system authorities and gatekeepers in promoting Roma health.

Training RHMs/PHEs will strengthen treatment continuation at the community level. RHMs/PHEs will promote DOT in Roma communities and deliver IEC messages regarding TB, which will improve case identification rates as well as treatment success rates, especially increasing the percentage of people cured.

Training protocols for RHMs/PHEs will include TB related information as well as communication guides for how RHMs/PHEs can present TB information in their communities.

In all, the 14 existing RHMs/PHEs will be trained in DOW project sites and DOW will advocate for the identification of at least 8 more RHMs/PHEs each for Neamt and Ilfov.

DOW will support NTP's TB control goals to successfully treat 85 percent of Roma TB patients and detect 70 percent of the estimated incidence of sputum smear positive cases.

Activity 3.3: Develop strategies to implement IEC and BCC activities and increase continuation phase DOT adherence for ex-prisoners.

Current Situation

Tuberculosis is a problem in the 47 prisons in the Romanian correctional system, which has a total of approximately 50,000 inmates. TB control in prisons is part of general TB control, but only 3 prisons have in-patient TB care. Case rates are alarmingly high: in 2000, a total of 550 cases were reported, 387 of which were new, yielding a case rate approaching 800/100,000. The NTP, together with the MOJ, has established a team to address the long standing issues of overcrowding and poor infection control practices within the prison hospital system, and prison physicians, specialists and nurses have been trained by the NTP. However, patient failure to follow up at their local clinic for treatment continuation after release from prison is a serious problem. Although local clinics are notified of recently released prisoners with TB, it is estimated that 50 percent of these patients fail to continue treatment[5]. Lack of case management or a mechanism for follow up of potentially infectious patients increases the risk of TB transmission in the community as well as the risk for the emergence of MDR-TB.

A WHO supported health education program is currently being implemented, consisting of distribution of fliers and posters about TB. The Medical Independent Service (MIS) of the Penitentiary System implements this activity for prisoners. The objective of this program is to inform prisoners about recognizing TB symptoms and the importance of adherence with therapy. However, prison medical personnel are only capable of following the patients while they are incarcerated. Upon parole or release from prison, most patients are lost to follow-up because they are not seen at their local clinic for treatment continuation. There are no records of why patients are lost to follow-up or of where they go upon release. The NTP has planned a referral program for prisoners who are released from prison and assigned to a health facility for continuation of treatment.

Interventions

Both MIS personnel and DOW believe it is useful to liaise with prisoners who are diagnosed with TB but due for release, while they are still incarcerated, in order to educate them about TB and the importance of adhering to their treatment regimen. The expectation is that once prisoners have had sustained contact with health personnel and learn of the curability of TB, know what to expect during continuation phase and that treatment is free of charge, they will be more motivated to present for follow-up care. Activities will support the formal referral system developed by the MOJ and NTP in order to track released prisoners during continuation phase treatment. DOW will also assist the MIS assess how the new referral system is working.

[5] Estimated by NTP (2002).

While case management skills training will be incorporated in several aspects of this project, ex-prisoners are one of the hardest populations to reach, and require targeted human resources. Therefore, in order to improve continuation phase follow-up with newly released prisoners, DOW plans to identify six nurse case managers to provide one-on-one follow-up to ex-prisoners. There will be two nurse case managers in each of Bucharest/Sector 5, Ilfov and Neamt Counties. Nurse case managers will be trained in providing health education to TB patients (ex-prisoners) regarding TB and DOTS and will receive health education materials to distribute among their patients. Nurse case managers will receive training in counseling skills, educating non-literate people, addressing potential barriers to accessing services including gender issues, and communication skills specific to disseminating health education messages.

The nurse case managers will be trained and employed by DOW and DOW will advocate for their eventual integration into the community health nurses model. This nurse case manager initiative will also serve as a pilot of case management for scale up and replication by the NTP and MHF with other populations and categories of providers. Activities will be monitored, along with those of the community health nurses, by the County Manager and NTP supervisory visits.

Since DOW will work in three project sites, it will not be possible to follow-up cases or refer cases in counties other than Ilfov, Bucharest and Neamt. However, it is believed that many prisoners remain in the Bucharest and Ilfov area after release. An incentives program will also be piloted to encourage adherence to treatment. This activity will be supported by the MIS and implemented in accordance with the WHO strategy for TB education for prisons.

IEC topics for prisoners will include knowledge of TB transmission and treatment, with focus on how the patient contracted TB in prison. Since most prisoners reported being more afraid of TB than shameful, emphasis will also be placed on dispelling fear through counseling sessions and targeted health information. Materials will address appropriate topics such as working while sick, interaction with family members, protecting others and the consequences of interrupting treatment.

DOW will support NTP's TB control goals to successfully treat 85 percent of ex-prisoner TB patients and detect 70 percent of the estimated incidence of sputum smear positive cases.

Activity 3.4: Develop strategies to implement IEC and BCC activities and increase continuation phase DOTS adherence for TB patients with support for their families.

Current Situation

In the intensive inpatient phase, reportedly 54 percent of patients in Romania receive DOT[6]. However, full implementation of DOTS is compromised by a lack of follow up for defaulters and lack of support to the patient during the continuation phase.

Health providers ascribe treatment failures to poor adherence in some risk groups,[7] such as impoverished Roma, newly released prisoners and poor Romanians. Patients attribute lack of adherence to a variety of factors including financial need, feeling better, avoiding social stigma,

[6] Global Tuberculosis Control, WHO Report 2004.
[7] KABP Survey results.

and not understanding the importance of treatment completion. GPs also reported having TB patients who do not comply with the treatment due to a lack of understanding the importance of the treatment, not having enough money for food, and a lack of interest. Over 50 percent of the patients reported having to give up their job temporarily or permanently while they were sick.

From the baseline KABP surveys, DOW learned that there is fear associated with TB, and people consider it to be a disease that is isolating for the patient and their family. The majority of discharged TB patients (71%) think that TB is an illness to be afraid of and 44 percent of the poor in the general population think that TB patients should be isolated from the rest of family members and friends. More than half of patients also report that others were also afraid when patients told them they had TB. The main reasons for hiding TB were fear of losing friends and lack of employment opportunities.

Most TB patients, TB 85 percent, received information about TB while they were under treatment. Compared to discharged patients, only about 7 percent of the family members of TB patients received any informational materials about TB. Despite receiving medical information on TB while hospitalized, about half of the discharged TB patients thought that they got TB from a cold or flu.

Interventions

Health education materials directed at TB patients will be given to them once they present at a health facility; these will be include in-depth but easy-to-understand information on the disease and treatment regimen, from diagnosis to being cured. Materials will also focus on communication about TB, including how patients can talk to others, including family members, about their illness, treatment and recovery. It is hoped that, combined with the TB health education messages directed at the general population, this type of communication will reduce the stigma around TB, as well as the associated anxiety and stress.

Community health nurses who have been trained in providing health education to TB patients regarding TB and DOTS will receive health education materials to distribute among their patients and families. The in-patient and out-patient nurses will be trained by NTP under the Global Fund project workplan; DOW will observe these trainings and participate in designing the curriculum if asked to do so by NTP. In order to improve patient follow-up, DOW plans to capitalize on the community health nurses' roles by training them to provide follow-up and treatment to patients who miss an appointment during continuation phase treatment.

In order to encourage family members of TB patients to assist in treatment adherence, health education materials will also contain components that highlight the role of family members as DOT supporters. Although, initially there will not be a designated active role for family members, it is expected that educating families along with TB patients will raise their awareness for the importance of treatment completion and provide some evidence to the level of influence of families in improving adherence. If family members succeed in becoming actively involved, DOW will ask NTP to consider pilot activities that train family members to be case managers. This activity will be undertaken by the working group mentioned in activity 3.5 below.

It is also important to increase the number of community health nurses in Neamt and Bucharest/Sector 5. At present, there are 10 community health nurses in Ilfov County, out of a total 325 nationally, but none in Bucharest/Sector 5 or Neamt County. DOW has learned that Neamt may receive new community health nurses in the beginning of 2005 and will collaborate with MHF/NTP on the training of community health nurses for TB case management. DOW will also advocate to the MHF to provide community health nurses in Bucharest .

Activity 3.5 Initiate a policy level dialogue with NTP at the national level and with TB County Managers at the county level to develop a system for case managers.

In order to support the development of a case manager system to improve treatment outcomes for TB patients, DOW will begin to dialogue with NTP staff at the national and county levels in order to determine the most favorable mechanisms for case management within the existing NTP strategy. DOW will propose to establish a working group for national-level policy and program formulation. At the county level, efforts will focus on determining a similar leadership structure by which a county level-working group can exchange ideas on possible case managers. Attention will be paid to research comparable models in similar settings elsewhere to determine their feasibility for the Romanian context. A mechanism for effective case management will also focus on reporting guidelines for case managers. These working groups will also be instrumental in conducting literature searches to study and discuss models for improving treatment outcomes that are included in current research publications such as the International Journal for TB and Lung Disease, as well as presentations and workshop materials from international TB conferences. Through this dialogue, DOW intends to transfer capacity for planning, implementing and monitoring effective program policy to NTP. DOW will document and share with the NTP the outcomes of piloting case managers for hard-to-reach populations (e.g., ex-prisoners) and of training existing community health network members (e.g., Roma Health Mediators and community health nurses) in case management skills. Findings from these activities, described in Objectives 2 and 3, should serve as tools in advocating for stronger community-based case management systems.

Objective 4: To increase treatment adherence for TB patients by providing incentives for treatment completion, including coupons for transportation, food and hygiene products.

Current Situation

KAPB survey results show that 48 percent of General Practitioners have patients who do not adhere to treatment. The main reasons for not adhering are: no understanding the importance of treatment, lack of money for proper food, and lack of interest.

Intervention

Incentive programs for TB patients piloted through this project will respond to the barriers to treatment and reasons given for non-adherence. They will focus on vouchers for food and additional medications such as vitamins and liver protectors, rather than on transportation (as baseline assessment shows that distance from the doctor's office is not a barrier to get medicines). NTP may independently provide transportation vouchers where they are deemed useful, and DOW will assist in documenting the impact of such enablers as well.

Patients in continuation phase are typically on intermittent therapy (three times a week). However, they often only come for medicines once a week or once every two weeks, and are given their medications to self-administer at home during these periods. Given the difficulty of adhering to an intermittent regimen under self-administration, DOW will implement a DOT pilot program using incentives at GP offices in order to determine the contribution of patient incentives to improving DOT adherence.

Expected results include:

- Nominal lists of TB patients who can receive incentives in target areas
- Inventory of incentives to be distributed to patients.
- List of criteria for TB patients' selection, such as: DOT completion, financial situation, doctor's evaluation frame, etc.
- Establishment of an appropriate distribution schedule and action plan
- Development of the reporting form used by TB specialists for patient selection and treatment outcome, including SOPs for standardization.
- Procurement and distribution of incentives.
- Complete record of each patient receiving incentives according to the reporting form, including eligibility and treatment outcomes.

See Objective 4 in the Planning Matrix in Annex 2 for a summary description of the activities and outcomes under this objective.

Objective 4 will be fulfilled through the following major activities:

Activity 4.1: Workshop with NTP staff, TB County Coordinators and Local Health authorities to assess scope of incentives and provision to patients.

DOW will create a network of stakeholders who will begin to meet in the 4th quarter of Year 1 to develop plans for a pilot incentives program that will provide incentives to providers for effective DOT and health education provision as well as to patients for DOT adherence. DOW will also discuss the comparative successes and challenges of ongoing incentives programs being piloted by other international or local NGOs in Romania, such as the Red Cross.

This programmatic meeting will establish criteria and a prospective action plan and schedule for granting incentives to patients. The following will be useful to this process:

- Reviewing data from the recently completed KABP survey performed by DOW that is relevant toward determining both patients' and providers' attitudes toward incentives need and distribution
- Consulting relevant health system staff (NTP, TB County Manager, and TB specialists/nurses) in order to determine criteria for patient selection as well as establish inventory of incentives to be provided to patients.
- Hearing presentations from the TB County Managers with regard to most appropriate incentives schedule and distribution action plan.
- Reviewing any secondary data that is relevant to developing an incentives distribution action plan, including patient load and cohort data.

- Developing distribution schedule, action plan and reporting format by which incentives will be paid and reported upon.
- Identifying a working group for each county that will work closely with the County Managers to monitor the effectiveness of the incentives program on an ongoing basis to alert DOW and NTP staff of any problems and potential solutions.

Activity 4.2: Review and finalization of the Incentives Reporting Form by DOT providers, including TB specialists, TB nurses and County Coordinators.

After the initial workshop to develop the incentives distribution workplan, the key DOT providers in the NTP's health system will test and review the reporting form for patient selection and treatment outcome. This will be the main instrument used by TB County Coordinators and TB specialists implementing DOTS for a) selection of the TB patients who qualify for incentives (criteria to be developed) and b) for NTP/DOW to collect data on the treatment outcomes.

The Reporting Form will be accompanied by Standard Operating Procedures (SOPs) for incentive distribution; this will insure that the procedure is the same in all TB dispensaries, and will ensure transparency and evaluation criterion.

Activity 4.3: Incentives Procurement [8]

Based upon the inventory of patient incentives developed during the initial planning meeting, DOW will survey the potential retailers who will be contracted to provide incentives coupons for TB patients and their families. DOW will develop and sign the contract/agreement with the incentive suppliers, based on criteria established with NTP and TB County Coordinators. DOW will hire an Incentives Manager in Bucharest to will be responsible for the overall negotiations and establishment of incentives procurement for Bucharest and Ilfov counties. For Baçau and Neamt counties, the Assistant Project Coordinator will be responsible. Approximately, $90 in incentives for each patient will be designated for approximately 1,500 patients over the course of the project. The following incentives may be provided:

- Food and Hygiene Vouchers
- Other over-the-counter health products

Activity 4.4: Distribution of coupons to TB County Coordinators in target counties.

The NTP will be providing incentives/enablers to TB patients in several counties. DOW will assist the NTP in designing a system for monitoring and evaluating the effectiveness of this system (evaluating the impact of incentives and enablers on treatment outcomes) as well as expanding the reach of this system into DOW project areas.

[8] While conducting the workshop and developing a system for incentive delivery and reporting can be done with USAID funds, procurement and delivery of incentives will be contingent of the success of DOW's application to the Global Fund for AIDS, Tuberculosis, and Malaria (GFATM) for cost-share funds to implement incentives with providers and patients. Full-scale implementation of activities 4.3 – 4.5 will be dependent on these funds.

DOW will distribute incentives coupons to TB County Managers on a quarterly basis. However, reports for incentive distribution will be collected on a monthly basis on order to be able to correctly predict demand and provide an appropriate inventory.

Activity 4.5: Distribution of coupons to TB patients in continuation phase treatment according to the schedule for distribution established in the initial workshop.

TB County Managers and TB specialists will distribute the incentives to each patient who has been identified through the selection criteria to be eligible for incentives, and report using the reporting form finalized by the DOW-NTP team.

TABLE 1: Behavior Change Matrix for Providers and Patients

Target Beneficiaries	Approach/Methodology	Desired Behavior Change
Public Health System		
General Practitioners	Patient education and communication skill development workshops	Improved communication and counseling techniques with patients about TB and treatment.
Family Medicine Nurses	Patient education and communication skill development workshops	Improved communication and counseling techniques with patients about TB and treatment.
Nurse Case Managers	Patient education, counseling and defaulter tracking skills development trainings.	Improved follow-up and counseling of defaulters, improved education; quality education, support of adhering patients
Community Health Networks		
Community Health Nurses	Community-based health information campaign and patient education skills development workshops.	Successfully lead community IEC activities, improved patient education
Roma Health Mediators	Community-based health information campaign, patient education, advocacy skills development workshops.	Successfully lead community IEC activities, improved patient education; advocating to MFH, NTP for Roma needs; follow-up with defaulters.
Direct Beneficiaries		
Roma	Community TB IEC Campaigns led by Roma Health Mediators, use of media	Due to improved knowledge of TB and avail treatments and incentives, Roma will seek care earlier, adhere to treatment, create more supportive environment to others.
Poor Romanians	Community TB IEC Campaigns led by Community health nurses, use of media	Due to improved knowledge of TB and avail treatments and incentives, poor Romanians will seek care earlier, adhere to treatment, create more supportive environment to others.
Ex-prisoners	TB IEC in prisons, among prison med units, and post-release follow up by Case Managers	Due to improved knowledge of TB and importance of treatment completion, ex-prisoners will adhere to treatment regimens and be less concerned of stigma
TB patients and family members	Importance of treatment follow-up as well as follow-up at home for DOT implementation and addressing stigma.	Family members will create more supportive environment for patients and encourage treatment completion; patient treatment adherence will improve
General Population	TB education: recognizing symptoms, seeking care, what to expect, treatment and addressing stigma.	Due to improved knowledge of TB and avail treatments, care seeking behavior will improve, and stigmatizing behavior will be reduced

TABLE 2: Intended Role of Institutional Partners

Partner and/or Collaborator	*Role within project*	*Expected Outcome*
Ministry of Health and Family (MHF)	Work with NTP to strengthen community DOTS-related components of national strategy. Work with the DPH to develop both targeted and general health education activities. Work with the Counselor on Roma Issues to develop training protocols for Roma Health Mediators	MHF and NTP will produce effective community DOTS components MFH and DPH produce effective public TB education campaigns. Capacity built to work collaboratively on health education campaigns. MHF and RHMs/PHEs will produce effective Mediator training protocols
Ministry of Justice (MOJ)	Work with the Medical Independent Service within the Penitentiary Systems to create and implement an action plan for tracking prisoners with TB who are released during the continuation phase.	The MISP will begin tracking and following up with TB-infected prisoners after release to improve treatment adherence and surveillance records
Romania CRISS	Co-train Roma Health Mediators to serve as DOTS supporters for Roma communities	Romania CRISS will provide valuable input to trainings; RHMs/PHEs will perform duties more effectively
Ministry of Education (MOE)	Integrating TB components into teacher training curricula for health education and promotion in schools.	Capacity built to integrate TB into teacher training curricula. Capacity built to plan and implement school based TB health education sessions.
Population Services International (PSI)	As DOW's grant mentor, PSI will provide operational support on implementing health education projects in partnership with the Romanian MHF. DOW will provide technical assistance for the planning and implementing TB control projects.	Both PSI and DOW will perform project tasks more effectively and facilitate more successful programs as a result of mentoring.

ÐÏ à¡± á > þÿ
þÿÿÿ € ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿþÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿR o o t
E n t r y ÿÿÿÿÿÿÿÿÿÿÿÿ
þÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿ
ÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ
R o o t
E n t r y ÿÿÿÿÿÿÿÿ À
F 0 q #^Ä V i s i o D o c u m e n t
ÿÿÿÿ ÿÿÿÿ Ý
˜ S u m m a r y I n f o r m a t i o n (
ÿÿÿÿ hð D o c u m e n t S u m m
a r y I n f o r m a t i o n 8 ÿÿÿÿÿÿÿÿÿÿÿÿ
¼ ÿÿÿÿÿÿÿÿ ýÿÿÿþÿÿÿþÿÿÿþÿÿÿ

-
! " # $ % & ' ( ) * + , -
. / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A
B C D E F G H I J K L M N O P Q R S T U
V W X Y Z [\ ] ^ _ ` a b c d e f g h i
j k l m n o p q r s t u v w x y z { | }
~ þÿÿÿV i s i o I n f o r m a t i o n "
ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ
þÿÿÿ þÿÿÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿ
ÿÿÿþ
ÿ þÿ
ÕÍÕœ. “— +,ù®D ÕÍÕœ. “— +,ù® ¼ @ €H

P \ |

ˆ ¨ ä - - Doctors of the World -

- Pages - Page-
1 ¼ 8 Œ €” œ ¨ ´ _VPID_PRE
VIEWS @ _VPID_ALTERNATENAMES _PID_LINKBASE ä
A -

þÿ à…ŸòùOh «‘ +'³Ù0 8ð H P
d p | ˆ ″ ´ ä - Alka
Dev - - - - - Graphic for
Section E2 G |ï ÿÿÿÿ

Œ ¡ | (` EMF tï l
X @ ð â €© V I S I O D r a w i n g L Ôî
¡ | ¢ }
Ì €? €? ÿÿÿ d (Œ Hî (¢ } H
î ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ
ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿXXXÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ
ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿ

ÿÿ×××¿¿¿ÇÇÇ×
××¿¿¿ÊÊÊßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ

ÿÿÿ@@@ÿ
ÿÿ@@@ÿÿÿ@@@ÿÿÿXXXÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿ§§§HHH___
ßßßÿÿÿ‾‾‾ÿÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿççç———
(((888ŸŸŸ÷÷÷ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ sssggg×××ÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ ÿÿÿ ÿ
ÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷ XXX···ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿçç
ç¿¿¿ŸŸŸ ```@@@@@@@@@@@@@@@@HHH ‡‡‡¿¿¿ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÇÇÇ``` ïïïÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ www„„„çççÿÿÿÏÏÏÿÿÿ@@@ÿÿÿ@@@ÿÿ
ÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ
pppçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ888•••ïïï···xxx@@@ @@@``` ŸŸŸ¿¿¿¿¿¿¿¿¿¿¿¿
¿¿¿¿··· xxx@@@000 (((hhhŸŸŸßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï
,,,÷÷÷ÿÿÿ___ÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ‾‾‾ÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿÿ¿¿¿
000```çççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××TTT HHH‡‡‡¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××———``` ___
hhh¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÂÂÂ '''‾‾‾ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷xxx@@@ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿççç ((((((pp
p ÷÷÷ÿÿ
ÿÿÿÿÿßßß———
@@@ ```ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ@@@ïïïßßßPPP```ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××@@@‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿçççppp
×××ÿÿÿÿÿÿHHH§§§ÿÿÿÿÿÿ×××‡‡‡ ‡‡‡ÏÏÏÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïïŸŸŸ000HHH¿¿¿ÿÿÿÿÿÿÿÿÿÏÏÏ@@@ïïïÿÿÿÿÿÿÿÿÿÿŸŸŸ888ÇÇÇÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿ ÿÿ
ÿÿ^^^...ÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß```
÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿ‾‾‾ ———
ÿÿÿ‡‡‡(((xxx xxx000hhhÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿ¿¿¿ @@@www,,,@@@···ÏÏÏ@@@ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××888‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ @@@ßßß
¿¿¿ÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ¡¡¡ÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïïXXXEEEMMM÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ```
ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ‾‾‾PPPÿÿ
ÿÿÿÿhhh ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï```@@@ ¿¿¿‡‡‡PPP:::CCC ¤¤¤ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿxxx@@@çççÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷ïïïÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿÿÿÇÇÇ(((§§§ÿÿÿ···PPP÷÷÷ÿÿÿÿÿÿïïïXXX0
00ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ>>>‾‾‾ÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ

ÿÿÿ   ÿÿÿÏÏÏ000ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ···888ÉÉÉPPP000ÇÇÇÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿(((ÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿŸŸŸ888çççÿÿÿÿÿÿÿÿÿÿ···PPP÷÷÷¿¿
¿(((§§§ÿÿŸŸŸ   ¿¿¿ÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿ×××   ‡‡‡ÿÿÿÿÿÿÿÿÿ   """eeexxxÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ   pppÿÿÿÏÏÏ888‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiiiPPP   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ——
—```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ······---
@@@çççÿÿÿiii   pppÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   bbb×××ÿÿÿÿÿÿÿÿÿÿàààØØØ
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷   ÷÷÷ÿÿÿÿÿÿxxx@@@çççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   xxxÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿ ÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿ   hhhÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××888ƒƒƒÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿHHH222hhh···¿¿¿···ppp888÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿiii   ¿¿¿ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ¿¿¿000ÏÏÏÿÿÿÿÿÿÿÿÿÿ¿¿¿(((···ÿÿÿÿÿÿ×××ÿÿÿÿÿÿÿÿÿÿÿÿ
‡‡‡```ÿÿŸŸŸ   sssggg××
×ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿpppÿÿÿ@@@ÿÿ ÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ888ÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇÇÇÇ———
HHH@@@@@@666@@@@@@@@@@@@:::@@@@@@@@@@@@HHH   ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiii   ÿÿÿ   ÿÿ
ÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿiiiAAA(((ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿ
ÿÿ   www„„„çççÿÿÿÿÿÿ   ÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ———
hhhÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿhhh```iiiÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ666çççÿÿÿÿÿÿ÷÷÷ZZZÿÿ
ÿÿ
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷   ÷÷÷ÿÿÿÿÿÿÿÿÿÿiii   GGG222iiiÿÿÿÿÿÿÿÿÿÿÿÿÿXXXÿÿÿ‡‡
‡xxxÿÿÏÏÏÿ
ÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿ ÿÿÿÿÿÿÿÿÿÿ
ÿÿ¿¿¿
HHH÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿhhh   ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ———   ÿÿÿÿÿÿÿÿÿ
   ÿÿÿÿÿÿÑÑÑ   ÿÿ‡‡‡xxxÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿ———
hhhÿÿÿÿÿÿ÷÷÷   pppçççÿÿÿÏÏÏ@@@iiiÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿXXX§§§ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ···
———
¿¿¿çççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××888iiiÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿŸŸŸHHHÿÿÿÿÿÿÿÿÿÿÏÏÏiiiÿÿÿÿ
ÿÿiii   ÿÿÿ888   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ(((
÷÷÷ÿÿÿŸŸŸ   XXXßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ@@@÷÷÷ÿÿÿÿÿÿiiiÿÿÿ   ÷÷÷HHH¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿŸŸŸÿÿÿÿ   ÿÿÿ   ÿÿÿ
  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷———
888HHH   hhh@@@   XXXÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷(((ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   pp
pÿÿÿiii   iiiÿ
ÿÿÿÿÿ   ÿÿÿÿÿÿÿÿÿ   ÿÿÿiiiHHHXXX———
¿¿¿ŸŸŸhhh888ßßß   (((HHHÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ···PPP÷÷÷ÿÿÿÿÿÿßßßÿÿÿ(((iii(((çç
çÿÿÿ······ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@

@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ‡‡‡ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß(
((hhhßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§888 ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ŸŸŸ```ÿÿ
ÿHHHŸŸŸÿÿÿÿÿÿÿ sss¿¿¿¿¿¿ ÷÷÷çça¿¿¿ÏÏÏÿÿÿ
ÿÿ§§§hhh@@@```———÷÷÷ÿÿÿ———
¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§XXXÿÿÿÿÿÿÿÿÿÿÇÇÇÿÿÿHHH¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ ïïï¿¿¿ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿ
ÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ___ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß@@@ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ···HHHÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿŸŸŸ>>>xxxsssÉÉÉ®®
®777KKKggg ³³³œœœ777777 jjjÿÿÿççç÷÷÷ÿÿÏÏÏHHHh
hhÿÿŸŸŸ```ÿÿÿPPPÿÿÿ§§§ÿÿÿpppppp ÿÿÿÿÿÿ
ÿÿßßßßßßÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿ
ÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ···ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@¿¿¿ÿÿÿÿÿÿÿÿÿÿ@@
@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿHHH···ÿÿÿÿÿÿÿÿÿÿççç000çççÿÿÿÿÿÿÿÿÿÿÿÿÿ···PPP÷÷÷ÿÿÿÿÿÿÿ
ÿÿÿäää

XXXššš¦¦¦:::ÍÍÍÍÍÍÍÍÍ ³³³ÍÍÍÍÍÍÍÍÍÍÍÍÀÀÀÍÍÍ,,, VVVÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿ÷÷÷``` ÿÿÿ ÿÿÿ ÿÿÿ×××ÿ
ÿÿ’’’000×××ÿÿ
ÿÿ___ÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï
ÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿhhh888wwwZZZÿÿÿÿÿÿÿÿÿÿPPP¯¯¯ÿÿÿÿÿÿÿÿÿÿÿÿÿÿççç00
0çççÿÿßßßwwwß
ßßÐÐÐÇÇÇ:::†††ÍÍÍ¦¦¦'''ÍÍÍÍÍÍÍÍÍ---
ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇttt ÃÃÃÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï÷÷÷ÿÿÿ———
ïïïÿÿÿXXX ÿÿÿ ÿÿÿPPPÿÿÿ••
•000ÿÿ÷÷÷ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿ
ÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿçççˆˆˆ ```···ÏÏÏ000ÿÿÿÿÿÿïïï¿¿¿®®®<<<¿¿¿ÿÿÿÿÿÿ
ÿÿwww

hhhÀÀÀÍÍÍÍÍÍ€€€GGGÍÍÍÇÇÇ€€€ÍÍÍÍÍÍÍÍÍ333šššÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇÏÏÏÜÜÜnn
nèèè ¿¿¿ÿÿÿïïï(
((ÊÊÊÿÿÿ
ÿÿÿ000ÿÿÿCCC¯¯¯ÿÿÿ ÿÿÿ ÿÿÿ ÿÿ
ÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷
÷÷÷ÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿFFFpppÿÿÿ‡‡‡ppp———
888666ÇÇÇïïïÿÿÿÿÿÿ··· 000hhh§§§çççÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ <<<ÀÀÀÍÍÍÍÍÍÍÍÍÍÍÍÀÀÀ ÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ@@@ ÍÍÍÍÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇ444 KKKßßßÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@¿¿¿ÿÿÿ@@@ÿÿÿ ßßß%%%÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïïÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿ¿¿¿ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ïïï@@@UUU6
66ÏÏÏÿÿÿ¯¯¯PPPÏÏÏ ```ÇÇÇççç ÷÷÷¿¿¿‡‡‡PPP_ ```———
×××ÿÿ¯¯¯çççÏÏÏÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ///jjjÍÍ
ÍÍÍÍÍÍÍÍÍÍÍÍÍÍZZZ†††¦¦¦ÍÍÍfffÍÍÍ ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ††† :::www

¶¶¶ÿÿÿhhh——
————
ÿÿÿïïïÿÿÿ   ppp‹‹‹ÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷
÷PPP§§§ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿèèè   444ïïïÿÿÿ000ÏÏÏÿÿÿïïï———
(((hhhïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××ŸŸŸ```(((ÿÿÿ   ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿžžž   ºº
ºÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ‹‹‹```ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇÍÍÍÍÍÍ333ÍÍÍ333ÍÍÍÍÍÍÍÍÍÍÍÍ³³³

šššÍÍÍÍÍÍºººÑÑÑüüüÿÿÿ
ÿÿÿÿÿÿÿÿççç   ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
÷÷÷ÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷XXX000ŸŸŸÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿ×××ÿÿÿçççeee

¬¬¬```000´´´888ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ%%%```   ```ÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ@@@   88
8×××ÿÿÿïïïÿÿÿÿÿÿ   ³³³ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍºººÍÍÍÍÍÍÍÍÍ³³³šššššš---Í
ÍÍÍÍÍÍÍÍÍÍÍ   ÇÇÇÍÍÍÍÍÍ†††šššÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ,,,~~~ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷‡‡‡(((
PPP×××   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ:::§§§ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ```
@@@@@@,,,   ZZZ000ïïï

’’’ÿÿÿÿÿÿÿÿÿÿÿÿHHH···ÿÿÿïïï———((((((çççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿÷÷÷ÿÿÿ
UUU   ‡‡‡ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇ```ÍÍÍÍÍÍ   QQQ

- - -======%%%

JJJttt   ÇÇÇÍÍÍÍÍÍÍÍÍÍ€€€ffffffffffffffffff```   GGG   kkk¯¯¯÷÷÷@@@xxx×××ÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷¯¯¯000¹¹¹
çççÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß¿¿¿¿¿¿¿¿¿¿ooo000ïïïÿÿÿppp000ÙÙÙ   ÏÏÏÿÿÿÿÿÿÏÏÏ000ÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÏÏÏÿÿÿ÷÷÷```···ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××‰‰‰MMM   ,,,“““ÍÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍ|||...   MMM———
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï§§§)))   bbbºººÍÍÍÍÍÍsssfffffffffffffffffffffYYY

]]]šššzzzxxxÿÿÿÿÿÿÿÿÿÏÏÏÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿŸŸŸÿÿÿÿÿÿÿÿÿÿßßß((({{{ ÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ 000ïïïÿÿÿ‡‡‡ggg §§§ ···ÿÿÿhhh———
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï———(((———
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ]]]¨¨¨ÍÍÍÍÍÍºººŒŒŒšššÇÇÇÍÍÍÍÍÍÍÍÍ ###@@@%%% ÿÿÿ```ŸŸ
Ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿàààà
èèè††† ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍššš½½½ÿÿÿÿÿÿ÷÷÷)))ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@--- ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿ———
hhhÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ 000ïïïÿÿÿ@@@§§§ßßß··· ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇ
ÇÇ§§§ÿÿÿÏÏÏ···ÿÿÿÿÿÿÿÿÿÿÿÿÿ)))ÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍuuu<<<ßßßÏÏÏ(((›››ÿÿÿ
PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï

PPPÿÿÿÿÿÿ÷÷÷]]]JJJÇÇÇÍÍÍ fff€€€³³³fff€€€ÀÀÀššš---ííí¢¢¢ßßß ßßßÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿ
ÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿPPP¯¯¯PPP¯¯¯ÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ 000ààà §§§ ßßßÏÏÏ
>>>ÿÿÿ···(((
‡‡‡ççç÷÷÷ ÍÍÍÍÍÍÍÍÍšššÍÍÍšššÍÍÍÍÍÍiii666÷÷÷ ÿÿÿ ÿÿÿÿÿÿïïï ÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿPPPªªªÿÿÿÿÿÿÿÿÿÿÿÿ¦¦¦EEEÇÇÇ¦¦¦fff€€€³³³fff€€€¦¦¦333LLL ###PPPNNNŸŸŸÿÿÿÿ
ÿÿßßßÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿ÷÷÷ ïïï···HHHÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ ---TTTÿÿÿ§§§ ÏÏÏ888 ÿÿ
ÿÿÿÿÿÇÇÇ``` EEE>>>ÍÍÍÍÍÍÍÍÍšššÍÍÍ ÍÍÍ333{{{eeeÿÿÿ@@@ÿÿÿ@@@ÿÿÿpppÿÿÿÿÿÿ@@@¿¿¿
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ```ÿÿÿÿÿÿ¶¶¶EEEÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ ```ggggggÿÿÿçç
ç(((ÇÇÇÿÿÿ÷÷÷``` ÿÿÿÿÿÿ ïïïÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ---+++ÿÿÿ@@@···ppp èèè000```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiii
mmmºººÍÍÍÍÍÍÍÍÍÍÍÍ“““EEEÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿ×××ÿÿÿ¿¿
¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿ–––
VVVÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ--- ÿÿÿÿÿÿ×××888(((@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@ ÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ ÿ
ÿÿ
µµµšššÿÿÿßßß§§§XXX×××ïïïHHHPPP÷÷÷ÿÿççç¤¤
¤ÍÍÍ MMM OOOÍÍÍÍÍÍÇÇÇ###ßßßÿÿÿÿÿÿÿïïïÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ"""¿¿¿ÇÇÇÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿ ÿÿÿ```ÿÿÿÿÿÿ555 ÍÍÍ---
---ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ???×××ÿÿÿÿÿÿÿÿÿ×××¿¿¿÷÷÷ÿÿÿÿÿ
ÿÿÿÿÿÿÿ§§§XXXÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷ ÷÷÷ÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿiii ÿÿÿÿÿÿ ÿÿÿXXX’’’ ···÷÷÷XXX
@@@ïïïÿÿÿ———
OOOÍÍÍ³³³¦¦¦³³³šššÀÀÀÍÍÍDDD///ßßßÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ´´´@@@ <<<888 @@@ÇÇ
ÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ***ÍÍÍºººÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÏÏÏýýýÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿiii ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÇÇÇ888ÿÿÿŸŸŸÿÿÿßßß(((×××ÏÏÏ ¦¦¦ÿÿÿhhh888ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿNNNmmmsss ZZZÍÍÍÍÍÍÍÍÍÍÍÍ uuu
NNNÏÏÏ ÿÿÿ ïïï,,,888¿¿¿ÿÿÿ‡‡‡×××ÿÿÿÿÿÿ¿¿¿888```÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇƒƒƒiii!!
!<<< sssÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍºººº[[[ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ(((×××ÿÿÿÿÿÿÿÿÿÿÿÿXXX§§§ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ ÿÿÿÿÿÿ
ÿÿ pppÿÿÿÿÿÿ ÷÷÷ ÿÿÿÿÿÿÂÂ
Â ÏÏÏÿÿÿ®®®000ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷¢¢¢§§§ŸŸŸ VVVÀÀÀÍÍÍÍÍÍÍÍ³³³

ÙÙÙŸŸŸ000PPPÇÇÇÿÿÿ@@@ŸŸŸÿÿÿÿÿÿÿÿÿÿÿïïï¢¢¢ÿÿÿ¿¿¿ÿÿÿ¿¿¿———
CCCÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿççççggg   ///===³³³ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿPPP¯¯¯ÿÿÿÿÿÿÿÿÿÿÿÿ   pppÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
hhh———
ÿÿÿŸŸŸÿÿÿµµµ000ÿÿÿÿÿÿÇÇÇFFF   ÿÿÿ„„„ÀÀ
ÀÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍfffPPPiiiÿÿÿÿÿÿÿÿÿ¯¯¯888(((oooÿÿÿÿÿÿÿÿÿÿÿÿÿççç   ÿÿÿ   ÿÿÿ
ppp‹‹‹ŽŽŽçççÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇÁÁÁ000ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ

ïïïÿÿxxx‡‡‡ÿÿÿÿÿÿÿÿ
ÿÿÿÿ···HHHÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿÿ   §§§XXXÿÿÿ§§§888···ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿïïï§§§000ÏÏÏÿÿÿæææÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍVVV———ÿÿÿ   ÿÿÿ   ÿÿÿ×××###```
×××ÿÿÿÿÿÿÿÿÿÿ‡‡‡ïïïßßßÿÿÿ   ÿÿÿïïï

)))×××ÿÿÿÿÿÿÿÿÿ×××———´´´

ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ***ÏÏÏÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§XXXÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@ÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿ
ÿÿÿXXX§§§ÿÿÿŸŸŸÿÿÿ„„„hhhççç(((ïïïÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ```ÏÏÏ000ÿÿÿpppÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ===···¿¿¿ÿÿ
ÿ   ÿÿÿŸŸŸ   pppÿÿÿÇÇÇïïï(((xxx÷÷÷ÇÇÇŸŸŸÿÿÿ   ÿÿÿÿÿÿÿÿÿUUU}}}ÇÇÇ———000‡‡‡———
```¿¿¿   ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@¿¿¿ÿÿÿÿÿÿÿ       §§§
XXXÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿ+++¨¨¨   ÇÇÇÍÍÍÀÀÀ¦¦¦ÍÍÍÍÍÍÍÍ
Í???ŽŽŽÿÿÿÿÿÿ§§§÷÷÷ÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿßßß   çççHHH"""ßßß×××ÏÏÏPPP   UUU   §§§çççÇ
ÇÇÿÿÿÿÿÿÿÿÿÿÿÿ   ÍÍÍÍÍÍÍÍÍ¦¦¦:::ÀÀÀºººÍÍÍàààÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿ@@@¿¿¿ÿÿÿŸŸŸÿÿÿooo      pppÿÿÿÿÿÿ```ÿÿÿ ___ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿŸ
ŸŸÿÿÿ%%%WWW%%%---ÍÍÍ¦¦¦ZZZÍÍÍÍÍÍÍÍÍJJJ???ÿÿÿÿÿÿXXX¯¯¯ÿÿÿ```ŸŸŸÿÿÿÿÿÿïïï¿¿¿ÿÿÿiii
'''   '''xxx×××···×××   pppÿÿÿÿÿÿÿÿÿßßßÿÿÿÿÿÿßßß   ÍÍÍÍÍÍÍÍÍÍÍÍ---ÍÍÍ---
```

ßßßÿÿÿßßß
ÿÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ@@@¿¿¿ÿÿÿÿÿÿÿ ```ŸŸŸÏÏÏ000ÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿ
ÿÿ÷÷÷ ÷÷÷<<<šššÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍmmmwwwÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßßaaa'''@@@÷÷÷ @@@ÂÂÂ
ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿPPP¯¯¯ÿÿÿÿÿÿÿÿÿÿŸŸŸPPPÿÿÿ···===ÍÍÍZZZÍÍÍ333ÍÍÍ¦¦¦ÍÍÍœœœ
000———
çççÿÿÿßßß ÿÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿ@@@¿¿¿ÿÿÿŸŸŸÿÿÿTTTŸŸŸÿÿÿ``` ÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ÷
÷÷XXX———ÿÿÿªªª¦¦¦ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ³³³---ÇÇÇ PPP
AAA ¹¹¹÷÷÷ÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿ÷÷÷ ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïïÿÿÿwwwnnnÍÍÍÍÍ
ÍfffÍÍÍfffÍÍÍÍÍÍ---555ÿÿÿ···``` HHHŸŸŸïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿØØØ

ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿXXX§§§ÿÿÿÿÿÿ ÿÿÿ÷÷÷```
XXXsss ___ ___ ___ ___ FFF ÿÿÿÿÿÿÿÿÿÿÓÓÓÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ

,,,ppp¯¯¯çççÿÿÿÿÿÿ———
hhhÿÿÿÏÏÏÿÿÿÿÿÿÿÿÿ   ÿÿÿïïï÷÷÷ÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ------ºººÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍÍÍÍÍgggwwwÿÿÿÿÿÿÿÿÿÿÿÿ§§§XXXpppÿÿÿçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿßßß
ÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿŸŸŸÿÿÿooo   ÿÿÿÿÿÿÿÿÿßßß§§§
···ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿ]]]ÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ   ]]]ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
```RRR???ÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÏÏÏ   ÷÷÷xxxhhhÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¯¯¯CCC“““ZZZÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍÍÍÍÍßßßïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ‡‡‡   ```¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿhhh———
ÿÿÿÿÿÿ   ŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿEE
E†††ÍÍÍÍÍÍšššMMMÍÍÍÍÍÍÍÍÍÍ777¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷(((   §§§ßßßÿÿÿÿÿÿÿÿÿ   xxx(((
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷   ºººÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÀÀÀæææÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿçççç   000···ÿÿÿçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿ···HHHÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ   pppÿÿÿŸŸŸÿÿÿ™™™PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿŸŸŸBBBÍÍÍ¦¦¦

mmmÍÍÍÍÍÍÍÍÍ---444ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ßßßXXX      @@@
XXXßßßÿÿÿÿÿÿÿÿÿÿÿÿÿ×××¿¿¿çççÿÿÿfff{{{ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇ“““ÍÍÍaaawwwÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ000(((‡‡‡ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿ———
hhhÿÿÿÿÿÿÿÿÿÿÿÿÿ   pppÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿÿÿÿ   ×××(((ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷%%%ŒŒŒ   €€€ÍÍÍ³³³ÍÍÍfffÍÍÍddd<<<÷÷÷ÿÿÿÿÿÿ
ÿÿÿ000ÏÏÏÿÿÿÿÿÿÿÿÿÿ÷÷÷ƒƒƒ¹¹¹ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿçççç888ßßß|||iiiÍÍÍÍÍÍÍÍÍÍÍÍÍ
ZZZ–––```³³³
```

çççÿÿÏÏÏhhh   000———
çççÿÿÿppp   ÿÿÿÿÿÿÿÿÿÿÿÿXXX§§§ÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿïïï   ÿÿÿŸŸŸÿÿÿßßß   ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÊÊÊ   €€€ÍÍÍÍÍÍÍÍÍ333ÍÍÍ333ÍÍÍ•••
<<<ßßßÿÿÿ¯¯¯PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ   ÿÿÿ   ÿÿÿ   ÿÿÿ@@@ÿÿÿÿÿÿ÷÷÷eeeiiiÍÍÍ---   ÍÍ
ÍÍÍÍÀÀÀfffºººsss666†††ÿÿÿ
ÿÿ···```   HHH---
¬¬¬ÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ßßßÿÿÿ   ÿÿÿ000ÏÏÏÿÿßß
ß
ŽŽŽ•••ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ   +++¡¡¡(((ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏÿÿÿ   ÿÿÿ   ÿÿÿ‹‹
‹XXXŸŸŸÏÏÏ,,,{{{ÍÍÍÍÍÍ¦¦¦†††ÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇWWW   èèè¼¼¼   ÷÷÷¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿
¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿ§§§   ‡‡‡ÿÿÿÿÿÿ÷÷÷   ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿXXX§§§ŸŸŸÿÿÿßßßhhh———
ÿÿÿççç
   ççç   “““ÍÍÍÍÍÍÍÍÍÇÇÇ   ÍÍÍÍÍÍÍÍÍÀÀÀ)))   ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ   ÿÿÿ   ççç   ***---ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍmmm‹‹‹âââÿÿÿƒƒƒ

999333@@888ïïïÿÿÿÿÿÿççç   ÿÿÿÿÿÿÿÿ
ÿÿÿÿÇÇÇ888ÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿ   ÿÿÿ···HHHÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï000   ÿÿÿÿÿÿÇÇÇ

¦¦¦ÍÍÍÍÍÍyyyGGGÍÍÍÍÍÍÍÍÍÍÀÀÀ
OOO UUU||| ßßßÿÿÿÿÿÿçççç¿¿¿¯¯¯fff---222IIIfffÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ††
† ¿¿¿ÿÿÿÿÿÿ÷÷÷+++ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿888ÿÿÿÿ
ÿÿŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿiii ÿÿÿÿÿÿÿÿÿ÷÷÷ ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿppp ÿÿÿÿÿÿÿÿÿÿÿÿ···111ÍÍÍÍÍÍGGG“““ÍÍÍÍÍÍÍ
ÍÍZZZsssÍÍÍÍÍÍÀÀÀ†††>>>$$$ 777CCCyyy³³³ÍÍÍÍÍÍsssÀÀÀÇÇÇ---ÍÍÍÍÍÍÍÍÍÍÍ
ÍÍÍÀÀÀ)))†††ÿÿÿÿÿÿ÷÷÷ EEEÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿ000ÏÏÏÿÿÿPPP¯¯¯ÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ@@@¿¿¿ÿÿÿÿÿÿÿÿÿHHH···ÿÿÿÿÿÿ
ÿÿÿýýýÝÝÝ´´´³³³ÍÍ
ÍÍÍÍÍÍÍÍºººÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍšššÍÍÍšššÍÍÍÍÍÍÍÍÍÍÍÍ“““333
333333---??? ···¿¿¿ÊÊÊ}}}pppÿÿÿÿÿÿÏÏÏÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿
ÿÿÿÿÿÿÿÿÿÿPPP¯¯¯÷÷÷ ÷÷÷ÿÿÿÿÿÿÿÿÿßßß
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿ÷÷÷HHH¯¯¯ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ

444ÍÍÍÍÍÍÍÍÍÍGGG†††ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ ÍÍÍ ÍÍÍ³³³ÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍÍÍÍÍÍŒŒŒ¬¬¬¤¤¤ ppp@@@-
ˆˆˆ000ÿÿÿÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ```ÿÿÿ÷÷÷
ççç¯¯¯PPPÿÿÿÿÿÿÿÿÿÿÿÿ———
hhhÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿççç ÷÷÷ÿÿÿÿÿÿ÷÷÷
çççÿÿ÷÷÷HHH```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿee
e<<<555ººº¦¦¦'''ÍÍÍÍÍÍÍÍÍÍººº“““ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÇÇÇÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÀÀÀOOO555ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿpppphhhÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿ¿¿¿XXX‡‡‡ÿÿÿHHH···ÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿ ÿÿXXX§§§ÿÿÿÿ
ÿÿÿÿÿppp ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿPPP```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÏÏÏÇÇÇÿÿÿ………¥¥¥;;;“““ÍÍÍÍÍÍÍÍÍÍ¦¦¦mmmÍÍÍººº€€€ÍÍÍÍÍÍ---sssÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
ÍÍÍÍÍÍÍÍÍÍttt

fff÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ———
000 @@@ŸŸŸÿÿÿ×××(((ÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ888ÿÿÿÿÿÿÿÿÿßßß
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿPPPŸŸŸÿÿ
ÿÿÿÿ¯¯¯OOO$$$NNN³³³ÍÍÍÍÍÍÍÍÍÍÍÍyyyMMMÍÍÍÍÍÍœœœ ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍºººˆˆˆããã³
³³ßßßÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿppp ÿÿÿÿÿÿÿÿÿÿÿÿÿXXX§§§ÿÿÿ
ÿÿÿ
ÿÿ000ÏÏÏÿÿÿÿ
ÿÿÿÿÿUUU———
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿxxxßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏGGGïïïÿÿÿÿÿ
ÿ000ÏÏÏïïï~~~ ***ÏÏÏÍÍÍÀÀÀ---
“““ÍÍÍÍÍÍÍÍÍ ³³³ÍÍÍÍÍÍÍÍÍ³³³ZZZ))) „„„ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿçççç ÷÷÷ÿÿÿÿÿÿÿÿÿççç
÷÷÷ÿÿÿÿÿÿ ÿÿÿ ÿÿÿ ÿÿÿ ×××vvv[[[ïïïÿÿÿ
FFF§§§ªªªÿÿÿ ÿÿÿÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¯¯¯PPPÿÿÿÿÿÿ÷÷÷HHH ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ`
``HHH÷÷÷ÿÿ¿¿¿pppÿÿÿÿÿÿ———
hhhÿÿÿÿÿÿ÷÷÷¿¿¿ßßßÿÿÿÎÎÎ 777RRRÏÏÏ³³³ """777aaaæææËËËxxxÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿÿÿÿppp ÿÿÿÿÿÿÿÿÿÿÿÿÿppp ÿÿÿÿÿÿŸŸŸÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿ¹¹¹RRR ___
___ ___ ___ ³³³ÿÿÿkkk ___wwwßßßÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿ888ÇÇÇ÷÷÷PP
P···ppp ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ 000÷÷÷ÿÿÿÿÿÿÿÿÿïïïppp@@@@@@@@@@@@@@@@@@@@@:::>>>@
@@@@@

:::@@@@@@,,,   @@@PPP¿¿¿ŽŽŽqqq¿¿¿ÏÏÏÿÿÿßßßcccHHH¿¿¿÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿÏÏÏ000ÿÿÿÿÿÿÿÿÿÿÿÿÿßßß(((÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ   ÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ¿¿¿ÿÿ ÿÿÿ
ÿÿÏÏÏ...PPP··
·ÿÿÿççç000çççÿÿÿÿÿÿÿÿÿÿÿÿ ___000ïïïÿÿÿÿÿÿÿÿÿ×××(((¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿
¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿ @@@;;;×××ÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿHHH···ÿÿÿÿÿÿÿÿÿÿÿÿPPP   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ///~~~ÿÿÿÿÿÿÿÿÿ   PPPÿÿÿÿÿÿÿÿÿ   000ïïïÿÿÿÿÿÿÿÿÿÿÿÿ888ÇÇ
Çÿÿ444ÇÇÇÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿ
ßßßÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ000ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿççç000çççÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿ
ßßßÿÿÿÿÿÿÿÿÿÿÿÿ×××(((ÿÿÿÿÿÿŸŸŸÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿ
ÿÿÿÿÿÿÿ   pppÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿ
ÿÿÿßßß000ïïïÿÿÿÿÿÿÿÿÿ
÷÷÷000×××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ___ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ   PPPÿÿÿÿÿÿÿÿÿ÷÷÷(((‹
‹‹
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§XXXÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿ
ÿ   ÿÿÿÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿ
ÿÿ@@@¿¿¿ÿÿÿÿÿÿÿÿÿ
ÿÿÿppp   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿÿn
nn   ÑÑÑÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ···HHHÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ
@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿ   PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßßpppÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ```ŸŸŸ÷÷÷ÿ
ÿÿ   ÿÿÿ¿¿¿@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿçç碢¢¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿
¿¿¿¿¿¿¿¿¿¿¿¿çççÿÿÿ×××¿¿¿¿¿¿¢¢¢çççÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿ
ÿÿÿ÷÷÷(((ßß
ßÿÿÿÿÿÿaaa“““@@@ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï   ÷÷÷ÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ
 ÿÿÿ   ÿÿÿ   ÿÿÿßßßÿÿÿÿÿÿ   ÿÿ
ÿÿ
 ÿÿÿÿÿÿ   ÿÿÿïïï(((çççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ¿¿¿÷÷÷   333@@@@@@@
@@@@@@@@@@@@@@@@@@@@···ÿÿÿ‡‡‡@@@@@@333   šššÿÿÿ   ÿÿÿ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿ
ÿÿÿ
ÿÿÿ×××888ïïïÿÿÿÿÿÿÿÿÿ···PPP÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××(((ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××ÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿ
      ÿÿÿÿÿÿ   ÿÿÿ÷÷÷HHH¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ
ÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿HHH÷÷÷÷÷÷ÿÿÿ×××···PPP÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷```000ppp
                                    HHH000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿ
ÿÿÿ
ÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿ   ÿÿÿÿÿÿXXX§§§ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ———

hhhÿÿÿ   ÿÿÿ···ŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÏÏÏ   CCC
···÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿ
ÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿ   ÿÿÿ÷÷÷‡‡‡×××ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßßÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ×××ÿÿÿ(((ÿÿÿ   ŸŸŸ```÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ$$$ ÿÿ
ÿÿÿÿÿ
ßßßÿÿ
ÿÿÿÿÿÿÿ   PPP÷÷÷ÿÿÿ   ÿÿÿßßß———
```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿
¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿ‡‡‡```ÿÿÿ@@@ÿÿÿhhh   @@@×××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§×××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷hhhPPP÷÷÷ÿÿÿ000ÿÿÿÇ
ÇÇ   hhhÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```÷÷÷hhhÿÿÿ@@@ÇÇÇ888ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××000———
ÿÿÿÿÿÿ   ÿÿÿ§§§×××   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ@@@×××———ÿÿÿ
ïïï``````÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷×××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ———
000×××ÿÿÿÿÿÿÿÿÿÿÿÿÿ¦¦¦HHH‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ÿÿÿ
ÿÿÿßßßÿÿÿßßß:::                              ßßßÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ88
8ŸŸŸ¿¿¿ÿÿÿÇÇÇÿÿÿŸŸŸ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïïXXXhhh÷÷÷ÿÿ
ÿÿÿÿÿÿÿÿÿÿ···000···ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿ
ÿÿÿÿÿÿÿÿÏÏÏïïï¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÂÂÂÿÿÿ×××ÿÿÿ¿¿¿ÿÿÿçççÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿïïï``````èèèÿÿÿÿÿÿÿÿÿ×××888‡‡‡÷÷
÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ———
PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŽŽŽ***§§§ÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷×××HHHçççÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ000ÇÇÇÿÿÿÿÿÿÿÿÿ÷÷÷×××      ïïïÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿ÷÷÷   ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§§000FFF888ßßßÿÿÿÿÿÿÿÿÿ×××888‡‡‡ÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿ÿ
ÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß888‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿïïï
pppçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßß
ß   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷ŸŸŸ
XXXÏÏÏÿÿÿßßß@@@ßßßÿÿÿŸŸŸ000ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
```

ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ
ÿÿÿÿÿÿxxx@@@ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿiii
```ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷    ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiii
```ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß888FFF```÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ×
××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿000```çççÿÿÿÿÿÿÿÿÿÿÿÿÿ÷÷÷ŸŸŸ
XXX   iiiÿÿÿÿÿÿÿÿÿ   PPPÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ŸŸŸÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿¿hhh
pppçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiiippp###ŽŽŽÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿ
ÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ   pppçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ

   PPPŸŸŸßßß÷÷÷   ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿiii¯¯¯```   @@@———iiiÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿiii
   ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿ÷÷÷      XXX···ÿÿÿÿÿÿÿÿÿŸŸŸ```ÿÿÿ¯¯¯```       111---
¿¿¿÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßß
ÿÿÿÿÿÿÇÇÇ§§§ppp000   PPPŸŸŸçççÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ```      iiiÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ§§
§HHH      ßßßHHH···ÿÿÿÿÿÿÿÿÿÿÿÿÿçççç¢¢¢

444      @@@HHH                          XXX      888XXX   ÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿççç———
(((888ŸŸŸ÷÷÷ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ···ŸŸŸ&&&@@@@@@@@@@@@@@@@@@@@@@@@@@@pppÿÿÿÏÏÏ@@@@
@@000AAA×××@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ  ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßßppp-
   ‹‹‹ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ```ÿÿÿÿÿÿ¿¿¿···                          §§§---
ŸŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿçççç———
@@@   hhh×××ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÊÊÊ¿¿¿¿¿¿¿¿¿¿¿¿¿¿¿   ¿¿¿   ¿¿¿   ÏÏÏŸ
ŸŸiii¿¿¿¿¿¿»»»çççÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÂÂÂppp
000hhhŸŸŸßßßÿÿÿÿÿÿçççÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿçççÏÏÏÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿççç§§§ppp888   hhh¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
iiiÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÏÏÏ———```

@@@   ‡‡‡¿¿¿ÏÏÏÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿÿÿ×××¿¿¿      HHH
XXX   ÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ```ÿÿÿ   ÿÿÿ
ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÇÇÇ¿¿¿   xxx@@@000        (((@@@@@@@@@@@@000        (((@@@ppp
···ßßßÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ¿¿
¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿ¿¿¿ÿÿÿÏÏÏÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ×××¿¿¿¿¿¿¿¿¿¿¿¿ÏÏÏÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿ
ÿÿÑÑÑppp'''@@@@@@@@@@@@@@@@@@@@@@@@@@@ŸŸŸÿÿÿŸŸŸ@@@@@@((( ]]]ßßß@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ   ÿÿÿ   ÿÿ
ÿ   ÿÿÿ   ÿÿÿÿÿÿÃÃÃ___¿¿¿___¿¿¿___¿¿¿___¿¿¿___ßßß   ßßß___¿¿¿¼¼¼ÿÿÿßßßÿÿÿ   ÿÿÿŸ
ŸŸÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ···ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿßßßÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿÿÿ   ÿ
ÿÿ   ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿ
ÿ@@@ÿÿÿ@@@ÿÿÿ‡‡‡ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ@@
@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿ
ÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ@@@ÿÿÿ
@@@ÿÿÿ@@@ÿÿÿÇÇÇÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ

ÿÿÿ

ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ

ýÿÿÿ‚ ƒ „ … † ‡ ˆ ‰ Š ‹ Œ Ž
‘ ’ “ ” • – —
˜ ™ š › œ ž Ÿ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª «
¬ - ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾ ¿
À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í þÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿVisio (TM) Drawing
Ý˜ „ dAó q— l R ídêñ éòÿÿƒ ÿöòÿóûð øñ ‰€êñ €
€ÿ ÀÀÀ æææÿ ÍÍÍ ³³³ï ššš! € fÿff MMM 3 33
õ ëðÿòð 8èóúô áúöñêñõ ãø

ëð  T ÿZ    Ari³al@ :   N  ÿ   Wingd¢z s@ v éò N Pû  u Monotÿype
Sortê   çô m     Symbol 5Tëð?èóÐ?òÿ  Úêñ èóY@      -
 1   U ëðÿòð ëð èó úô  ëðöñêñJçô :ëðDëð  T1 èó€òñE W òñàû- êñhêçô

ëðPëð T… ëð8ßüŒ Œ æõ ®‘ * ªëð ëð ëð
ëð
ªëð

ëð ëð“ãø.žÀ U  º ß  _ b  þ
ù  Û  a þé…¸ êñ™ü 0z ¿®Gáz„?¶ @ æõ¿  3  ‘ C  É  f  R  bU  |  |
| Y  f  !‘ †¼  êñ•ü k 4 ï  { Š  |  © f  ”Ò f  J, J,Ñ ‡ À êñéü K ëð—
/©&œ4 ©$à? Æ òðï¡Aó f ©&‰  ä,  ä, ä'0/B%Á&S$Ê&TÁ }  |
@&
Ò  y àü
¹  }  { } +)} ©» Y?k2ª
|

ª|  |  |  |  J|  | ¤È êñí ?™ý %Ù  - '  ¢£E £E, '  £E
£E £E - û? N2ORDJ`} '  £E £EU £E £E £E £EU £E - „  €O 4 £Ð êñFü ’AªY ›;
'Q  ÎV ÎV B'Q§Ô b §TÆY·Ø  êñ÷ü  R (oR #  :oWo '
|`Pþ#  Š f  l  ‡ b ï6Ð`d# l  * l
l
½Ü êñý±€Yð?ˆ ˆ @•?ˆ\  î#Ò ?5 m|  J, J, J,I/‘ RêB¾à êñQü  N

¡ ¯M ÀE1„ÏA ¿ä êñæ€_c 3 O ¯OÁOÓOåO O-
O _CO UOgIÀè 2r» U…» VR À?Z ÐkžØ}ž a˜sU£‘å¡–e ÃŸ s … — © » Í ß ñ ý ”f –
‰ R ¬ l–‰ Ÿ¬ ~–ª‰ ¿¬ ¬ ¬ I ¢•‰ ÿ§ | U | | | i¸ €» úñ” | ³
4 êñ”rãøÌR d ' 0£’ UÅK Xy²?Ä?Ö4§zAðt ì2T#œ¶& ç•U ç•
ç•
ç•

-
*y£0¾{ Ò j¼ I¿ [¿ãøè æõÈ…·©/®Æ›!3ÁÂó¿=Æ=Æ ‘D×/é/û/þ Q‹pÁÄ ? ¨d=Ì =Çç4 „½ 'QkÀ
_ÏqÏãøˆ ãø YÆU| % » 1 áß€çÒÃ õÝàûà „ - ( ‘ f p €Ù» ï %éò-=-
]i[ Â·Ü A#é Tä *Ç²„)›‘/ 3ÿâùÁ/Ó/ñÏ ß
?Ð?@â2WÁE¿ ß Ï£ÖS›Ï ¿ÏÑÇ} ÞÉç7ÄÑ[Å€ÐßÕ… ôß ï1 #åmÑ$ 0çI…¤ÕmÑ-
ÈÕfïxï Šïœï®ïÀïÒïäïöï ÿ ÁÔmÕt Úà Ö ò ± ér cð2åôUj ô
À *< ñ¿ óU27 Çq¬ ¬?«/½&@¿ Zÿlþ½&†ôø, ø, ø'ÄÑ+áÌß×-
” ¦ ï§ÒwQ=Á3ä6á ¹wQ öyZé+áwAW/i/{/<2§ÒG¥$Bèÿ î¥p \ò$®û b F … —©-
ûq¥/·#" ãTÕ/lý =Ì AÜ ¤Kè(!ì0G)Q ¿ ê” D,Ø1¨Ñæ!ì0›U~_ ÕŸ0…`Qó” @¿Üÿîÿ v»=…¹9
B–´[• ‹hBäú´€¦ÉeX Ñ P ãYNâŸT Üÿáú ÿ ÿÿœ ¸ ¿?€ éòdÞ-
X - X ~êñLetter ðO
\ áú” . ÿHP LaserÿJet 1200ÿ Series ßPCL 6åö ÿ2 & † xœÿePË. @ =ÿgnk¨–
.( ÿB¼Yô *)‹ÿ~ ÊÚB { ÿÝ ñèR$µ±ÿ ±ó
Øó=¬ÿ¼ÕLK7îâœÿ{Îœ›;3Õêÿÿ‌rÄ&¯ h‡ÿuè - -9©ÿK

6K §NÓÿæh ÔIê Iÿ 0‹Ê õ þÿ8H@;YsôÉÿ(jž¾#6ú€ÿ@3ÌGZf
Zÿ¦®1ª•–²–ÿZ ÊZgð{qÿ´²O„  ˆÿ¼ÅgX,v&ÒÿÅuØ
ô
ú
ÿ ¥½Â> ß°ÿ~jŽ:@ £ ÿR2Ü€öÐ²´ÿ^Ê=  »£ŽÿÓ¼“ OÒþ6ÿ.òCM nâ ÿ v âð[õüÿ_ ìDÛ¾iÛÿú
èôT´àtÁÿYÑÉ¥\c÷=ÿ¦“íôE; ¶ÿ¼¡ RdÙÉbÿ€Ê õ\¢_bÿ –¢vSÓl>ÿz››|@è  '

I  | ÷  / / -
/?/Q/c/u/‡/™/«/ ½/Ï/á/ó/ ? ?)?;? M?_?q?ƒ?•?§?¹?Ë? Ý?ï? O O%O7K} ëð
ëðÿ
Displa yçôàB 4ëð(Üÿ
  Ýãëð  ãøüÿÿéÿ$ “  Ùÿ
 æõè?éòp =@éòˆ @ Üÿñð>< g  ïòM 0_ q ƒ ãø=*  ´  Æ
ÕNëð(ëð ëð  C  Üÿèóýñýõ*ëðÿ 0ó w  JëðC  U ëðÿòð†ëðPèóüúôñò  Ò
  (vàûè?éòp @éòƒˆ * 7_çôöñêñFêçô ëðDëð  T e ] òñy
  àûÔa êñhZ  ^ T ¢ëð ¡ ¯ êñ ëð’zãø”ëð  UAèóÛ&@  !@"  Àm?  ¿Ièóð?* àã GYk-
ë ÷ ¯  ^  þ›ì êñ‘  2 - Ãð?¿ ´  ë Ï q  ° ï  ^ Ë ua `Ä éò þjò  ø  " u

)eì " 0Å Ë âù© C$ç =ëð
Ì >¢ëðƒãø}! {ëðHPéò‰!ž •$vëðG¡&@Ï •$‰!½'}!‘(„º*Dy!‘()º*…!‘(… &„ !ï 46k † … ï
ôZ= !h=å
?1ë ¸ ï Å N1~=ž êñš òæõ!ï ª Û-T²ûDÛÆ rY1PßÂí?@Úæ2 @âí4ýõ5ë8ã À $¬ó Á5 Á5
.F
¾ / à? þ)B ’/F 9FhF
'/^B Æ^ t/!T1’M tP !¨OŒ £MðšE ½GJZ3ï`@lì À UË ÄÝ ï ‰ãø !
› °§ Nö=yV^pVý? MB SM²MB Mò "b MB MMOÉV-#JØR

-  Å åöjIT ¢?´?ãø•ãø* PQf)6ƒo!3Ÿbó¿J!éò®§f  þ‹  * i K4=oOoô

æõ#ygä÷  ' 2 Çq$p ¼"  € $a ??Q? c?u?‡?™?ÙoëoÏ?ª ¿\õÅ^Î
Æ ý_ÚC.+ Æ ÜkU)!tUõsàüuÝ Mó_@³VŒN)Ca ü Y…
X†“
 cCY† c†|†
]  M± ;«€á´Oÿ 8?,R žÞ ÎO_ž_™FðHß‡ _ _ )_;_M__X Žô}w– † íž_°_Â_Ô_¨Ÿø_
o  o.o£ µ dovo}_šo ¬o¾o;_M_ôo    *|

J“?~  ó!X h z  xµ”y !)AÈ

ßü7µèç a Ïy

Þ47’ÝÿÆRU @@ŽñÿÝ¤)÷     @@žŸƒýßa7w ® ‘úü²ÍÐ P÷ E‡ï-ãË¿f ˆ -ìÌ“-°`u}
` äßb   uRp`uí
:Æ €‰ @þ"²^  CÈ3È€ VÁ ¨ “9Á3Â >Á {Ã €HÂCÂŒÄò 7¥ /Å— ¨ ""/YG › -Þ4ŒÿQ ªéŒ
@@ÿØ Ôq4\
@ÿ@âÒªã»  ÿ@@DSç×-’G    @ ¡²®È¯Ç °ÆÀ.Ó6¦=ßOÖÕÇbß  … )B }ß Ù·Hó!
 ïe <P‹ÚšK~ÊÒƒù³q,›åŒþÊÒk”O~ËúÝüÌ‹ÊÒJqÇ21 ð_A-1°
      ´0z ® Gáz„" Á¢%˜Á¢€ •ž· ’-¿¿¿a >ŸU/   Š› *§é
       ŸŸ !‹- ¾å Ã È ×ïåC3¡Y…Ò¯ä¯c¯u¯ wÿ™¯«¯½¦ !J³=¿O¿ a¿s¿…¿—
¿pï,ïÍ¿ß·ÿ0^"háÌ @ÿ@ÿ )Dº¸ ÿ@@-“>h‰FÕãÐ ˆ Ó ÈãU?é½

Â À'Ï9Ï KÏ]ÏoÏ Ï“Ï¥ÈÊ¥¸ÏàÊÉ< ßÏñÏÞ4 ^BÿÙ@æ @@ê5ÿ%1Gµ @@¢ß¼ î g"Ð ø-
,o.¼ ,Ö< ;  < RÔÁÓ-a î˜Öø  / )¿ÝÆÀUTäù>±†ÞØ×ù< û"ßðß
JLpXófAËŒÊÒê [¾'«¥Ü$ï6ï IíHq ]ïoïF “ï¥ï·ïÉïÛï íïd‘™  c?&ÿ8ÿJÿ \ÿnÿ O’ÿ¤ÿ¶ú=q=
O nF:‘|I  Œ
  ™4 è Ÿ,ŸÏyùa”/2ýïi&÷óópL Hÿ¯Qú?@ ¦Îÿ¯=äæ?@Ø- tR UÖ U² †1q$€ 6 SA@ÆÍGVk-
ä‡ ˆ ×  ’

Mì² ÿ Ý‘1òpóâ¶Ì  - ±³æ  û°H xºÕP€ÄÊÑB5
¿B2 1  €Lâ  • 0Dù$ÁA  ¹-a-
aQ  bASA(? P‘>9 ÁN?rÒ¢?w1µŸ w=’e V£oª;Ãow5  _ån Uþo_ ®7{1Ï5’n I µom {1¢E’o÷o¯ ô
 ~ © $«Geneÿral popu?lation2¯É? Û?í?ÿ? O#O5OÂ¯a  s ø¯ o ¿.¶-aÇÿÙÿ ëÿ‰O  ! 3

?W Ý¹¿ÀðQÎz–œ *ÿ}Vîûµ @@ ±'QÐùlà Èõ° ¢Ð È¨™dD ÖŸý&ÏÄ Ö è ú

-¤É-aK_]]Ð¦v_ü} Ô
  ÞJß~œ fq.Ã ¯¥ ¿wÈ$¾ªMœ î?ˆ~ ð¼ ,ÖÐ¦ Ï§ Ð¦RÔU¿g¾õ§,¿ð˜Ö ¿¯¹¿Ý·–Aoû/8a/
T 2÷Æ= {/  K ÏÀëà«ïÖž(B  µ—{!ÕÑ³/Å/×/ é/û/ÚŸ?1?C?U?û  y?ÿá-£!¨÷Ï²?ò  Ÿ@ƒ • —
ß¹ Ë ¶ú PO bOtO†O˜OªO¼OÎOàOþòHÔ¶4 a&Ñÿ?@D.+ Jxÿë?@ÀÖâçõ+£Û UÒ¡åË W2_ 9 ãÑÔ¯]]Ûæÿ
¯ˆ_¦  žØ‰ Ø‰Ý¤_ÿ ÊIJIKGÀô¾_ÐTÃØ_
 Ù^ Sj<Êò_ o o(o :oLo^o¼Ï,oàÏò      Ün£æ7 [ [ ,    ¬å’ ¤ u " ™vã O  Æ  2 =O
ŽüÑ5ˆ RomaR ]ßoß ß “ß¥ß·ßÉßâ çù Ÿ –ÿ<ŸN–YáçßùßÏ ïÀ/ïAïSïeïwï‰åÛ-ÿT²DÛð?@Æ_@ o4u PÚ R â X 3²à*_<XS1ßïà]]Õ6
ÿ ÿ´PÅNì ÄNìä8ÿ MÆ_lÿÿ ÉÀÓ-ùaÑ †ÿ˜ÿªÿ¼ÿÎÿàÿòÿ     t†˜± Ün 61_ ï U_À yXœ –_T -
 ‘ Þ_J_[ o-_8oJoz!  2‹TB pM€ entsØ}/ /

/  /2/D/V/h/èoúož/H OÂ/N–  ¸Då, õ/  ? ?¶F®ŸÀŸ™ÏäŸx?ÿ@æÛ2Ô_hßÿ?@< äøë¾ÿÜ?@¸ ¹

Ü ûpä¡àA ûº7 ²à¢ƒÔ©…ÄïË¢ÞqÙ?àæ-Ú† O OHðbÀ¸ïL éÎ2O ÇÞß‡9ÓÏÍLO çß  !í–kÿ
 ‹-.0*fÓ€O”’O¤L‡ ØG cÈt¬a?ËŸÝ–
ÖÃ1tà?AÐ à €ïAºx³OÅO×O éOûO _ko}o o¡og_ U¡‡ ¯é_´¯º_Ø¨«… ë¯ý¯ o{¯-
 6¿¢¯Z¿@`o…¯ê¯¢¿¨oÀr-Æ ÿFamily o f Îimqh D1y kŽà5…¤qÖÅ° Â  ÿ -
 Ùbð!KÏ]Ï2ˆ qB~Åd- ýÏB Tyýauå÷˜À U’ Õ? þý
A1 `  þk Þ$¸ÏÊÏ2ˆˆ{ÈãÑŠÅÃ  å!TÑð!å,  ˆ‘ý  -
 uÕ9 K ] üo ,ì ]tÑE{ÿ @@ å¬ïÚ¯Ü @@dâ%¨€  ýrûí Í?vä º€€ã½Ä ×áTÑÞ ñíà¯æ  ŸJGnCˆ‘

t áXoieFTC òÎ?.Ó OO¢7› ò 5ªéówÎá ›þ ò SC]×ÎÜú¼°…{Ï0z ®G§áz„ Ô&  öp  gsˆ‘ Å”Ÿ¦Ÿ ¯
$¯6¯ H¯Z¯l¯Ê¿Ü¿î¿ ÏÆ¯ UvçA H¿e  ¿‰ €å œ ® b¿, '`ç S
@¿¿6 › S Ï–Â ËÿEx-priso nerAÇu ‡ ™  Ï®“É8ŽãG ¸Ï+
 ´ßð/{)=á‰-øß
ï ïÈ.ï@ï È

·  a ˆÿç§á‹ù?@(ÿ– Ï:Rî?@?ªJ  ùV ‘0„ ú 3à’ P:”f ï8 Ç¿’ ˆ -ÚjBuÒ `uTÐ` ¿äb  uu
`Ùu\ a4 €CÐ@þe"cÑ h8X8€ ¿ñQ ò ^1X2 c1  3  m2h2±4Ôƒ\!³ïð ¨Õ6ÞïJB ^ø- 4ÎÿK-…
pñ?@¿´Æf+{¬&0 ÿâ åÛÓ @@ çžiG KëA  Ç!Ó8Ô7 Õ6SC["^O pJú7‡O¬ÐTB ¢O´IþT ¶ûîa®YÝþkŸ
 ëc(ïñýï Ÿ +(çÎéùí?ö?˜ÈÝ°Œ7A  ‘]ñ Åiÿ˜À  ø dÑ o!ÃõÃ'ÕòÒ/ä/,fÑ

U "
*}Xt —s ãU >ü_ Úa fÑó / ß ß$ß `~ï-
go /%/ ÏË ˜R bÑd/v/ßßš/q ·)fÑ„ü ôd š\wS#‹QïUÿ@†ì+›iiøÿ?@kÅuf©vÿÚ?@>ë£özÿ å?@8ÂGØ
W³VÆ …Õ …¶™ï Ö ™QÙ?ð M† O ŸG -Å„ÑtÌ/_ÿ [Xì³Ý+çþQŸ 6%ÄvW ý¸ûO ¯
Çøy þ„Ÿ¡ÿ³ÿÅÿ×ÿéÿûÿ À_ ä_ ¡º y † ©Ÿù ÍŸÊ ñ˜-… ¯ ¯ ”Ÿ†°O¯»Ÿs¯pžŸà ¯»¯¸-
hSÐ tre{me1Àpoorão
õo + = ¯Æ]¿€o¿}o o¡o³oÅo×jG@ª°nqbÑdqat©± Ëß †/‘ Ø“¦´»%Ê¿Ü¿¢¸òïy9fÐ-
k&‡>ÿ‘Â @@` „ÿ7šÚ @@Û-ïT²DÛG@rY1PÂý? Ô&0 Ó9í7†¹²À °ªânq Qƒ M†˜RÊGÆ²f×Êré³f{Ö
ØÆ Ö ØÆ¢£Ö ¬Áé³·Ö Ue Tf éµ è¶9d\Ž*CÒ IÖ M† M†ú2¤Æ²,ç {Ö@ç Ö ª Ö £Ö £Ö
·Ö ª·Ö ËÖ ËÖ ßÖ òßÖ } ñï ùßYƒ¨=Ð

ÿ ù¿ò¢)²¿Ò&ÿ ?úRgd, ?ÿQð¿)7Ã′

ÞÕ e ´$Ëq8ÁÇ'¦¦´ËqËu€£Ñ3‘¬Áhq-QUe©±ƒ ¢¸^0, ™Q]qˆóE–ô \!¡÷/µ–ôËq¡÷-U–ô  Ñ¡÷ËÅ–
ô£Ñ¡÷¬Å–ô YuˆóV•–ôf‘¡÷£Ñ’ø ·!¡óQoÆÏØÏø¿
Ï Ï .Ï@Ïáo  “ ˆ¿š¿¬¿ T!+±  ÑÓ \r+±Y  gpÏ1xÏˆÏ– ¨ º Ì üÞ ð @Å@
o4ÿuã?@üÚC./+ Ð??$óG%80 @.4ÜÏ3+±Q ë=Š&|  Ž Ï1Å-²ƒÛ/çEõ(k¡€þH <LQ-
EX_ý Z Ð ? mp{P]q+Ÿ=ŸOŸ aŸsŸ…Ÿ `å¯÷¯  ¿h"-G,‘
ª  (F  ßŸ>%X ì?a¯ O2¯ TH[%gOyO{¯à¯Ÿ ²OHþ?ÖOØ©2Ü?ð  ¦2)rí –ðþbR hSö  +¹~ r  -
š ¬ Ç  Ð â ô Ã¿¯_Á_<N `]qbQ–¨} ÌÞ ð áa$<g‘{iÅ3›?Þ,/U@³b
Ñä?Ë@éI"ÑG%)Ð ¦ Î¯=ä$€[&ms6  H,bQŽ/c œv¹/Ë/º€ÇI’$òp öï(ñðü  ?  ·mÛ¶·mÛÖ ?
Z@,ê ø
Ÿ œ81/µD?ç:c4 ˜¡n?€?’?¤?¶?È?óO _O _ƒOBOUcw.ŸÄO RŸ•Ov˜mu‰Ÿ›ŸÞO Ÿ Ÿ ÔŸ@ŸøŸØ¯#Ÿˆ Ÿ@¯
ô ¿,b6  Romaÿ Health ÿMediatorÿs / Peer-Ï¥EducÛ¢ @o Rodovoˆo À¿
¿ ¿Ð_ â_ô_ o oPÆ2AvñaÏ ºo¾—Ïz¸ñ / /'.ùIí m¡ Ä“adýÊ Ð–
%¼‘Ã @¨Oc/4ÜCñ  2A sœvaR‰ÓŠ&‘ íß ÅçëÂƒ"Æsœv œv¯'ð7B³ïÅï×ålÅ¾-÷E¿Âæï
Z ˆï@ç0´ ÿ ŒæÏøýe-åæ"ø a †ñSõ3ñ8?J?ž  7õ`ÏrÏb‰‡ÿl¡bQ¡ÿ –ô€Ql r¿„¿–
¿¨¿åï Ì¿Þ¿ü £ïµï&¿8¿J¿ ’k  ”¨l  Ï'Ï9Ï ì ßõûm1ïCêßù: k£ÿxg -Ï
@ @íò÷HÜ ¶À¿ØJ%K´ ~ _ > Yàþn?]
ÈÀ^h ^t/†!žñ  à -– Ë ¸ß=€Ý=|ï½W Àžÿÿÿÿÿÿÿÿÿÿÿÿß -  ßÄ%#‡C¸ß `¿§ÇXÍÝØÒß
?üï¼(rðëÕ~  è  í Á° Â Ô 0ö ë ó  –QÐd‘ Ÿá y án.¯“¯R¬FMå´¶ÏQ æw þ œ -
µ~¥@åñŸí” ‘À™Mï / / ¯Š(G÷Ÿs*Þýé Ÿä“¹? ²³-
éh/]˜ a-^ ž/æŸÂ/šï?ÿQÿ@ÐïâïôÏ ÿ ÿ£ô g´ ¨n·ÿÉÿÛÿ,1‘5ûo  è 1 ~ô

Ä,•, Ñ¶ü @@ ²ÀÿÑ´ @@‹Ü OåYPøï'ÔDèï'ÿPK»a g¬Ý]¿ ¡ˆ -o,u‡@û`umP` äb ¯ u Q
V ]€žð@þ"è X: X€ @@þ O3 Q* R Q US "R R fT–s Aš ²}ŠVÅ × õ Kˆ- Ä—
¤å}ÿÏD @@¨ókÿ ¹l @@À…ÿs$ž´ @@€ÿ Þhêü @ {BˆX‰W ŠV c B o %j¯W<oPÐ b Woiiþ»ÝM–
n:¥ âþ' ž:¡Ú-„ýÝÙ Ò§'XžûÍçó LÄà- bª, DVEå-Ps dw xGŒ ‡O™Oë Å-
× ™*j¯ø4"Ó-..) ˜uÕN± t?†?˜?ª?¼? Q à?ò?$ÿ ! Zÿlÿ*~ør‰òÁ û (4 N +O=OOO(8lI-
ï?ïü„Ï;

¼ÑÔùµ  äÒÇ·”ôÀÈ¸ž  îÀ
‘Ž_¬  ¦¹_× ÚÓ#‘ Ñ ÀÓS¯¤Õm¨`1Ü ‡¬ ïß ï€òÐ?s r wá€zŒž¦FK‘½Ï  Š{`™ ó/²/ =  –-
ü²  ¶ ./¶• Ð d¿V?^¿º±…-Êžß¿ ñ¿Ê/‰/8 *Ïv¿NÏ'9q2T¿„…SÑ  r¡
 PþÚÂ àÃŠ€gÑPå  ¦ƒ|ö  ¯ . @  [ d v ^ aÄ ß.ßÅ (× }ù óÀ û
Ÿ Ÿ 7é¯ÑEéKŸ]ŸvOO a ø¡Ÿ³ŸÅ’–›.hpß(ï?@Bè Jx ËÚåßãå»ì– ‘  á ¯¬  ö1¯C¯o¯g¯žy¯
Û¶mžñ“¯  9Žã8Žãè-¯@¿¯§wÛ¤ÆÁ*A”• ëß<?ÒŽá  €L0Qæ¯ ø¯
¿ ¿.¿@¿kÏ×¿ Ï û¿º¿UÛç¦ <ÏÊ  Ï î åå  VÏ‘ 8 L ¸ p'?›  ¸Ñ øÉü³Ô÷ÕNurse ûCaF
Manag ers ß¸ßÊßIß[ß mß ß‘ß£ße/w/Ùß  ýß ’G?01á†
A D >1(O3ŸSïl5<3i•ò/è ?78¶éI¼Dù® ã”5 ýW ÏÉïíœ 8…R1á ó ö â c ¦
  ’ c-ÿVñEB KF  ö  ö'§¯²±CDÿVöþÒh•% `mLÃþäo
Z ^@ç0ù´qû¤b†¬( , 7ê°oöhe«èuŸ‡Ÿ  (ƒ78åÀä  á á,S ,% T
‘›S  È?Ú? / Ÿ/±/Ã/Õ/– Í_ß_ ? /?A? •}A†
îdaz? Š?Yï† eŸW_i_›Ÿ¿èÿ „7š:¿å?S@DæåpsõwuÛ€u vxíŸÿ }A ÿ -ºvCÿ UýdaiÿËq
 ‘õ%^’¬ ?ŒÂÿÂ¯Ô¯( : L ^  p , R¿ò / /š³Äq ¤¹X–¹¿mv^p Ÿ^@Ÿ /„˜‹u—Ÿ©ŸxÝ-
 À âŸ.Ÿ ¯³Ï Ÿ×ÏéÌ¾_ couoô_ o o*o<oNoà¿¯Ñ¯„o–o¨b Çq
Ÿ°¼
ë  ïÕo=ïOï€aïsï…ï—ï©ïa s|ê
 BñmÎáwuýï ò´± ¾ *ý°Æé û '  1 üÖO Ö6”×P^C ée w ãÿõÿ  ¡  ³ Å × é … y¯’ŸJ¯ ¶Ÿß

xÆBïôŸfïÅŸŠè yu ï¯ï

¯-ï2¦îïZï _¯$ÿ=ïHÿZÿ#.-t¡eÿCommunitÿy Health
C"U/S¿e¿ä¯ö¯ ¿  ¿,¿å/  t¿†¿˜¿ Q7  c?Î¿îo™?«?‘ ø£ á?ó;›É¡O¤ÿþ @@¡©ók  ¹ @ØŸeÏ6O
-À i ´Ã°Æ³²wG- ºv|O ŽHë  °Æ °Æßwg’øÅO:ß7U FäväûóÄøO —Ì½ ÷}N± _ v(M÷!= +_  qH-
OàoüãF_0 B  |_ŽV´±›_ T !¸_b t' 9 ©?] o :¿g? y?· É Û ´k 7Ä¼¼  %7ø2£E Ï!Ïè3ÏEÏ¢d

š  ›çÿf ! @@äQÿÎÅyÏ @@”? 3 ›^ò“ç%Týâ“çP ° ‘¤w< ÀUqˆ -,"íuØ@`u  ` ä¿b  u `Q
®eV € ÀÑ"Eq

nX^X€ ÀÑ´±öàdQ*^R iQ ¦S sRnR ·T´sbA´ÏÐ}ÛVßÏ
Òõ †8-š  ÙZüÿ¼F @@&á ÷¦Îo°  ]tÑÿEû @@¢Â

?å$/

@ ÌBÙX ÚW ÛVYcaBdovj gˆ oJ Zb ¨oºiµ-´¿Ÿp’ÀcçÌ/ ?¥£r=IÎå! -
?ùË×ƒq@ v ( ™°oå°Áá[Ô ˜Õjß~ñ€Ø –
ÄÕÀÉGÖÒØOêOb1 ïU ý‹*~ÿÜ4 # þxééu &^ ó^? O O”?¦? ¸?Ê?Ü?gDµ!fOxOŠO œO®OÀOÒO«
öO YGbý› PÄf2p3yÿ
@@Û:àµ ñT,Y²“>YDòf` I< Q_c_u_‡_™_ «_½_ÏYµ!ß_ÆÍg¦
oô o™™{;` îv ÷?

Ed» @@ ‰ßíR'× Wf g¦f§ g¦}dì¯þ®Œ§à ¿Ãf4¿F¹µ-E1¢÷3^–  9 ßÄ º÷â  ÛßÜÎKnù4
IŠ ^ÌLßO  a s~d… —
nŸ» Í  ß ñ @  vÄ²žŽÏQ  c u ‡ ™ .ß½ Ï áŠ9 rôöŒ  Ÿ Ÿ€,ŸrøI™ñ/ ?@Ì  ùþvÄV

”ðFSêÿ?@Ø-rY1P
Ò?'äú/å>P(îÖ  ÕSzÑk¯}-ræ–¯|'Ô# “Ñv-º#Ãiž%Ýè ñ (À÷ìÞ±

Õê¿,  PÐ?  p€q;1 Å [Ô$ÄöÁ B ^ñ^ñ| »ÑúÁÍÑSÏ
U gË`vÏaÕÍÏ¢ÁÂ|â  ©¢ÁûRyÖ

ûR  ¦ÉÊñ$ç@à ÔÿÕËôÿ¢Å»Õ6

CåO  a ÙÇ¦ÁúÅ6 Ëöš æÿH¾ ¦ÁÍÕ2ÄÿaÕ äÂ)rëÁ: þJ  P â0

8 ðÃ VãÁõ?ùÏ
ß ß8ßAßSßà?˜ Œ ž O/OAOSL#!~ß ß §&-
!µ)»ßÍßSŸ,Ï>Ïø ï#ï5â „7š:ÿ¿õ?@Ž¦Î¯W=äÖJ5åS5Æ\æ ZAiæ#!vï}-„6¡ï³ïÐßï×ïéï¢¤ä ÿ
§?7½éMoê ÿ/ÿ „ÇKô6 ‘ å¡!^,¯ -þ! €L ¡Vÿhÿ zÿŒÿžÿ°ÿÛ G ÿ k * UK7 _¬ :_} ^X U5q_
ƒ_Æ _ƒÀ¼_(_€à_# _j_"oùþh 7þu Generalÿ Practitûioµ`s / Fÿamily Meÿdicine N-
ursesƒ(/:/ ¹ËÝï / /ðo ÐI/uOm/ "GqF ý ú„
3 Ÿ¥ßÅ/
5ˆA ç%} ˜Œ™I™”nÿ-~^?Î
@@>2â @@U;ïMï _ê8b¢¡!ˆ3„6L,\³@ræyÒ\³Ž?ƒ¡Ð, Ö† „6 „6—ç <“´?üÆ6¯¸VG/ "]ýÉÁ¿ -
fRnQó ·á;Ï²Xùü-÷œÓÙ ¿ ÿqE ßÁóŒ±e 8åß÷ß
xƒ´H: TaM ! £ u ¤zÑ&£ãÏS e * < N ` $-
4 , ý ! Çß/ñ/ ? ?ú´H

…„ï5Å6rÿ¦

@@l4u~ÿí  @@ `ú7 Î…fX@ ¥²d0þ·EP³|{¸ !»ñ¿8±ˆ - òuöV°`u  ` äb_  u Þ±
ã¶W € ”A"J¡ ì¸ Ü¸€ ”A ÇSâ±Ü²  ç± $Ã ñ²ì²5Ä€~3à¡ˆ?ˆíYÆ³?Å2 úq¨-…„äbª Èÿ

@@0PÂ ÿMÝ @@} ðÿ(Ž  @@yÈ eÅ@I
@ J² WÈXÇ YÆ×Ãß¢âÏôÊ ~Ç
ß5 ØÂ &ß8Ù   \X´WT
Û·Ÿÿ œK`ÈŒ,æþiŸ
¯¨’Ôÿ2_üú<‘’I_ïÉ‘ @Æ12A å>O>øK¡ `E€˜EG·ªBV¿h¿M¡ãOU  µû*RoÇ¤ “qnLY gå¶³fY ï òI¯[¯m
¯@ ¯‘¯£¯µ¯Ç¯å¤éä  .pú¯

¿-¿éè;¿M¿Ð&ïq¿ƒ¼ óÇJ0=ä_²b Ä?  ß«¸  óÏ½¸÷ùÔ¿æ¿ø¿
Ï  Ï.Ï@ÏRÄlñ]Ïš=å °ˆÏšÏ…„n °¿& Û % ÖÅå ä  å ûÄj |-
 —AÖ²Ä ä8…ñÿ  ;± ;±£ù¿€Úÿ H Œ´có â™Ûÿ Ù‰ Ø ‰ Ð³Û ,ÐßâßôßÏ ïïÿ<ïNï`ïrï„ï –ï  6

?ÏïáïóÏ ÿ  ÿ¬?;ÿMÿlzæow?  €¯ Á Ó|è¡ ‘pÿ
@' †ÿ˜ÿªÿ¼ÿÎÿ§/¹/  ¼Šµ—SÙ?@  bÆ gUà«¸—SÐI [ m    ‘ £ µ Ç MÉ ‘é àû ÞV &-
8 Â?@  !Z€ä?gÖÅÞVÝW  ÞVûÄcoun g oAÖP«o½i†˜~A ÿ“ä™ÛþøboœY/¢‡×ð Ûøo£•,rš ËH'
©´Y/k/ ~-
îq ’/¤/èOÈ/Ú/ì/þ/ ? "?ðw/X  [? O O‘? £?¥ Ç?Ù?ë?c u !O 3OEOWK!  jOƒÿ}• õ ‹™¦Ob‘¼O
ÎO§ òOúËxùítñüÚC.ÿ«ï?@Ø-rYk1P>`ê ¡+ñ ¥ÅÒ ¥á §LU]A À  SÃ^‘â_ô]Z¦ obþ(-
Á¾ t!åø?/Oˆô Y¯KÇ  }ã ÛÅ¨ÌÕ……a øz ‹ Š%§ÑYu 1Ÿ…,Ô‘O  €L„Q‹u Ò„ ›t ‘Ø™v±v±ì –A ‘

b‘Ê U Þ{óqð ¶’ D  d¢  i  Ûµ"¦ ì¿L‹

Ï …Ÿ•.Î+¥GÏ YÏP‡  •Û¾’Ïþ¿¶Ï@  ±•Û¿@ÏøÏdÎ

VxüÉ” ÅDirectÿly Obserÿved
Trea?tment Z ñ  Ÿ, ” ¯  ¸ Ê Ü ¹Ô -ß¿ß Ÿ+Ÿ=ŸVLˆQbŸ {O†Ÿ˜ŸªŸ¼ŸÎŸàŸòŸê ©ûÈâò ¨u~í !
— ð)¨mó/P=¯ O¢d¯  Š¯  ˆQ^£Ä  Ñö !}–¬@x û  >áÎ¶¬öøÐ¦

x b'vI X%

¿-¿0¿ B¿T¿f¿x¿Š¿œ¿®¿À¿ Ò¿0ßBßTß Ï Çmö7 ¤Ï[uÏ  åÏœ     ßÈÏ ÚÏäP ß /3-
>/P/újÝ%{ÛHealtÿh Educatÿion & Pr omoà!¤ßIï[ïÚß ìßþß ï"ï4ïÿ/ ?jï –
 Žï\FÇ3¯î ˆ Èï ”Oêï6E ÿ ÿ(ÿ:ÿ_\ÿ¬[™rP» @ÿ@<}dL1)      ÿ@@ÃYÅ\å Õã0XËºBÓBX®î?JÏÐ
Æ¿U_g_ y_‹_ _¯_Á_ÓXÇ1^¯àô]nV‰¯-
o1dâÒªÿã»  @@DSïç×-’¶@çM]ÿóÂç @@4§?áÀCÀ @[enV mW nV€dó_ n“W oàÆf;oMiÔ¨‰
k”ŸO~ËúÝë«ˆbJŸqÇ21 œ¬ˆbŠ?HYTX@á·«ˆb àX
 õ/ßR  b  u | ‡ ™ tO½  Ï á y/B g|uËC¿H • T  ?¢?!?3?5 W? i?ä†f‘ cû? O-
O1OÀCOUO. @ ‹O G},ïLklâ-@  %÷¼Ñ$ÎP¼>ì‹WËoöÀH½F’æÒH z  9+ŸîäO öO _ _,_>_P_bYì Àr_
p-ú– _¯_ Dõ±ÿ0-±‰

@@0ŸPÂ MÝàP“ó ÿ@@ÇeÅ@
êVú–ù— ú– d ¯€‘®§¬¯VfÇ¯Ù©}mžßôÙw)l“o  œK`ÈŒ,æ®o  q #ï ÓÇoÿ

TÉÈˆ»(Çñåoe

u % ü I [ m Î £ É W“K˜!Ïä ö , ÁÏP b tŠÅ!… —
© €» Í ß ñ Ê¿ Ÿ›I7ÿÎP@ú’ @@ÿ ©t “Û @ @Öú¨˜9…ðê ÆÕÒÒÐÒH€©û-
b¦ ÀqŸƒŸ•Ÿ §Ÿ¹ŸËŸÝŸcXÅ!þŸ„]ð†æ)¯;¯ D¢¼ îû gÎP ø,o.ÿ¼ @@Ìßœ’ÿð¾
@@ Z¼ ¯øú êV†æ…ç †æ d
ÿ þ«ç8ÿVfSÿüeù}mJLpXfAýÞ ¿ ê [¾«û¥Ü:¿ …1c÷ƒ»ÚT¿ š” Ë¥oßñq¿e

2
y Á§¿¹¿ ßÝ¿ï¿ Ï Ï %Ï7Ï˜ ãÓ×Ø- pÏ,Ï€”Ï¦Ï¸ ÏMÜÏîÏtŠ&

ß ß2ßDßVßhßzßS üžß˜L2-Ä3U þàP½¼¢³V° ÿ@@Ü›< » ÕáÀHß^"ÑÒHÞÑëÓ¢~ýpŸ

ï ï 2ïDïVïhïbY™ Šï„]ð 6µïÇïM¤wÈ$¾ûªMàPî^~ ðÿ¼ @@í‘c©ûÿº-@ŒðÆM½#£ êV 6 7  6 d —
?©>77Ä?Vfß?ñ9  ½?K Àëà«-fœh?B µ—{!ßö¶h?ð æ3‘--fÐh twy÷r÷Ôúÿþ

O è´ Nk rA0 B /f x Š œ ë À !To#c(9_ ü

2DÙ_hz
t†GÓ@'ãD¨ ¥ âC ƒ³Å×-âEKQø –
_è¨_ÿH7)IM¤ ¹¬ÿ (áë?@l îÌaÝ?@Õbáû?ÿ@Ø-rY1PÒ¸ÛeÑ`æcÂ?PëIÀ  8õ’%a 3¼!µSv  FQ—
a1x  ?¢á rU  v v v 3vÂ€w B?7FB³>a ??f{
ñüílK¶r \ ÜÍq ¾8EÄ&C¶rA¼r¼¶r§

_à cìÇ‹Pe,( FQ d ˜l( î KQ>a GUå #Q¼!¡ Lƒ¹UZ„DFQeƒi _“o¥o”ÿHü
jk ' 2 ÇµqäÈ¼åR È ( © ¡?oQo×œˆô /ðßO*/ðUM¤±® ˆûâßc <{üY_o¥ @@ ’o
»”- º–ú?Å”÷ÿm‘3(ù 3õ•
ô–
?S2$Ù3õ– ÿ–.¦
A?¦}þ,B ÅˆÎxÙþlO
3f iœü¶&H

ß´ŽÁ8üS¶@H?^GX€Ë ±‰A¹U  l  «H êŸµ†ŠH !S ÍÍ5Í@‰  b  ¾F ‡àÑB* ‹G‹•þOU
¶X°!TÏž¼ ¡¶BÕ– Ž0x_¢á ¢ H=˜21“ #1b NP ¢  H= ¯ñ¶G3 Â

ŠH •ƒ Vˆ *‘ ¢ ´ Æ Ø êˆ!a)‰„-l Ÿ€(Ÿfo €ooÏ Ï6*¹þ!TZ!G² #ÿ@@¸‡\V

”ÿâ?@\ê Ûd‘ß¡°æf†ÓçöorRÏ î”ÎÁ 3 4vÈÖF $¨
¾Ö ÈÖ ÈÖ” S2 ‰ 5ß†ž‹•k UÈÑeƒ ‘
Qý  Ÿ£æT‘±é:ŸLŸÐ^ŸpŸ,Ÿ4,ù!Tr ÿ¯ ZØ @@‘ßL„2²-„0ìˆÿ8 ”«í?@á  Áê€•Ú?Gô Ú`QóÊÿfñ

p

3 QÀ ?(=€öL¯^¯|@câßr«(–¼z¯ 2¿} ã›¿°”¯  ŽØní%(â®¯ÿ  M

ÏOä€È¯Ú¯/Wö¤'Q á E x¡Ï¹Rúá €L¸! ¿E dÏD?áþéœ œ ýÿÁCá e¿w´ Y'Q $_××@^ß¿M] Hö
€[2MUÅåT-Qõm „WQQCå -¸$ÜQQ Û ö /†>Ì^ RÇ DOW\Ï=ïLß’Ï¤Ë ßàµÎ áŒá+…ï—
ï©ï€»ïÍïßïñï ÿ ÿ'ü ÿ]tÑEû @@ =µ‘e FÿXÿjýŠÿ€ Æ îzó$1„ó óLF ðÆÿØÿêÿ™« ´£ d$æ
¹S-Á. @ R d v ^ š ¬ ¾ Ð â ô R/d/v/<¡ `ÅÑ_–¨ / o1/ ð /aoÍ_8/—
o°_»o 'o’/¤/¶/È/Ú/ì/þ/

?  ,%?7?I?[?Àm? ?‘?£?µ?'ü Üï ¸Žû<ðH¾5 ‰-]þø5î? O O $O6Oñ‘ÄqPIì†eOwOü‰O˜¬:æIa Jþ

Dn˜ : !ÓËOÝOïO _ _%_ 7_I_[_m_ _‘_ïo  ,oë_ý_\¯to3o’¯ ªo¶¯Îo oŸoþ¯j¯Õo 4¿M¯X¿j¿
/ A S e  w ‰ › - 2-Å ×  é û  1 C U 'üÿ  ¨§W
@ÿ@m4u~í!  æ?˜ ª ¼ Î @IdÁPIàŒÖ Ÿ Ÿ)Ÿûü*> ïxí ÚQŸ ®êÅÄ— ØkŸ}Ÿ Ÿ ¡Ÿ³ŸÅŸ×ŸéŸûŸ ¯-
¯ 1¯ ¿¡¿³¿Ì¯‹¯ ¯üï  ¿Ó¯2ÿJ¿Vÿn¿-¿?¿ žÿ
ÿu¿Ôÿíïøÿ
 Ï¿ á¿ó¿ Ï Ï)Ï;ÏMÏ2 .eÏwÏ‰Ï›Ï-Ï¿ÏÑÏøãÏõÏgŒà†¯® ýª ÐZ3C$[Î

&ß8ßJß\ßnß@I  À Ù,&¥ß·ßÉß›L•  Ïk9X§ðß¨@“¶ pÿ%P‘

ï ï2ïDï VïhïzïŒïžï°ïÂïÔï 2 D V  ÿ ÿ@ÿ¥ÿ±? vÿˆÿíÿù?  ÐÿâÿAO -?  wO ?›O Or „ À–
 ¨ º Ì Þ ð  /É4

ÃTk Ñ]@A?[m ‘`8

ÿPþÑA’_  } ÿ@@(Ú[¸  ÿ @@4ôó¼|[»ìã7@3ibÜã7ÿP²¬-ï³‘¶vÉ! ˆ›Ò  u `÷`u
  äb ¯  u ¢a
§f +€  1"É1 °h h‹€  1 CC¦a b
«a èc µb°bùd†ÓP¤Q Óú,Ö  v  /ê

! [X-Od  âÿX ³ @@¡©ÿók ¹ @@$ÿ€'ÓðF @@ÿ€ß½º{- @

b x w  v›s£Rp¦ ¸zBwÏ  œrñ ê üyz-µ &x÷ˆñã‘/ qHOçàoüB†K(!ÿ‰ï„òcç]/

¦ qbä«$Ì5º/– ` AÑ' Ü! 0 € 5
g&2 o,oÌ1_?U% s;*ÎOàD èOÄ= +•zcnhDŸRC

3ª_ ¼_Î_à_ò_ oÝ ï :o~Lg·>æÅi¹e`ÿ¡ðöTÔ— @ @Á†Oú  × ô3–a£Ê h½M -
tvþ“o¥o·oÉoÛo íoÿo y
1! 3} ¶L ü^ Odã}{Ö ý~e`ž=þ¬¯Òe`¿‹ÿPµ2ue`¤?£ïüø\ ™v ¶  ·  ¶¿t›¿-¾;·È¿ð †ã¿õ¹z-
hª·bóÃ^

!ôÝ ë ÷š2å] XÀ˜ïÈ¡¶ßw Þ— óÔk#v ” À, Ð(Á,dÇ Ù ¯ý Ÿ !Ÿ3Ÿ,ŸWŸ%Ôa®=ß“—
1žŸ°ŸÂŸÔŸæŸøŸ
¯øãÏ.¯Gl.ºè¢‹ÿö
@@JùœZû“Œe`&¿›,¼Óƒæ‰hZãÖ h d E çñ‹¯ ¯¯¯Á¯ Ó¯å¯÷¯ z–Ñ ¿3} öðE¿W¿Aê¼ ÈDï2ï³w

@Gä  @@ 0PÂ MÝ ™v  ö

÷  ö¿t”ÿ¦þ4÷àÁÿ †Üÿîùz-Ò‰>÷ˆ ñ /  T+ïè.ù1\   Í¿\VÈÉ ÙpÏ
 œK`ÈŒ,æŠÏªœÂ š ‘É# ¯ÍE ÀÏÒÏ ïöÏ ß ß,ß{ß Pß- Zî6“—2—
ß©ß »ßÍßßßñß ïÜ 'ïGl¿6u  sÅ\`’ÿðFSç× @@ ¨  V±òîoh ¤T"Þ h )Šïœï®ï ÀïÒïäïöï t   ÿ%
ýð 6>ÿPÿOd«d³ùóGÖ}pJ&À…s$ƒž´ pJ%šu 6 7   6¿t ?Ÿ>-7º? †Õ?üç9%Í`  ìs ü  F ê û–-
9ýÕO  Ò§'Xž Ív ?I† ¦ ¸ ¼ Î   /ò   (:L Q e#Y(/_… 3ÙD—    8©»ÍÝHêüøÕO
/@¬ Ž¦Î¯ÿ=¬?@B.+  Jx»?@€£ q   ßohLcÏl/~/ /¢/ ´/Æ/Ø/ê/ yˆQ

?%ý` v7?I?3e@RÈ¿yð†EjÓ?cvšu v w  vª4† ˜~&w³  †Î  àyzˆ¡Q
û§RoÆ^Ãþ ,¨MP±UsÎð.K  (ÅO,ðed  Ï+Ã¿}O Ï¯Íž  µOÇO
oëOýO _!_3_
E_ ‘Ln(Ÿ… iA”ãQA ôW¢ Ò  •:‘”îˆü„„Ç‹ ' 2 ÇµqÙ ¼šB € T4 ‰_›S7¢_´_Æ_Ø_ê_ðÃ Õ
o2f M _ÿ{¼?@ºb „—
7šÄaåàaè8“Ð eowo‰o›o-o¿oÑoão  ùî‘  %ýg¶0 B 3eÿrY1PÂÁ¿@uºª¦GM -×?É¶ ~ug¶f· g¶ª4ì¿
þ¾€Œ· Ï÷ö4ÏFÉ ˆ ¡
?sb'vb', *ˆþ Âò  LôwÒð.K Ï EµÂŽ’&§')_¼u ‡  š ¬  ¾ o¯â ô  Ÿ ŸgŸ<Ÿ wÙ¸ ¨ŽßwŸ‰Ÿ›Ÿ-Ÿ¿
Ÿ ÑŸã˜5Ÿ  _ ¯sâI¡  é/¯úÕI¯[¯4ß ¯ ÔíùvÔ ”K gå?»@DDb·?@«¡:Õ¿

öË õÕ õ»? Õ¥æ‘ À ûcTák¿à-=Pö–¿¨²D rµ.ï<!WÛ[  ÷w²ZÞ ábKO,

* ñ _ôðÆñÞÁmÕ€êÏ Ú®@-A|Ñ¨ KU ¸'ïmÒÊá  €±@@ þ Õ Çà0!×ÆáÎé
l l âí»á¢  Pß)â€gÛ|Ñyß¬âÍß¢ÑZò   ¹¢ÝÑ  öâ v[ ¢Õ •å$-!õ=OÚ÷¦Ñ§å Ñ

ˆô ¬¦Ñ« Æß ˆêV£Ð

Ãà

Tÿraining ÿin BCC/I EC
ãÑ»áëßýß  ï!ï3ïßœ6Uï ¯yï€‹ï ï¯ïÁïÓïåï÷ì„nMbë?@p  ¯ ÿôk ¹¬˜ð?‹@-
Â²ÍÇ5¸ Ò3½ :ÿýa 1Tÿ } F ÿ‘ýþµÂLXíý  åþÁÏ }ó-†š ð]F{ÈÚÿ²Å;¨ƒ: ¨ƒêûÿ  -
1 C  U g y ‹  ¯ Á / 1/C/\ -É6“_š·_ kÛXÒ5î_ o´~_ P 9o¥_]o /^_í_¥oY/òÂR q/ƒ%TB-
D OT“/¥/·/É/Û/í/  Gx0-1l1cá`ä ‡3ƒ? ¯C>‡5ÃQd5PK ] aXŒ©I°´@"ñÿøì?@"—
ÿ%Üø?@¼ÑÔOùµ ôÐ8lƒäâ?6\2À má  -1 C  F 2\ÇX1À^èc Nž,  ¤†  F  FŒ²Æ,Â — 1O’ö•ÃÍq
Ÿè+Z…‹wLE’Ë?ÓBwìj¸-ûE’ £Ì^Z/)ß“ûþE’0[SºÜeä"Çðe˜8¾Qt4 ø|ªÑ ªÕmÕÍq¿Uð Ña 1\á Û“mÕ
é”bÁô“ãß! 3  y ‹  ¯rž,¹ Ë Ý €ï  -¯7 IŽmÓïo?@ã²Ý°·ójˆ !ö~†3ý—Šmá CPöSâ,\Ã3Ã†–
¶Õ çˆx¶
Pö Pö –¶ã·#Ÿ5ŸüGŸY˜E eZ Šý¶kŸ Ñ ¬Ð ù¬’ü Âr=k¤  -è ¢Ÿ´ŸÆŸØŸÏcTá ôŸé”–
± ¯ï¯ ¿G¯Y¯$k¯Iè9§Ô\ì äB§¯ ·¯F?¡Éd?v?^?š?ÏÐý

S„ | ð(Îï @@–e€¼

ÿ@@Z jxÞ"ÔØ0ÖfN!â½äWPÒ !3 |Ù À´Ñ×^ -–BuÒÐ`uþé ` äb  ëu Zá
_æ € Ê Q"æA hèXè€ ¢ Q Dc^áXâ cá  ã mâhâ±äû3\Ñ OPfýÕæ0Oç, °H-S„ÿ
þ Î‘  @ÿ@¬ (á & ÿ@@ôúñ À{þ à€ ÞhêÜ  -°ÇÑÓèÔç ÕæSó[Ò@^ÿpúúç‡ÿ  Tò ¢ÿø´ùaHåA
Œ¦ÜÅç`dãDKïòÚþ•Çš" úöšCïò] ŸJ ”ÅâxKïòB-
 µ½tÐ. ¯AéE »O´ÑÑO  UÃ×'R°ÒßäßéA`_U t[* Ïo±Ô éoÅ]ã 2ã&è ü  C 1:]ßoß ß“ßÀ¥ß·ßÉß¢
 íßÿÜï°ÿyn Ø @@Ãÿ@  o4µ @@ O\É~zàÒ'èõX "Â9è
e±ô C, ê Oïaïsï…ï –ï©ï»ïÍåU Ùï MÎ&ø ÿ ÿS„åAEù–?j @@Hx¸1  ¿ù®ã”E  >Ž
uþ QöÎ&Í'  Î&wôS?e>ó'€?½ö›?ü-9äý/'  ÿ˜ü$Æ  r7 ò þýÚ
ßfo*°ù~ž‘2 ¢Ê ~œ ¶ÛI [ m  ‘ Õ µ Ç Ù ë : ÝD+# (õOK ;VhzŒÀž°Â›Oæ-
ÿÜ˜¤oå}ÏD àˆ Kðÿj @@  ´ W yÔ'è  bÄ9è?÷MÎŠŠFÝbH/ Z/l/~/ /¢/´/ÍåNQÀÒ/ä-
Çfý/ ?S„ mïKC Ž à›_{ÿÈeE @@ Üÿ ¸Žû @@vF31  QöÇfÆg Çf wôL ^~ìgy ½ö” ¦y~äýcF“ 9×.
þ  ¹
‰
“€Ôþ

O :æIa Jþ.  }WS9ý b×BOTOfOxOŠOÎ_ ®OÀOÒOäO3_ _Ö„$c  hî K <O_a_s_…_À—
_©_»_” ß_ÿÜc/ïg -m>ðpðz÷G \ ` 9 íWÐ/Ð'è

¢À+h  -DTû!éz¡ AoSoeowo‰o›o-oÍå€G‘Ëoä-
À¦öo  t.ßºè¢‹¶ à<{ïüY_¥0pLÒòÿ¾g  @@¥e ù4£ BwÀ¦¿§  À¦wôE¿W¾å§r¿½ö ¿üŸ¹äý¹Ç  `—
ýÝí  6×d¹ ýù  !8ÕM÷CøÞ!  1G  ÇÖ; M _ q  ƒ ÇŸ§ ¹ Ë Ý ,Ÿ Ÿ
ÏÄ £ ¨çÏK =HŸZŸ lŸ~Ÿ Ÿ¢Ÿ´Ÿ ÏØŸø ÿ&Ú–† <
@û@],pÅ  @@¿7XZ½ž  ©3ü â#© §6½4A ²6¯H¯Z¯l¯~¯ ¯¢¯ Éé@ÑÄ¯ä-¹æï¯ ¿ t vœ²Ó½;
A7ÿ@× {9ƒ<

ÿ@@|í!— #  Qö¹æ¸ç ¹æb´>ÿ€PþÞçkÿ¨¶†ÿ˜ùäý.?™³ûtFÙæ¿:H~ M¾i´ë 4øö~7 noß
ÃäAO EÏWÏiÏ{Ï¿ßŸÏ±ÏÃÏ ÕÏ$ßùÏÇ  ã ß+ßz     >PÔHÜ Ö _ßoß ßÀSÑ—
ß©ß, ÍßßßÿK¾Ø£ ¾?@ÿ —  %¼Á?ÿ@¿%_ìÑ ß
èý Ï+hÄ 4ïFïXï jï|ïŽï ïÇ$9 ½ïä-
`²&èïúï tð À¿ó !×ò 6õ²&±' ²&b´ 7?I>×'d?¨¶ ?‘9 ÈþÎ
ŒJÑÃÞ¨ø'F ƒÌ2T  ,ýÃZÏßûÌ?Ùu BV ?“+ˆÉµ¿. @  R d v ºš ¬ ¾ Ð @ô ÂCý-ÙODS

ØI  ¥ }FidD”  ¥  Œ Ç  õëA”ŸH5DxK  ' 2 Çq¦P ¼DB €> DA=O ÚV” èYzŒž-
wO‰OúÔ ùÁD¨¬¦²šÿÊï?@D.+ ÿJx»?@Ê w¯¼1GôteË}eä8tg
%³Q À ³ã/â ·/×¬·fá/Û¢õ=ól H QZKi-¥å
ø x*QÛ=ydŒ<Ü œë-  õ5OÌJTHYÑâ“Õ Ž_ ò1a  €)LX!_E .`0lG-
a@5iÓqÓqIm"aSÑ ›O  R²KÇAÄO b _íAÁb  è)íM8… fI ' i  íEüU‹Žˆe¤ ¶ 9—ñA

e8Žï [  ŸñA  -Ÿ F QŸ½ î@.Y%;[TÿB Healthÿ Educatiÿon Campa ignI_[_m_ _‘_

£_  GÍDSÑOÑLÔ =cƒÕ_eù^y

e eÐ
¯ ¯ ˆ× I :ð?M@“£þ?5ð§a÷†hr,³ç˜o bÀ 8´â ‹‘»c·fºR§7SÑ€¸ž“TÆn^² d¶ ·f ·f ×"†²Ï· çoù
fPs ¡ÿ ÚýFÙýFéü
ÂE eZ Š¹¶ { Â È5>ÀáœßÛ Âù–oXÀ Áe Nht *d 2l“Ñ“Ùy ¡u…;
‡‘DAHÑ›Ã õ ©Ä9 ´Ã ¡“Ñ×¯é¯/¯€A¯S¯¬X.QüU:]´ÁA dDÃ\ Œ¯å_°¯bF m jÏ|Ï÷|YoŠ”À
°NDU@‹”ú %Ø %ê % È¡o`±dÑ»oÏí\æœoüõ¿# e÷ e÷üaq Í ;± ;±½Ã+Ï rM æàâþEÏ
žØ‰ Ø‰ íùð ü%§ ¹ Ë Ý ï % ƒŸ•Ÿ§Ÿ¹Ÿ -õ*æ¾ÿ ŸÆ ôÿ(ê % ŸI ÎFd ÐÿlŸ š ³ÿ¾
Ð Æž ;[AÿCTIVITIE
S:³ÂBeßwÓ›qƒß€£¯¥ß·ßÝÏïÏù¯åô!þ 4 ]tÑEG þ"å @@ÓE ]Wt¡ "å %

' O¼13e `ãY%
X&
eïó"y3Y& c&’&
ø‹ï í›q !P>óÁ•¸ìÒ"h+r7çD€ï {Ò"¤ l'(^œDÌì(ßŸà_E@Ë×qBÚßìß…ÿ—ñ
øA°ô 3. -£69& +°°

Óa$Óe  lâb  !  ·-w/ó6¶# B ._VÛC¼_ÎS~ ¢À
o o.o@oRo &Ø¯ï ¨õ+  ,¿FW  ƒ£0- Q•0  |@¹äß| %U £00S C- OÝ6¶.S#hcA`ã‹U
ŠV
  #²‹V •V®V
 Ç-Ë¿ŒP ø¥èÞ/  Š ÎÓæUìø/  õ†r` ¸ ?ÿ  }Ø¶¾ *Óa†
ø ô  Aèñ8”Ò¼@Jb Å eq Å q¯»A‡w ŽrÎA/?A? S?e?w?‰89^&]
v?V  È?Ú?ì?þ?< "O4O FOåô ¯Öè ßÚ¾@ /Þ
ñ´Át kO}O ß¡OÀ³OÆß¬o¾oüß÷ ùŽÿ²UÍÛ @@žÿ=þ¬¯r @@ÿÐYØåHÏõ?ÿ@±³ÇŸõUÞ½?÷„å?@° ’Î Fï`±
|£bïtë0–°/Â/þ!ÀPzÚ¢\ Åþä_ ¨gÎT· ý³þ_ °k ‰Òý4 o  † ³Š 4Îî ÿ ÿ+ÿ=ÿOÿ aÿsÿÒo—ÿõ  -
2  ñþø†Œ¯p °¯A Ô¨ “ Þ¸ ø¯‰ v¯ˆ¡2¿ž¯ V¿ç  ¯æ¯ž¿/-
*ÓPK MHF/NTPÆ  Ø ê ü -ß0Ðr3ÒÁ :×´ÁE9 K ] o  à¾OÐOâOôO ,Ùác÷°X¦'
€â÷œÿý. @@ z²÷×Ðü<á ¿çìéwþ€fÓÚmÕå?Pÿá°°]Þìë¿€Pé¢Á4ŸrížÖ_Ÿˆ".þÈ,
ty
˜|¥û? ––jÂ!+‰Õô¦  ãÓ  gŽhß ¡±F¸ûÙ1 Ÿ"“ Z¶

á m³ŸV

Ôwš¸æ 8 ?Ö2–ŸnéÛŸíŸÊÿœ‡¿ˆGÈ³"„¬?@·ïÉæxã|cˆ · àßÀ ïA÷Ä›q

¯ ¯2¯D¯€V¯h¯Æ¿Ø¿ê¿ü¿Â¯U eØ}ÿE¿¡ÿ ¿eß×ÿéÿ ^¿gÿb #  ÿG ¼¿rÿÐ}    Ï¬ñ  Ï
C HN0ÏBÏTÏfÏxÏŠÏ 2ƒF£ÏµÏÇÏÙÏëÏ“ ð¥ · É
X× ì ÿ Ö @@ÇŽ ÿ.,Sú?@
äï
¹ bP „”  “+BlÐ    T"lÐ\#ÿÚ?P  æ¼Ã & À$™“ ¢ßF ‹&øÍßßß(` ÆK Zû µûÙÑRìø û,Ã

ï  4=7ï:O±-ûÙ\u±ï‡`W«<ï  ñŸ ›Ä

¿ýV hÒ?PL«Ñ•ÐqïƒÏ ÿŸ ÿ ÿ%ÿ7ÿIÿ[ÿ¹  Ë Ý öÿÅ®e#P
 O4  3O  WH\%jO|ON ú? õ@µO!OÙO«  OiO!_ðó >Bþ !ÆOJ/Pÿenitentiÿary Syst em!3EWi{-
 2ƒ°á—©»Íßñð / /'/Þ…h†ü,ÿZÊó?@¼ÓýÇÿÿ?&pØ„`@v:¯…®Àã`EéüeÓÿ?PÊARTû! ù‘Ú°á /F -
v°/q™þ,æh+r7D€Ïü —46¸·†

þ þ¦Ÿ  ç©HOù ú
Ãžâ  ½è ÐßÞ?þ?,?”?¦?¸? Ê?Ü?î?L_^_p_‰OÅ® õgŠ ÈO® ™Oôoä ö  áO Ÿo‘0Ÿœ TŸ?_  ÐŠŸœŸ‡_
¹
Roÿma Couns elorÃ_Õ_ç_ù_
o o;c=a9oKo]oooÀ o ß ß$ß6ß×i/ºÿè¢‹v @@¬íªf°*ìÚ„€ô?×@TUx±Ûlµä?=@x²UË?P¶„šÁ ,&²£3
E{¦¶\ ny46¿vÍ
¯RÀ½v þý×5,46w8±þ¤
w »˜CÓüov_è‰F©¿Þ¾‘ÁØ ê ü|…¼h|¤0 z ®Gáz„áã½ òäÐ?  ½a  ,ûï  , > P b ÀŸ ÒŸäŸöŸ¼ *×s
±8ßAŸ \ß Ÿ€Ø‰³Û‰Ÿ¤ßZŸ ÈßÞÑÞßJß ï¸Ÿ-ß’ßàJï ¯gÒ ±

Schÿool Teac hers8¯J¯\¯n¯(€¯’ fÓÀ'kI«¯½¯ Ï¯á¯ó¯ o¢o´oÆoØh?º6  ™¤b°uóÿË?@¨ ´

‘ý t°@šåÌ·m Ø  †° È ¿‡!VñÀª¿C}N Õ¿ç¿´pé ï 1RÏ Ï  *¿‰ íñÇ® Ï ¿Á˜xÚ¢ÿ6Ï ÿ

Å=ý£¡ QÏcÏü ½ÏÏÏáÏóÏ ß  ßuï‡ï™ï²ßHN  ª ðßÎÁßò  / /
ï •  P/¼t/gïŸ / ¼/¯ïÙ  ¢YEäïöï  ÿ ÿ,ÿ’¯\óJÝô^ü  nÿÛ4 ±é=Y-ÿ¿ÿÈÑÿãÿ×

°X²Ï˜ÿÕÉaø?@—>ï«Õ¶éb°É‹KoÓ ¦Ôû @Ô}B½Äû P!-D pé® rˆ -! u °`ûu
`  äb  » u°À`u
»F +€ €Á"CA ÄH´H‹€ €Á [#ºA´B
¿A üC ÉBÄB T's@¼1R C}1V} Hr ý ý-cD<»eJ Žÿö?@” xx…ÿ^ @@"ãË`ÿ 5ú?@šyÞ?2èt @  ²/X 0
W 1V¯S»2º_ÌZVW.ã_  °R þ_ iþÈ Õ Ñ–¦»Åþß  œ»–j_%ýç‘  ~&„húû?É«  `£H  ÿåW`,  ·>
¿X2¿FAwU ‹ *æ/  D  ?Ü
      uŽC,H"  j#^ñK½?Ï?á?ó? Oà O)O;OMO_HQ©½ÿŠiÈ @@J ÿ ²‡{ @@T?fßŸ 9Óƒ H;ƒýÃ•HÒ!3
|Ù  À¨OºOÌOÞOðO _  _&X{q5_¼½ð†`_r_þcDÿ–Š“'5 ÿ@@ø
L»Eè~8€£»ð «[/€ œ/²©É

-V ð†ï‡ ð†ÓTuŸ‡ž –à¢Ÿ f½ŸÏ™È b€'ïR @éWo ¨ÆßL5:Ýìqo ê¿ÕEÁ‘nè‹o È-
0Ëë¥o ·oÉoÛoíoÿo ` 5 É¤;Žá¯qw' ~ ¢ €´ Æ Ø ê ü

aFfÿ OyîX @@ÿä¹/Y Xë? @âI+†8O%  Ð¦ú³ÈTˆ ` r „  – ¨ º Ì Þ :±ô d ð¯Æ-
Ÿ1ŸcD;® .ÿök @@lñ'ÿ,4¤ï?@’’ÿ‘ÄæE @@\?,7†ö
çª °S ¯Æ®Ç ¯ÆÓT4ßFÞÔÇàaß f|ßŽÙÈ º lï9 -Ó ¯ ËEÏ¾ Lïª ™ x7ßäí
›ÑJ¯  ?Æ†ò2
½d¯v¯ ˆ¯š¯¬¯¾¯Ð¯-
¿ô¯ˆä ú¾ ïqwM;¿M¿_¿q¿Àƒ¿•¿§¿¹¿Ë¿_Hƒëï À D/€° WÿbRàã?@õŽŸf§ ±ÚƒH¹óÊ Tˆh,¢O2ÏDÏVÏh
Ï zÏŒÏ ^ùá³ÏÃÍn ÞÏüðÏcDÉÝ ¥ -ÿ @@Lƒ';Sÿ˜è?@=ù6Ûû Û/€(P  £#PÞ+Ön m  n ÓT ó  -“  -
 f;M ¾Ý?€mÂmXÆpf_h ýh ¾¡ý¾ïß  Š¬-çPéI¯ÿ  q¦†å\  ³#ï5ïGïYïkï}ï ï@Þï³ïÅä¹þ_/qwNúï

ÿ-ÿ0ÿBÿTÿƒÿxÿŠÿþ_H~ õ \Æÿ@@&ñ]w½¿ý  ®ðq,AÛÿÙêƒHÀy2ÉTˆìuÐ\ Ší¼åÿ÷ÿ  -
 ? Q &X¸!r ÅÍð-F  ¯ C”ñ ë*¿]ö-@@'p5†ÿ2 o-K @@!$p4®U-F,G -FÓT ²OÄNRGßO fúO

Y¾Ý B[šâÜÔí”  )?Rùî8Š þtmùò  ©eï È 'gVå÷  / / -/?/Q/c/u/    aŠ3~8$-oqwOÈ$À, Ð/â/ô/ 2Ë! = 1 $7ÊeÐÓYýU0aR9!C”/º¿è¢‹V @

c@UñT…ç1~×CwPÐYCÀ ¬Cwa1Cku
jv!
6OÊÂ·“kv uv¤vñ
\OÊÂòÝ½ îž÷ò(¶‡_ Aà

Ï
û¼SUÃØ·¡ßu

U|æS_ 1?¨‰ X¼Å¡X7ð¶R.?@?ã_U … úX° jKx; ® ]oŠ ‰r cM©Á®0&ÅÑb 3`‰r cM‰ –bC ’

iˆÒ0&1,eÿStudentsC iìTÞoðo}ˆ”}ˆù#‰„¾Z ' 2r  Çq ÇÁ? 2 €|dVq¼/Î/Ÿo±o ?€ 6¬W)2»_Í_B
1R?Uÿ@Aˆk Ô  ÿ@@ d"æ._ÿí?@`Zv¼žÓªßÀø®£Ï Èv;?^ ø¹ ½¤?¶? È?Ú?ì?þ? O¤ÈVq1OàÅÍc¶Â nO
€DnÕ‡ %  @@ ¦¥ÿ ;O )  @‡@ìc§£ªEc¶b·  c¶ÏDè¿ú¾ˆ· Ï—Ö0ÏüBÉ¾Ýqƒ²ÑVýã$  –Ûqð=û ÂÖ
  ,C·ú>åð  { Æ…üiˆ¼”0z ®GáÛz„Ü’

f  A0 ù‘¤_¶_m¯Ú_ ì_þ_ o"o4ouÑ®®ŠßïçQëŸýŸ ¯!¯3¯E¯ðW¯0ß{¯˜ü í¶¸·fá (tà÷¬ j ® -‰
× ·§¨âÒèÿP*+O ´þù äÿë¯ý¯ ¿!¿3¿E¿b  €ãÑg¿„ \ö’¿¤¿€D.ú"qö›å þ?@ÐßÎ
…ÎAÌ›åÀñ ê \ö[÷ \öÏDáÿóþÀ ÷

V ) ;  ¸¨ßµÈ–Ná‰Ï ¥¿³wT æÒ£Ï ?Ú,äZØ%  Ð  ûúâ ¡]Æ×Ï éÏ üÏ

ß ßdïDßVß hßzßÉßžß°Ô¨íƒ®' RQ ëßýß ï!ï1 >ïÐPï)tï’ I€DxÑ?E ]´á?©@O €û?@t "0v-à( #”
“ ØU}8WòÜ ”`óØ%
×&
á"R!  ×"ú"ÜƒkþÒ" Ø& „â&%6
/2ú"%2ú" üŒÿÕ  r1Š
÷Ó

Á¶  Õ…¿o ²=¾
  u 2ý±,  -d ¸X SÑÐ b ß Ïaõ q  œiˆéCd².Ÿ/OVz @Üƒ

“Í  ŸvFâ ô  €µÿ'eõ®O$3ú"‹õ  ÖIA S e w ‰ ›ˆ
O2L|VJFèÚ ŸOþ  Ÿ-_kÿFŸ2V b›Rÿomani/CR ISSã Säßï-
/  /,ï7/I/[/m/†ì¶óõ (t€Ã° í¯fG ~ ½õx

sðÇ¨ 6½i j ýÒï äïöï ÿ ÿ,ÿ>ÿW¹Ha@`ÿy½Áv‹ÿ ÿŽä/·òm  u @µü€ –
 â³ÁvÀw ÁvþôF XŽÀæws KÆŽ  ‰¢=¾Õï ˆã;ˆÏ  Ÿ?Ø ,ûÞîk?z þÅÈ ¬ƒvjÊäTÐ å?

õ d Èo<N`rÁ– fT

~èŸÙ×.aLo^opo ,o”o¦o¸o‘ŸÜo‰é ,û6 ½õ
@@8ØŸ¼
    x ³òþÀéWmH k À 8 J \ n € ’ ¤ Qø€.aÅ rý°¶ð    ‰v-½õ

@ „ ½õ  =†º¶¹· º¶þô?ÏQÎÀß·lÏD ‡Ï™É¢=œØO Ø\P –Š

â Ÿÿ F z¨Öæ  Ÿ—
4Þ5ŸGŸYŸkŸ}Ÿ Á¯¡Ÿ³ŸÅŸ×Ÿ&¯ûŸfT  ¾áßÒ UB¯T¯f¯x¯ÀŠ¯œ¯®¯‡ßÒ¯ä¬îºÿùU_ú @@šÿ¯ê¹ |ø?@ D
[ê³„âÿ%wúýäï%x·  Ã  4 ÏÑ4¿F¿X¿j¿|¿ Ž¿ ¿¹u:á¾¿ØM³öé¿üû¿‡$®»
      3~~ù 4_Õs ø$p@ Ã  pÑÕ>…³ö²÷ ³ö c„8 J

Ø÷e ©†€ ’  þ¢=/ÑÓ-#}êþàÏ Ì9«i²aýÅúÏ ÿà–¸6ù·æ†#˜9Y*k! )Ô.ß@ßRßdßvßºï šß¬ß¾ßÐß-
ïôßfTþî Ú7§V;ïMï_ïqïƒï •ï§ï€ËïÄ¬^2A-ø#À$ƒ °½¦5BãÓuü ø÷#ì%xÑÔ-
 =ßGþ7 ;ÿMÿ _ÿqÿƒÿ•ÿµy3!·ÿØM ¬6âÿôÿìª & ä#í„ °ê Ô¡P@ƒ¬6«7  ¬6c„1OCNÑ7^O©†yOü‹IÂ
¨ •Aç=ñßÙ  \ Ê‘÷úçÚ  ‡ïô Åi3©'9K] o³/“¥·É /í-
 ÿ ÷.Ó_7§W4/F/X/€j/|/Ž/ /y_Ä/Ö/E÷ m  À#Éo•ýx ð¸ £UðÊÕþ ø·ñbî 8ë -
é·m Í>Q&?8? J?\?n?€?’?¹u,a°? ×}¥vÛ?í? „¼ À.oÚù?@Kcû? GE èb =†¥v¤w ¥v c„* <ŽÊwW ©
†r „‰þÂ h—úäuèÈþÒO

Å=ý£ñÑìOþO-Ö
»bH ¤ Ö _2_D_V_h_ ¬oŒ_ž_°_Â_ oæ_ÿ _ söhÌŸ7§X-
o?oQo€couo‡o™orŸ½oä¬ñßÇ>Ë 0ž=ïþ¬¯2
°DO×Oi Þè ùê¢Ø 8 -DTû!é - ? Q c u ‡ ®¹%¡@© Ð½ž¶Ô æ Äxç ÷]´ã 6@@5ßï›?í¤ô
<{ü Y_e 6Æž¶ · ž¶\Ä#Ï5ÎÃ·PÏ¢ÆkÏü}ÉÂ {^rËüñ²Ë äO ÖûçñÉ÷™öÁÿ
Ä, Ž%³Ù Ÿ+Ÿ=ŸOŸ aŸ¥¯…Ÿ—Ÿ©Ÿ»Ÿ
¯ßŸ ÿ ê-Åß0çY&¯8¯J¯€\¯n¯€¯'¯kß¶¯ÏoEû - @î¢ Æ¢ýå @…®?+ûÿèäaµÕâãô 8 xû-
É> À ¿'¿9¿ K¿]¿o¿ ¿¨ø-á¢¿Éýð—öÍ¿ß¿×j
@@ÝŸE! EËä`ø³ë" 5ú(F—ö–÷ —öND .

¼÷I › d v  Â ?˜{Ü  v ÑÇÍ?V )A‹3þ†íˆ  ËR±ºøÏÿ
~h 'kaÐ  ß$ß6ßHßZßžï~ß ß ¢ß´ß ïØßÿ âî¾)'  Zï1ã`8ïJï\ïnïÀ€ïYk-
¶ïÈåÏ ÀóJ 5Ä 4€úèÚ$ä 8 ¢) ÿ$ÿ6ÿHÿZÿlÿ~ÿ ¥4 !›ÿÂ= 6ÆÿØÿÂ)) þ¶Ø% öfÄ(F 6  7  6ND O
'Nµ7BOà”F]OoI-È0! …
  *T¨
 ÇÈªB·mÛ¶mÛ ‘èˆªB Ò¤I“&Mêñ
 ÄL

2DVš/z Œž°ÂÔ¢Và)·_
"cGQP[uT-á*ä.R  v1/C/U.#cÇSv% AQ ƒ'1áZ-–
UÉQµ))™ã:Ï%€Ï%@æ ÇS±ÜÆe ÀÇSÌ?þ*ÀÁ š?Ò1À?Ò10!  ´ a”3\.ä  6v ™a?†Jv b?†^v ©c?†rv &
r ,v ª6v 6v Jv Jv ªhv hv rv rv üÇÈ)a ê; õ ñ þ†²Ãñr7Ði ã 6Ò1ûÈñrL® Ï&W Ã×
ñr&¿_Xò‹%ï½ e>T 1á(ƒ'Š1XY1á,itU ˆQƒ}X 0ìÑ6q&á ƒ –
U „Jq¨‡j% „hq¨‡ X% „rq¨ƒ&á6q /ùP  a/o?oX/j/|/U_g_ ²/Ä/Ö/è/ú/

?-?0?€B?T?f?x?úo

¶º 6q”3¾³®¦ Ö?è?ú? -È a®OÇ1

²ÉO  µ@ãO#¿AÃ®¦n·-§  Ã o¿ ¾Ÿr  ¿‹´½§À¿ XÀ _ _+_=_O_ŒŸs_ …_Ô_©_»_Í_ß_¦Ï ê
]ä&ì //!Ô3Á/Ù€JŸ,edŸvŸOÏšŸ¸Äù,‘ÊÕã®å–
ºÖºØëe€ ôcŠ3 Ñ”?-ýþÖ¿?Ñ2þÓMŒ 1bÄˆÑ$êOüDæý{OèÁ¶OüL€ˆÅ ÏœÊ$Ä Ñ± \• xÎÃL wÒ  €L(¡
/Å uÐ0<ÇtÑ|Ù ñ  ñ} (# kÏñâ,Ë—Á
”Ï0ÂèÏ½Á â Æ9½Í  ûå˜˜ÿ c°ÿ½ÅCÕÒÿ µÔëÿýÿ gÁÁ,e ÿ7  £ÿ[ Vôt  ÿ˜  ¾Àá

Y˜Š1qÐ¼õMHF?/NTP iwÄsoÄ…o^ø”^ø¸äzÛ '_ 2 Çq‘ ¼ Â  ñÑ-
!^ ß ß'ß9ß Kß]ßoß ß“ß¥ßžÁÏe*ë¦àæ•Ðq.ÀèßŒ1€¦  ï¦=¢&-ï?ïQàà¿À

Ì[ï ×’$I 0âuï ä?Ç ?~ì ï¡ï ³ïÅï×ïéïûï ÿ-
ÿ1ÿ CÿUÿgÿÅ × é û Áÿ $Jp&:ON  pOn* O ¡Ob ÅOžÆàOLO³  _À/O:_L_ -ª2# DO W4FXj|Ž-
 “ _§¹ËÝï / / %/7/I/Ð Á–Òæ•õ ÍÞåßßñÚFa¦/ íBvpÑ/ã/QàH°š4i 6ücï ? ‰ #FŒÛ á3?
% 1’ä M?_?q?ƒ?•?§?¹?Ë? Ý?ï? O Oq_ƒ_•_®O mO
{Ú òO±O Ÿ

z/Ÿ AŸ _eŸ† ã ›Ÿ`_¿ŸÀ+ŸãŸ¨_ÅÅ±d •GPÿ/Nurse Tÿraining ÿCurricul aÔ_æ_ø_
o o.oo À¹`_azÁUaRd
Â v `o ²zÁ+½¾o ‘¥e•¯H§¯¢ˆäi™3ÀÑÇòÜÄ[€ýÜÄ@ _%Ü´µfªµ Ì,vØbÀ þ¢i _aFsZ±”  ø¶ ý×ý×¥
 Ã¢&Eb ÃBv@)£Q~þ¢ç²lsø¶ ø¶$#ç#ç ¢&Ç' Bvgwá r „v;3 ±  “ +ˆÉ ìq 8ßÂ“?_,ùÅ’ßŸ{ßÂ L®
&W Ã…{þßÂ&¿Xò‹%ï
Ópe’h(²g- Àì´’ p¹ ‰ƒ¢ˆ
ñcø±Na }Óôu‹ÔþÑ–×Z¥‹Ô¦ @–×‡e‹ÔFa–ÓV©  MbaGoYc[ ¿ro„o –
o¨oºoÌoÞoP* wg& 3 Äï-|HÏ„q¾Ï„|,áÿ Œ 1bÄˆÑ Ÿ{@ò² =ûÁÓ{ZøL1
œ# áFsÂ#£ö ð  & 8 J \ n € ’  ¤ ¶  ¯&¯8¯þ Š Ûè § ’ŸQŸÝ Ûêü

¦Ÿ 2ÊŸ° h ¯Œø °8H¯º_Ð MOEŒ¯j¿ |¿Â¯Ô¯æ¯ ãb ï&ï 8ïJï\ïnï€ï’ï¤ï¶ï ê ½µÔæ×H =Àùï
ÿø ÿ/ÿÈqàÀ  k

ÌLÿ èq$IžvþnøäÇ ?~ì €ÿ’þ³!§ùCF¼ÿÎÿàÿ òÿ    ( : L ^ p  , àò /Ê )_z9G_ _--
}_{:œ_®_sÒ_ >Ví_Y_Ä#o<_GoYo -/ ëDOWA/S/e/ w/‰/›/ ãc´/Æ/Ø/ ê/ü/

? ?2?D?V?§°Eó’UÚ’Uw˜ƒdåðïð¢?´?Æ?Ø:“&Mšã4i FTÿ O ‰ ß#FŒ á O
n ¡ ¶íšöSqGIã†\O nO€O’O¤O¶OÈOÚOìO þO _"_€o’o¤oj_ÉŸ ‰çŸÿ_¾_ ¯ Š< ¯N¯ or¯—-
ðŸ¨¯moÌ¯8¯èð¯µo7•C ëTeaÿcher Traÿining Cuÿrricula ÿ+ Studenÿt Focuseÿd IEC
ma terialsáoàóo ) ; GBÆpd›”bq_t$’ ßÁ r ’sWÍË{7•²uÁ¿Ó¿D¯˜ñy™épa7
†ç2¤«@ l5ÜàÅò2¥ÌÀ9†ârG Y k‡/‘ ´*Áçƒe¾¤ PÖ ™f©ÆdÖ g©ÆxÖ ¨²qà³ŒÖ @Ò FÖ ªPÖ PÖ dÖ
dÖ ªxÖ xÖ ŒÖ ŒÖ ü#HCÁ }g£¾³óQÏ¦‹
âm Ó ã:mq†”ƒ
âL® Ï&W Ãr‹
â&¿Xò‹%ïÀ€PÑ¢u (¿w ñÍyÁ¡œÉš™ƒ ¯˜
^3PÑ[q©ã •·ä dÑÂç7••äxÑÂç”u·ä@²qÂã[qPÑ7‘[| )Â IÏYÏ” 7•® À Ò ä Ê

¤

ÉÉÀ
†t5€ôp2§ „ñ  Úˆ -Ö2íu™ð`u·à` ä¿b  u !
®&  € _‘"’¡ ,/  € _‘ ’£% *  *  g  4 /  x  ß&ßm…=Chåë…È k  þˆ-ÉÉ ãÜý› þ0‡
      H*Á  …
 *T¨ÐÀ‹p& 3GÕ8& Ò¤I…€ êŒ‹@ Žñ YÒà³È  Ç  ƒ Ç ’¤ ¹ÒÈÓ ·¥ × Ú¤ ý 7•  Ÿ Êñ-
 *Ác•Š÷u’™ÿ«ÿ,7‘®ŸU Â›* ¿xô  7¿ -ª*ìùÃ/¡£[q dÑW `0<ÿ~ `ÿ¢ „ÿ ]/o/ºÿü|ÐÜþßÅ%†ƒ€×0
 B ¡ f R ¥Æa šÔfž " çÎ ;wî¼2D Ýƒ dÖì„dÖü

Ÿ
Ÿ2ŸDŸ VŸhŸzŸŒŸžŸ°ŸÂŸ®/ 2¿D¿Î/’_ã9°_Ÿ¯^¯ æ_ä: o o³¯•_×¯¹_ qo ¿•o o¹oU¿ UÕQþs¸MHF/
Romïa & Kqni CRISS¸¿–Ï¨Ï î¿ Ï Ï"3xÑ
?2?D?€V?h?z?Œ?ž?°?Â>@‰ éÅ  àûUÔ6Ô6Àà O O&O8O' àÀ ï

ÌUO ’$õI  âoO äÇ  ?~ì‰O›NxÖÑ  xÖÅO×OéOûO __1_ C_U_g_y_‹_éoûo  Ó_F¯—
‰d¯ho'oš¯˜Š ¹¯Ë¯|oï¯[¦
¿v¯Ío€@¿Y¯d¿v¿'~Ô’=wD OW^ p , ” ¦ ¸  Ös/ Ô æ ø
   . À@ R d Â?Ûöï5 õ )Þåù?¿ Ñ ã R PAã4i"–]O#Ÿ ‰ -
#FŒ á=Ÿ»ØÂ  ÏÁd™ æyŸ‹Ÿ Ÿ¯ŸÁŸ ÓŸåŸ÷Ÿ ¯ ¯-
¯?¯ ¿ ¯¿Á¿‡¯æï7Ù ÿ ¿Û¯ :ÿ8ÚYÿkÿ0¿ ÿ o ÿ ÅÿŠ¿éÿUÿ  Ò¿ )<xÿRHM/PHE ÿTrainingÿ
Curricu laþ¿ Ï"Ï4ÏFÏXÏ8vÃ¶ xÌ  vŠÏœÏ ®Ï÷ÈËÏÝÏïÏ ß ßG B(Ö ‰…ˆ€F ø6ðOõ ÈVÝ¦C¶ d“fß
xÑ¶CÂ#& |ßŽÖE“@  x?6ê; õíÃÛt"?m Ó :mŽÖ±Óþt"AL®
&WÀü Ût"O è´ N ëÃÐ ï,ï>ïPïbïtï †ï˜ïªï¼ïÎïàï> P  b (ÿž?ï µ?¶ÿÙ?‡ÿ ý>Øþÿ!OÏÿEO±7aO
 Í?! —O°?»OÍO'~
Sþ>vPARTNERÿSHIPS: G š j‹4 Á|Äø"?ƒT Ž1‘]Ÿ-
å1† ¾ Ð ƒ8RÅ ™½ ~‡òOõ ‰„M@ e ÜOô gÌVÖ`¹ dßvßˆ× 1  dQZd“k’D  Šf 75›  žf mãV²f ©nã
VÆf zb €f ªŠf Šf žf žf ª²f ²f Æf Æf þi-br 1¹,èþ€/ &¿Xò‹%5ßš/
®" Ã´/ct ïÃÐe¼È(“ úÑ¡ (tÁÖYn9ƒƒ8
ñCŠa xÁãsÕ%ñt71üw
5ñt€ qüwh ñtÆaüs7Y       í»wÂŠa
1/-dQƒ_“_€h
5,”¦¸â4

j iÀ(ÖÄOô€ôO÷r!ÔäO÷?jˆ -,2íuï€`uñp` ä¿b  u w‘
®|– € 31"fA ,…˜u˜€ 31 fC{‘*u’ €‘ ½“ Š’…’ Î”No`o;* Ša é-¦k  Ò(- i ã2 › þM×  ÆØdQ
…
 *T¨ÐÝÛä|¢¼ÓÖ Û|¢Ò¤I"¢Ðêk{–¬ä  “bÝ  -¦ § Ù¢ §è¯ú¥ób  s ¿û¤-§0¿ú Ñ!„  á.

ó-‰Á75à‡I2ï X Ÿ
1,?U –;*ñO Î„
_ç= ÊB™ ÏuC / 71ªq/  ‘ Qµ  ¥vÐ â »¿ ŸÆ<Ý[¦ U–*Ö*Ø

,ìŸþŸa*ª¨ Œ 1bÄˆÑ¼¯ ïØq-¤ÓÁˆ¯Î¨ #žf '¤žf Ñ/ã/õ/ ? ? +?=?O?a?s?…?—
? Ï  _ _%Ïéï:Ø ÿsO2O <ÿ:Ú[ÿmÿ‡O‘ÿýæ¬ÿ  ÿØOâÿûï    2^¹qþiˆMOJF/PS & Ç_Ù_Îè”Îè(äêË
O ' 2    ¼7â   !/  qvÏˆÏšÏ¬Ï@¾ÏÐÏâÏôÏ ß Þ@ F*[¦à5eÐá-ÀXßjßø|ßŽßË¡àÀ   {

Ì«ß ’$Ib ýâÅß äÇ ? ~ìßßñÞ v
ä v ï -ï?ïQïcïuï‡ï™ï«ï ½ïÏïáï? Q c )ÿŒ? Ý ª?¾ÿ}ÿà?Þ ÿ? O Òÿ5O¡6PO¼?# †OŸ?àªO¼O}

2j‡DOW ¤ ¶ È Ú ì þ ƒÆa ,>Pbt†˜Tª Þ€1–ØOÕõ=Þ åOß / /)/¨ª¸ šã4ih&³ßi/
‰ _#FŒ áƒ/
Ñ¡ ¶më ¦O ª)Fv¿/ Ñ/ã/õ/ ? ?+?=?O? a?s?…?ãOõO _Í?, }iJ bO!O€ ~jŸ ± vOÕ öÿS
ŸÐO/Ÿ› èSŸ _šuE
Nurßse Caä Maÿnager Trÿaining Cÿurriculaÿ + Test ÿreferral
systemD_@V_h_z_Œ_ž_¼Soþt ¾\ •rÕ_õS¼-ó o o1oCo ˆ

%°ƒ‘IÿÀW%¬O @@¿>±Žs  G°2€  ,oPøR´*Öÿ  P=IÆ+Q{· †‘ ˆ -»rÝu °`u
e  ä¿b  u  ±
®’¶ € Âq"õ  ,›¸‹¸€ Âq õƒ‘±*‹² –± Ó³  ²›² ä´üÓ ¡ª#¬o¾a

ã Æ) Âo¾a ax-:´ö ý Ï @ @@’€ÿ¯JXß @@}ÿb ç Å @  ù¢ È Ç  Æ†ÃŽ¢‘Ï¸£Ê-
ÇºÏ  ‡Â ðÕÏçÉl(–q "-
ÙÏÆ•Ø×#{"Ò >ŸTb ÆÚÕk"ÒŽ?vÙ ‰%Óïk"Ò ^ÛÞDê°Ü¿`¨`qšulu “Ò‘{s  ,w  rÒ‘Æuö§Ør ¿X ¿šq
 U %‹*€Ÿ ä¤ šŸv  åS¾/ï “…GÉÐpþtÅQÂT¦Óƒ ©¯»¯Í®¦Ó?ãî¥&¯8¯ôõØTiI[É€ð?@ ·‡\V

”ê“eÿú?@Ø-rY1#PÒ“e=ðIóÂœf!²GÀ 8¡"ˆáª#!”  ,ö !úÆ–ö™“T±nrò xö ,ö ,ö‰ –öã÷ 8ÏÔl¡á
? e÷ e÷<qòhþ  \ ÜÍq ¾ü  {  Rv¿Qv¿ü"|  Þ£È
ÏÎEÕ¿`e"¸<áþ¤ Ìï ™v!µ¡á=å‘° á,ñ¾Q@¯ du½ –ñÈ „áq‰ï ¦Óv¢ï´ïÆïØïêïüïT

ÿ?ã™[É nfÌ“d+@ Ï Ü¥ òœ cü0ªÿ¾oç ’q  ï ª#™rƒö & sn )& ™tn =& un Q& ª "
&  &  & ª)& )& =& =& ÊQ& Q& &x  L?® &W ³ {Ð"?7Ðì  6Ôf÷còÐ(ÃÕkÐ"&¿Xò'‹%ïs
(û§ Á ÐÙ  a ýy± U !È  ½ )!‡7šu½ =!‡7Ð¥ ½ Q!‡3¾Q !“¯qàï

-Ð¯â¯ô¯ÍßßßÞ*¿4]ÈnfÄ“d€ôZ¸hc Y¸cúƒ¿•¿§¿¹¿Ë¿Ý¿ ï¿¯“Þð=v !Jy Vi NÏ åã¡M þ“gó

xï  …
  *T¨Ð#{ëR sÖ\ÕkëRÒ¤Iè`êïk  l«Ã VMgŒW ‡ÃNo `n~"íÃ|ojdœWŸoÂÀ  ßr|

,}d²ßÄßhO èßúß

ï-ïmïBïpy±I@ˆ  “–¡)!  —¬  O  „~A

‰)O$•COUO.  yO—tùpzk¶ÊVY¶k¶€™^cõ‡¡Öj_  çVŒ? 1bÄˆÑ+o=d æ?

˜Á÷_=h Ã)& –T)& Øa«Uäo{z tˆe!¨¡®5 b¯«RW  § €L Q

u T€0€ wS [‰ù‘ù‘\?2ƒ  J d¢a{vqs ¥÷ ~×,  ó‰Œ}^«aéx¯Ør ¯ œu"…±¯”„Ê¯Ü¯Ów q 4…^¯ ¿,¯ :¿5¤S¿l¯ w¿ã¯ p

«8D1P€›¥ÿMHF/DPH !id„Rd=¨”=¨—”þY‹ ' 2 Çq
pÀ¼šÒ Ð ð1½1å  ÷     - ? Q c u ¦‡Ž@ ® ÊVà¡EÐ,PÞÀÇ Ù ë ý  ‘à¿À

Ì Ÿ ×’$IÑÐâ4Ÿ ä?Ç ?~ìNŸ`ž =&z”=&ŠŸœŸ®ŸÀŸÒŸ äŸöŸ ¯ ¯,¯>¯P¯®¿ À¿Ò¿˜¯ûïLÙ ÿ-
¿ì¯ OÿMÚnÿ€ÿA¿¤ÿ}v¿ÿ +ÿ’¿õÿ

ÿ  + ì¾‰â

ÇDOW Ï%Ï7ÏIÏ [ÏmÏî3Ú1‰Ï›Ï-Ï¿Ï@ÑÏãÏõÏ ß ß‡Ž€ F
™†õ¬Žå¾ tß†ß˜ß  j'`š4i×Ö"ŸØßÿ
‰ #FŒ á òßp(‡SÚ1 éµ&.ï@ï Rïdïvïˆïšï¬ï¾ïÐï âïôïR d v <ÿ›?ì  ¹?Ñÿ ÿï?í

O Oåÿ DOe¿Â?zO? žO
OÂOð‡ í5A3 ÆTB Hÿealth Edÿucation ÿStrategyÿ & Campa ign³ Å × é û . -
G˜ vê44 1 ÿbâ2Dd m í5 „ €_’_ 8Ã » òFÛð">Ô€ >ÔÀ j–e Ÿeòš„€÷
&

· Ï ˆl’éQ ã> Lkcãf jhf÷f xQÌkc
v dhfv [ hf3v  1kcGvÆs .ªÓb Ùf ãf ãf ª÷f ÷f
v
v ªv v 3v 3v  Gv 2 s1/-!e6>– @L?^7|18 ë3£Uƒ 8
ïC> åQXƒ£Uf„÷a q‡í5f„xQ- Xƒf f„ qq‡x f„3qq‡æEf„H 1qƒ- w¨ -  2  o ofM•€’¤¶úà4

ˆd5G v“ÿ®
@@ü|Í3ÿ¿³ @@1úG¶Ž%XÖ©@Ð“À GÿPôñ{<}þó]¿†qˆ -¨Òu, û`uf€` äb ¯  u
¡
 ¦ +€ 11"dA  ¨ ¨‹€ 11 dC

¡ ¢
¡ P£ ¢ ¢a¤¯#@

‘ ã[ -!ã…¦ ù ê-!  X-ˆd{Hâ÷Ü ]Ä  XÐÿP. @@ïE$ÿ !
@@hà B—-9 @ v’ ƒ¨„§ …¦ ³
’

¿ º ª§7¿ˆp ² R¿d¹ÛØþ 1 cÔ¶Õ…fùÙ’+Ÿ²Hl 5

óxîD+Ÿ²¤pÇøç« Ú^+Ÿ²V a  ,Cí. Ï!í5Û/ †qñ'dB Â55s—G2,ŸX”Ÿ¿ €?U ”;*ïO a”Zs

^é9“ÅÐž¬ÏsC •  ¢
, x&8 %Ÿ@PIŸtúW¹Á{” -oèì6ž•Ã !^d.ºèÿ¢‹6 @@&öÿ e+Ø @@ÒßYØåHÏï ³³ÿÇŸõUÞ?@ÐôâÒ
°ëÒÎ?P´?ÈóJ Wæê! /Ä*/š- !Ñ¹)Eæ .þÉ¼°£!nz©¸û? ´·ÈKÅÎ†¿µ¶?  þ_â þÎ·o<4¸ '˜þvé%Í

ÏSn¦ü‰á”½Ö—¾ š•ýÐ«¿
ZTê¶Ë Cê&à 1£U ?#?5? G?Y?k?nÏ ?íOÿO _ #_é?UòÔ OhO¾ÿ9O âûüÓÞ³O
„O‡ÿ¨A C ¯ÿg âO’ÿ÷ÿ¯ *_üËS

ÛMHF/DP Hw_Uogo-_¿_ÑPr ÔRÁÛW ‘yÔô Ÿ;ß 8Ÿ_ßÔøg Œß3jô ¦ ùùÙ ÏÒf @@J¿çä›˜š –
d@ÿ÷?@ ²Êˆ¸[@øé”@çz%èÃk À  £³ ‰¯›-«&´¯ü$âÈ½^
ë6œfýÆß¿  „É+?ó Îî%™¸–Ÿ˜R÷Ì§ÓÒï /,þO—íëäù¿
Ï

-ÇC  *ÁqõF (,÷ + MÉF Y F mÏ ÅÓñþ„þåt`ÕË¹?ÿ@À „×ªŒöþ

ø- ×'À±~`

ù çð§Àø± ÓÿÞ x!é U  €ñ* @à |%`O Â » z´ ÆØêügŸyŸRÏ Ÿü¯œÏÓ @@Ôh÷ÿy - @@ã  5t(

¹e Á©Sâþé˜ ªÌNˆ=  ÀüŸ

¯ ¯2¯D¯V¯h¯ z¨åA¯/›-^fÚ/Æ¯ÈÚÿ @@ž=þ¬¯ñ2î ÏÓ÷
”ðFGS'  ¶^f]g ^f '´ãoõnƒg  m¶+ =yþ»íûÒ @³ Þþ<? !p  }þÄ¿  ðxGÀ ý8Þ¿
`˜*ö'ödéV?h? -È†2 ôA2ÏDÏh_É?zÏŒÏžÏ@·OÂÏp ©^… ÛG{"ß 4Ó—  _Pß&_tßJ_# Ä5 J,‘mŠg –
,€Vq$  •àé•  • Ð•&«  Ï ï$ï6ì Þ Ié ¦ Õqm á xŠ +À*ÅïáÈÅûï ÿ-
ÿ1ÿ CÿUÿG yÿ™OXO½O|O ;Où¥¨–
¿pO  @¿¦š _¿q¿o •¿z†°¿ ¿À  æ¿ÿ¯
Ï Ï -s

ÛFÿigure 1:ÿ  Activiÿties andÿ ReportiûngºÀlatioÿnships oÿf Partneÿrs TB Heÿalth
EduùcÈÂ¶ÂPromoŒîÂ¬Ç jCUg•BÒ¨Ic§;¤XßÅÐ3vÒãó¿’¡3²~Ö  þ  p’FÁíA|æOøO
_€ _._9ŸKŸ]ŸoŸˆ\ˆß Ák>"íðO ÿ“Ÿ¾U @@Pm˜ PÀ¯YgãÁY Ä>›  ?Vèt1 Ø_ê_ü_

o o2oDoVe€£ÑboÁ-
ö oŸo±dhÿ c#Ë®ì?@ÿh†ì †  @ÿ@\tÑE íûÿ?@6š:¿ö  Úf ö ÷  ö t¡ÿ€³þA÷ÎÿFvéÿûù%=:¿ªðK
›¢»„  ×à » JÔž ÿ Z Ê‘úçÊþ¸  Ô]u  7o  ÜÒ /¯ ÷  $ï ? Q c u Zİ™ , gî C-
ÛG}¤ß¶ßÈßÚßìßÀþß ïé 4ï^\^óö? @¹Š›

+{º ?™Y
  O,%7 ú`#èÂXØã²5m –ç’ï¤ï¶ïÈïÚïìï þïRiœ
ÿtm 6Kÿ]ÿú±d¸™P.Úë?@ÿwöø³¾Êü?"‡ôÿ ÿ 6 7  6 t š?¬>:7Ç?Fvâ?ô9+  iÄâ¤ÂÕºB ÿ
ªâR ¹#Òþ\  d÷š ”Â Îv ˆ š î ¾ Ð  / &/  *yN \`. <_Ô‡~ ¯ÁÓå`÷  /âO-/Fì-
]‰ðÿ› @@]!l ûfYT §«|Æë« ãg(¥ZbÓ€èH ~˜¿ÔÆú¿Œ/ ž/°/Â/Ô/æ/ø/ ø•Q@ ?2ý

vD?V?@dCHaý»M`¹BØ Ì2ÊŽð Ha{M`7Ò€ñ  À”3

v w

v·4“ €¥~3wÀ  Û íy+ ûŸ,þËÔ-æ‘E ·¿™‰ µ"ÑUO  _ú hVÂßoOÿ —Q6 ü

ÆT‰O›B ™,‘®  ®M E¿OÑO oõO _ _+_€z_O_ ”kc_h5Ÿ’   –_¨_º_Ì_Þ_ð_ oÛ ü&oFìÞ1
      Õž-ÿ @@Â¹g ýƒ] 2ÉeÈ9éêg(R£Úy(ƒ`ã Ð1'¢‹/–
o¨oºo ÌoÞoðo ùŽ‘  $} ¶ð= O @dzs @@<ß{üY_e]
¦ ÿžØ÷Á @@G?øÒ¨Þ  ˜ö ¶  ·  ¶·4Œ¿ž¾,·¹¿ð  Ô¿æ¹+ ½íÅ ÷k²ä4  ùx ïa .×N  ÇWßt8{Úçh
Z®(vùxFÁ… —  © » Í  ¯ñ  Ÿ Ÿ'Ÿ@9ŸKŸ ÑR®.ß„—€ Ÿ ¡Ÿ³ŸÅŸ×ŸéŸûŸÔÏ¯~1¬øÓ ;º|F ÿÌ

ºª'  @ @bP|zU  èë@dLâÒy(UO- tySÞ}¯ ¯¡¯³¯ Å¯×¯é¯ ù‡Ñ
¿$} öø6¿H¿Zº @@ájÿÝ^ …

@@ÙßJÃ¤.~y°¶®–ö4•

˜ö öÿç  ö·4…ÿ—þ%÷²ÿ  øÍÿßù+ @ ºs û©å-Ï ¶îÙÍ÷Ø÷áGÏ  ;À÷Ò+™`Ï  À--
D6 Dã{Ï ÏŸÏ ±ÏÃÏ ïçÏùÏ
ß ßlß@Aß  ]ãQè'„— ˆß šÓ)¡ß³ßÅß×ßéßÂ øÔ ïF%ÀÔ ·Éß>Ð?@Ø  È? 1$àg(2&{&
){ï ï Ÿï±ïÃïÕïçï

4€  ÿ $}ù&/ÿAÿ9¤  A) \5’5ù&ø' ù&·4~?  >-7«?ý6Æ?Ø9rH™  Ï-qê÷,Æü]C Ba‘Ñ ¢Æ Õ&
 O  GB5 w ‰  › - ¿  /ã õ  @+=.'J( _„—,3Q

…  ƒš˜R !¦Y€Á}Q×éÂO /æHùþ Tx~í!—
 òþ9 -rY1PÂ?ÿ@êüÚC.+ñˆ2ecà=cá2gg% òÀ!  ?*q)?*v yQý#ä.s¡f 0È’Q \ ŸÜÍq ®SKÆbe-
› :ºss ] Æhù¾@
Æb/Y“ß–ãwât ÿE|Ez ® Gáz„‹C WŸ@žAˆ

Q ÑtE  SÃ îR § €LŸ!¦E ìP0 ³GëQóY‘q‘qÇ ÿQšÑ

}QåOU ùK

Q

b __4Qob /94]öu=f  g[' 4UºUIŽFeb  t y×8QšÑò  P-  €Ñ 8QÌUö [  Ÿ Ž

ò9XåS3…Moniÿtoring aÿnd SuppoOrt jüT a åWPç…Ç ÿE7 •ÕxIfw¼>t ¯  !3%¢óq¿•q6,-
¦  þ¶P„
bI‘i—ÔÃŸÕŸÕx”øÕx|Dñ[ ' 2 KÇqª ¼‹BðòGìP ’Q !–Ñ“Ô—C7 ˜_¯-
€º[Ò§ÖWV¯h¯Õx-)©nL94#@[3€úRä»ÀýRä€ @v´ír~µó_f
bÏ œûâ0’Qý#¡f g 'ù¶Í¶3 7ù¶á¶ 8â¶õ¶˜ Rå³
      Æ Aâ¶ Æ Apâ¶1Æ\“ >©² ¯¶© ¡f°g Í¶ Í¶ *á¶ á¶ õ¶ õ¶TrToÃ Æ  Æ  Æ 1Æ¥ 1Æ …o—ae

d  g±åW&±óY Ñ Ñ¸ Êw ‘q’Q3…,
E‘yQ Ñ½£ ÿEhÔÍ±»¡½§dØá± × ºUhÔõ± ×ç…hÔI‘ × ÌUhÔ Ás×´uhÔ1Á Ó »¡h ÿQÇ¯Ù¯ë¯ý¯ h  ¿,
¿>¿ *E’ VöÛÿ @@bÂ SP÷  @Yó› @@ ;{üY_e áå¬ààìã  @š¼j}P É h ý#Bâ¶%ö (
â¶9öœ@ãµMö ó!å³"aö ž ä´uö À
Q¤ ‰ö  â¶ öŸrå³±ö  O¦Åö  R£Ùö1 eqå³íö -O¦  Q äQR£  Èu Çv#  |AR£=  ŒS a&Q  %O¦
e  ‘qR£&y  &O¦  Qå³f¡  +â¶µ  ,â¶bÉ  v!å³Ý  .â¶&ñ  /O¦  •qR£f  2O¦-
  9O¦fA  :O¦U  ;O¦fi  <O¦}  =O¦ ‘  Câ¶¥ 2ä[Q¹ Ñ ¢Aå³Í  Í  F â¶ë  ë º¢oÃ
      &ý’Ìå³ & JO¦1& KÄO¦E& „pQ¤Y& MLO¦m& NO¦ &  S&‘* Oâ¶©& `aR£&½& QO¦Ñ& hÑå³få
& Râ¶ù& SO¦" 6 ›‘R£!6 kqR£f56 VO¦I6 WO¦f]6 XO¦q6 YO¦f…6 wO¦™6 xâ¶š-6 -6 yâ¶Ë6 ™z
O¦ß6 |O¦ó6 ™}O¦ F 1O¦ F ™oO¦/F ~O¦CF
       O¦WF haR£kF^STJÎ ò  ö %ö %öU 9ö 9ö Mö MöU aö aö uö uöI ‰ö W  ö W ±ö¥ ±ö Å
öDW Ùö ’Ùö íölW
 €W ª  )  )  ª=  =  [  [  ªe  e  y  y  J  ¡
g µ U µ  É  É  Ý U Ý  ñ  ñ  ª„g #  #  -  ª-
  A  A  U  ªU  i  i  }  *}  ‘  ‘  ¥ $w• ¹  ¹  Íß  Tëý  &
      &  &¥  & 1&°w E& ªE& Y& Y& m& *m&  &  & •& ‡• ©& ©& ½&<‡ JÑ& Ñ& å&d‡ ù&¥ ù
&  6Œ‡ !6 ª!6 ?6 ?6 I6 ªI6 ]6 ]6 q6 ªq6  6  6 ™6  ™6À7¶?ôÀË6 Ë6 Té6^—
 ó6 ó6  FU  F %F %F 9FU 9F CF CF WF  WF kF¶¢ S÷Ï  Ù ¥ $DÐ Ô

y© ¤¥ (<ßNÛ Ñ eÐ  eÔÊàS

eÐMñ

eÐ £¡(eÐuñ‰ñ eÐ eÐ ñB A eÐ™áÅñÙñ  ä¤íñ
 eÐPÁ!eÐ"€eÐ=  e  Í±9ñ) eÐ¡ 5aÉ Ý ñ  # T%A-
 3 Ô5eÐ6eÐ€á±õ±A U i } ‘ >,eÐ?eÐ»Á Á%ñ\ßU %ñsßhÔ9ñ çšÜMñ-ß hÔañÊßhÔuñ çñÜ‰ñ  ïhÔ
 ñ ×8ÕhÔ™á × h¡dØÅñü·l¡dØÙñü· hÑdØíñ ×t¡dØ
 ü· x¡dØ  ü·MñdØ~áü· €¡dØ= ü·„¡dØw ü· añdØe ü·uñdØ

áü· ‰ñ è  ü·”¡ è¡ ü· ˜¡ è5aü· ñ èÉ ü·  A èÝ ü·¤¡ èñ ü· ™á\¸  ü·Åñ\¸# ü· Ùñ\¸-
 ü·´¡\¸A ü· ¸¡\¸U ü·íñ\¸i ü·
 \¸} ü·Ä¡\¸‘ ü· ŠD_µ¥ ü·Ì¡\¸¹ ü· Ð¡\¸Wqü·= \¸kqü·  \¸
      !ü·e \¸ !ü·  \¸1!ü·ä¡\¸E!ü· ÃA\¸Y!ü·ì¡\¸m!ü· ¡ \¸ !ü·5a\¸ü±ü· É \¸©!ü·Ý \
¸½!ü· ñ \¸Ñ!ü·  \¸`±ü· # \¸ù!ü·%A\¸ 1ü· - \¸« ü· ±\¸?1ü·  ±\¸I1ü· ±\¸]1ü·
±\¸q1ü·$±\¸ 1ü· (±\¸™1ü·Áa\¸-
‘ü· Õa\¸Ë1ü·éa\¸é1ü· ýa\¸ó1ü· q\¸ Aü· @±\¸%Aü·D±\¸9Aü· H±\¸CAü·L±\¸WAü· ¯A\¸õ‘ü³
€¡’µl¡% $C¦ü±… DƒTCq A
¯³ÿ(?ÿL¡89¯µF§ ÌµL¡hE¤P¡ŠA%¤@ÅPD¥P¡’µH¥›A¨‘¥Ó¶˜$

@˜$ä?˜$ jÀ5ØÉ5 À5È?= lH¡õ‘ ÏêB
1¢O’  O‘Aý2  F  ÿŸ‘A›EH¡wQ¨ÐN=w¢w  €Ùp@þlI¤  Á™a 0Ã åD¥ Á ÅÄH¯Z£‰¥H¯±YA  Šr¸H±µ
7–'¯@ B ” IZ þ B  © Q‹  ¸æKÑ6ýO¬Að  _ )U¯µ9_Õ4R_d_³W-Q ÌµæOž_
_Â_æ¸ß_K_è oo^ë)pø+Notÿe:  Doubÿle-headeÿd arrowsÿ represeÿnt partnÿerships ÿand singüŸo±fmajor ÿactivities. j¬´°A¸¡ %¤Ìµ¨I-
©•¥H§qYDÜ{%I  !3fró¿ È Ç ]°þ*0¬B˜!  ¥tëð4ïôêñ ûô  èó&
@èó!

éò  ö
ëð¤*ó _Ù‘  ëðA- -
D9ó ß7 úõ  @  ì2ó å‘  ;  R  Hëð<Üÿ  (
E  Ü4ó N’  R  \  ìS
î ë  Ý‡  Ó É  ì/î È‘  @ ?  ¤2ó
’  .  P D  ”4ó [’  .  P  U1ëðÿòð ëð(èó  ëð

Üÿ öñöñæõU ëð ëðO" D& aU= èóòñQ ÿÿJ  f  àû) êñh"  T ëð y ‡ êñ ¼ãø+  U- Ý x

_ É… -& !Q- ·
Ú H* 9 ( T Y öñg © Œ - … ßü- Ú ) ›
ãøE Qî ô /ßüõ…Š #Ô 0z ®_Gáz„?$ @´ » Guide TheDoc Page-
1 õ ëð ëðGestÿure Form at h ÿÿÿÿ 3 TSî ²“
E 3 dSî ¼“
E 3 tSî Ç“
E 3 „Sî Ò“ G ¥tëð4ïôêñ ûô èó&@èó!

éò ö
ëðL;ó _b″ ëðA- <3 h7 úõ %tëð4ïôêñ ÜÿÝþôþñþõ
ïñ9ó ¨¯″
ëðA-
,R3 ²7 þñAéò J
@ T9ó n″ : R

@ d8ó ´″ 3 R Hëð<Ü
ÿ (
Hëð<Üÿ (
J
E Ä:ó –
R
E ¬8ó
-- R {Ú ëð Îóðœæõ÷ó ëð
:ëð ëðg ' à9 K ] øýèóÒ ñ(† h èó(ûƒ

ÿ•ÿ¡â@(XýïLÇ÷¢-  ›bû”ïµ Ãß¦Xë¼µ ° p×¤ ßü¸«Aóåö çô ëð

¯Pó :ëðTëðB+  çôŽëð éò

õ®  ëðÔKó µÎëðyƒ  &ëðt/3ó Góð!  Ö µŒÿ hóð® >  ~ëð€Ô  ëðîïðF  ëðàÜ s  Ö F
ëðÕôç 0
ëðR å$çô;  x  ÿ.ëðL™íåö`M êñéW  )ëð¼*ó« Á  *—
'ëð¬ÿ í ‰’  hîëðP 1ëð4“íK ñí Á=  /2  ÿSî ê“  xú  ?ëð”5ó ç¹”Ü óðP DëðÜ¦1 +–
6%O/=çôU —
¦

## Section E3: Program Monitoring and Evaluation Plan

*Current and Planned NTP Data Management and M&E Strategy:*

The MHF has a special department for health statistics (the Center for Health Statistics) that issues annual reports on the major health indicators, while the National Institute for Statistics provides quarterly and annual reports on demographic, social and economic indicators. At present, none of these reports include all the information needed for monitoring and evaluating the implementation of the HIV and TB National Strategies and Programs.

Tuberculosis treatment outcomes data is monitored via the National Surveillance System managed by the Central Data Unit of the NTP. Progress in detection and cure rates is measured by comparing the reported number of new cases with the expected new number of cases (determined by previous years incidence rates and the annual risk of infection) as well as through routine cohort analyses of treatment outcomes performed by the NTP using the WHO format.

For the implementation of GFATM-funded TB strategies, the Country Coordinating Mechanism will establish a special Monitoring and Evaluation Unit. This Unit will be part of the Institute for Health Services Management (IHSM) under the MHF. This special M&E Unit will annually review routine health statistics (morbidity and mortality data) collected by the MHF's national Center for Health Statistics. DOW will request TB data from the M&E Unit, as needed for monitoring treatment outcomes in the project sites.

The MHF methodology for national data collection is population-based surveys on specific issues, target populations and/or in those regions where there is no reliable data. There will also be monthly monitoring of case management (diagnosis and treatment), training, logistics, communication and advocacy, by record and report (by the implementing institutions), review, direct observation, interviews with health workers and patients. Depending on the specific data, the responsibility for its collection lies with a variety of health workers (including TB specialists and GPs) reporting to the County Public Health Authority, which in turn reports to the MHF.

Data will eventually be gathered at the Institute of Health Services Management (IHSM), where a four-member Global Fund Monitoring Office will be established. The GFMO's main activities will be to review routine health statistics, monitor the activities of the implementing institutions, review health indicators, and provide consultancy to implementing agencies on IEC materials.

All TB interventions will include self-monitoring instruments, first to design the interventions tailored to the needs of the target populations, second to pilot the interventions, and third to monitor the impact of that intervention. In all three phases the target population will be directly involved, especially in the design and monitoring of the intervention.

The NTP will assure TB cohort data quality through a variety of quality control measures, such as: training for data collection, random re-collection of data, record verification, subsequent visits to the original data collected sites, and direct observation of the data collection process.

*DOW's Project M&E Strategy:*

Progress on DOW activities in participating clinics and project sites will be measured through process monitoring and outcome evaluations. All M&E activities will be initially conducted by DOW staff unless otherwise noted. DOW will conduct on-the-job training of appropriate partner agency staff during the second project year to transfer M&E skills. A summary of M&E activities with indicators, data sources and timeframe is attached as Annex 7: M&E Workplan.

***Knowledge, Attitudes, Behavior and Practice (KABP) Surveys***: KABP surveys were developed and used during the initial assessment to identify providers', TB patients' and high risk groups' experience of TB, and provided the baseline for all intervention activity design. (See Annex 3 for survey development and verification methods.) Major intervention categories were determined to be barriers to health care access, treatment seeking behavior and the need for health education. A more detailed description and analysis of these results is presented in Section E1. These KABP surveys will be re-administered during the 3rd quarter of Year 3 with the same target groups in order to determine the degree of change due to the IEC campaigns among high-risk groups and the general population. Survey results will be shared back with DOW staff and appropriate local partners to inform intervention modifications as necessary.

***Cohort Analysis***: DOW will use cohort data collected by NTP to monitor the progress of treatment outcomes in the project sites. Successful treatment outcomes will be measured as number of people cured and number completing treatment. The number of defaulters will be recorded as an indicator of effectiveness of targeted BCC activities. Cohort data will be collected on a quarterly basis from the TB County Managers and on an annual basis from the Central Statistical Unit of the NTP. Data analysis results will be shared with health providers and DOW staff to inform training, IEC, and case management activities.

Key indicators include:

- Percent of TB patients who complete treatment (data will be disaggregated by target population)
- Percent of female TB patients who default during intensive phase (leave hospital before intensive treatment phase is complete)
- Percent female patients who complete home treatment regiments

***Provider Training Assessments***: Training assessments will be conducted by DOW staff to evaluate the quality of training curricula (not provider performance). Evaluation methods will include comparisons of participants' knowledge, attitudes and practices pre- and post-training. These assessments will be conducted through short surveys and direct observation of provider performance in training exercises. Feedback from training assessments will be provided to facilitators and trainees on an ongoing basis to improve training quality. Patient surveys on quality of care and direct observation of provider care practices post-workshop will also feed into Training Evaluations. Refresher trainings will be conducted on an annual basis, or as determined by MHF and NTP staff and survey results.

Key indicators include:

- Expansion and improvement of skills of trainees
- Feedback from participants
- Improved quality of care after training

***Clinic Provider Performance Evaluations:*** Clinic health providers (GP's and nurses) will be evaluated for quality of care delivered to TB patients post-training. Since GP and nurses' attitudes toward and treatment of patients is an important factor in patient's ability to adhere to treatment, DOW staff (Health Education Coordinators) will use direct observation to determine if patient-provider interactions improve after both patient and provider education. NTP supervisors will evaluate TB health providers' clinical performance after re-training, however DOW will monitor providers' capacity to educate patients about TB and its treatment. Effective use of incentives for both patients and providers will also be evaluated via patient records of treatment completion rates and interviews. Criteria for improvement will be established in a participatory manner with the target beneficiaries during training activities and feedback mechanisms will also be established. The purpose of this activity will be to improve training protocols and provide feedback to providers rather than to conduct a performance evaluation. Evaluation methods will include direct observation of provider-client interaction, patient records, and client exit-interviews.

Key indicators include:

- Number of providers trained in conducting BCC activities and incentives use *(training records)*
- Quality of provider sensitivity to client's needs and circumstances *(observation)*
- Quality of TB patient counseling on management of treatment barriers *(observation, patient interviews)*
- Quality of provider delivery of TB information to patient *(observation)*
- Percent TB patients showing improved knowledge and attitudes of TB and its treatment *(exit interviews)*
- Effective use of incentives *(provider and patient interviews, patient records)*
- Percent who feel confident they will complete treatment *(exit interviews)*
- Percent change of participating providers' TB patients who complete treatment regimen *(patient records)*

***Case Manager Performance Evaluations:*** Case managers are field staff that include Roma Health Mediators and Community Nurses, and work mainly outside clinic settings. Their goals are to lower continuation-phase default rates through patient referrals to clinics, counseling patients on managing treatment barriers, incentives distribution, and patient follow-up. Case manager performance will be evaluated via patient record review, direct observation and client interviews.

Key indicators include:

- Number of Roma Health Mediators and Peer Health Educators trained
- Percent of TB patients with a case manager *(patient records)*
- Percent of continuation-phase ex-prisoners visited by a case manager *(patient records, interviews)*

- Quality of provider sensitivity to client's needs and circumstances *(observation)*
- Quality of provider delivery of TB information to patient *(observation)*
- Percent TB patients showing improved knowledge and attitudes of TB and its treatment *(patient interviews)*
- Quality of TB patient counseling on management of treatment barriers *(observation, patient interviews)*
- Effective use of incentives *(provider and patient interviews, patient records)*
- Percent who feel confident they will complete treatment *(patient interviews)*

***Health Facility Surveys***: These surveys will focus on the material resource components of health facilities and support staff practices, measuring patient IEC capacity and quality of support staff's treatment of TB patients in health care facilities. Patient surveys will be designed by DOW with patient input and pre-testing. Checklists of IEC supplies will be used to evaluate IEC materials quantities. Surveys will be conducted and results fed back to clinic administrators.

Key indicators include:

- Comparative wait time of TB patients by target population *(patient interviews)*
- Treatment of TB clients by facility staff *(observation and patient interviews)*
- Sufficient time available for patient to spend with provider *(patient interviews)*
- Number of booklets/brochures available in clinics *(observation)*
- % of total TB patients who are eligible for incentives (need)
- % of eligible TB patients receiving incentives in a timely manner (process)
- % of qualifying patients receiving incentives who complete treatment (outcome) as compared to % who complete treatment without incentives

***Target Population IEC Surveys:*** DOW will conduct IEC activities to improve general TB knowledge and reduce TB stigma among patient and student populations as well as among the general public in program sites. Target populations will be educated via IEC and BCC materials on general TB knowledge and the benefits of completed treatment. Primary and secondary school teachers will also be trained and supplied with materials to educate students about TB. Surveys will be conducted among patients and students, will indicate progress of the IEC strategy in improving patient and student knowledge and reduction of stigma.

Key IEC Process Indicators include:

- Number of primary and secondary school teachers trained in student TB IEC
- Number of students receiving TB education
- Number of radio/TV spots produced
- Number of radio spots broadcast per month
- Number of booklets/brochures produced/distributed

Key IEC Service Indicators include:

- Percent of target populations that knows at least 3 symptoms of TB
- Percent of target populations who know transmission routes of TB
- Percent of target populations who know that TB is contagious, fatal and treatable
- Percent reduction of stigma attitudes in target populations

## Section E4: Workplan

**PROJECT GOALS:**

1. To improve treatment success rates among TB patients from vulnerable groups.
2. To build the capacity of the Romanian NTP to provide effective health education and community outreach services.

| MAJOR ACTIVITIES | Time Frame | Personnel | Benchmarks/Targets |
|---|---|---|---|
| **PROJECT DESIGN** | | | |
| ***Project Objective 1: Develop a national TB and DOTS health education strategy with the MHF*** | | | |
| | | | |
| **1.1** Develop NTP and DPH's capacity to collaboratively disseminate TB information to general Romanian population to increase TB knowledge | Year 1 Quarter 4 to Year 2 Quarter 4 | DOW staff, NTP, PSI, DPH staff | Strategy developed and tested |
| 1.1.1 Formation of health education working group | Year 1 Quarter 4 | " | Working group formed |
| 1.1.2 Health education needs assesment | Year 2 Quarter 2 | Health Education Working Group | Assessment completed |
| 1.1.3 Development of IEC strategy | Year 2 Quarter 3-4 | " | IEC strategy developed |
| **1.2** Launch mass media campaign around World TB Day targeting vulnerable groups as well as general population | Year 2 Quarters 1-3 | NTP, DPH and DOW | IEC strategy launched |
| 1.2.1 Produce materials for WTBD | Year 2 Quarters 1-3 | " | Materials produced |
| 1.2.2 Execution of World TB Day IEC Campaign | Year 2 Quarter 3 | " | Campaing executed |
| **1.3** Train primary and secondary school teachers in TB and in training other teachers | Year 2 Quarter 2 to Year 3 | NTP, MOE, PSI, DOW | 156 Bucharest (Sector 5) & Ilfov 164 Neamt |
| 1.3.1 TB Training Curriculum development | Year 2 Quarters 2-3 | NTP, MOE, PSI, DOW | Training curriculum developed |
| 1.3.2 Train teachers in delivery of TB messages | Year 2 Quarter 4 | " | Training completed |
| 1.3.3. Provide TB health education to students | Year 3 | " | Provision of education - 50 students per teacher |

| MAJOR ACTIVITIES | Time Frame | Personnel | Benchmarks/Targets |
|---|---|---|---|
| ***Project Objective 2: Strengthen and develop the knowledge and skills of health providers to communicate and support patients in*** | | | |
| | | | |
| **2.1** Enable primary care providers involved in TB service delivery to ensure that TB patients are adequately educated and complete treatment | Year 2 to Year 3 | DOW, NTP, TB County Managers, GPs, family medicine nurses | Providers delivering health education messages to 100% of TB patients in their patient roster |
| 2.1.1 Hiring of DOW Training Coordinator | Year 1 Quarter 4 | DOW | Training Coordinator hired |
| 2.1.2 Review provider KABP survey results | Year 1 Quarter 4 | DOW, NTP | In-depth review completed |
| 2.1.3 Develop the training curricula for and train GPs and Family Medicine Nurses in the delivery of health education messages and improved DOTS outreach and promotion | Year 2 Quarter 1-2 | DOW, NTP, PSI | Training curricula developed |
| 2.1.4 Train GPs and nurses in relevant TB and DOTS health education protocol using curricula developed in collaboration with NTP and local stakeholders | Year 2 Quarter 3 | DOW, NTP | At least 300 GPs and 300 nurses trained |
| **2.2** Develop and implement a TB case management system (involving community health nurses and Roma Health Mediators) to ensure high risk patients complete treatment | Year 2 to Year 3 | DOW, NTP, Romani CRISS, MOJ | Case management system estabished and results reviewed |
| 2.2.1 Formation of case mgt team | Year 2 Quarter 1 | Case Management Working Group | Case management working group formed with relevant expertise |
| 2.2.2 Hiring of Health Ed Coord. | Year 1 Quarter 4 | " | Heath Education Coordinator hired |
| 2.2.3 Review of patient KABP survey data | Year 2 Quarter 1 | " | |
| 2.2.4 Develop the TB IEC and BCC curricula for community health network providers including community health nurses, Roma Health Mediators and Peer Health Educators | Year 2 Quarter 1-2 | NTP, Dow, Romani CRISS, Roma Counselor to MHF, RHMs, PHEs | Curricula developed and tested |
| 2.2.5 Train Roma health mediators in basic DOTS knowledge on second phase treatment, including TB treatment access, referrals, follow up and patient support in Bucharest (Sector 5), Ilfov and Neamt | Year 2 Quarter 3 | " | Training completed for 40 RHMs and PHEs |

| MAJOR ACTIVITIES | Time Frame | Personnel | Benchmarks/Targets |
|---|---|---|---|
| 2.2.6 Train community health nurses in basic DOTS knowledge on second phase treatment, including TB treatment access, referrals, follow up and patient support in Bucharest (Sector 5) and Ilfov | Year 2 Quarter 3 | " | Training completed for 10 community health nurses |
| 2.2.7 Train community health nurses in basic DOTS knowledge on second phase treatment, including TB treatment access, referrals, follow up and patient support in Neamt County | Year 2 Quarter 3 | " | Training completed for recruited community health nurses (6-8) |
| 2.2.8 In Neamt, advocate with MOH and Neamt Public Health institutions to identify additional community health nurses for the county | Year 2 Quarters 3-4 to Year 3 Quarter 1 | " | 6-8 community health nurses recuited |
| ***Project Objective 3: Strengthen and develop TB knowledge in vulnerable groups, along with systems and approaches, to support treatment*** | | | |
| | | | |
| **3.1** Evaluate existing TB IEC practices and materials and develop new materials and related dissemination schemes | Year 1 Quarter 4 | NTP, DOW, PSI, Romani CRISS | Evaluation compelted and reported |
| **3.2** Develop strategies to implement Information Education Communication (IEC) and Behavior Change and Communication (BCC) activities to increase continuation phase DOT compliance for Roma populations | Year 2 Quarters 2-3 | " | Strategies developed and tested |
| 3.2.1 Recruit PHEs | Year 2 Quarters 2-3 | DOW, Romani CRISS, Roma Counselor | PHEs recuited |
| 3.2.2 Design collaborative advocacy strategies | " | " | Advocacy strategic plan completed |
| 3.2.3 Conduct community based health education sessions | Year 2 Quarter 4 to Year 3 | RHMs, PHEs | Quarterly one health education session/RHM or PHE |
| 3.2.4 Outreach to Roma populations | Year 3 | " | " |
| **3.3** Develop strategies to implement Information Education Communication (IEC) and Behavior Change and Communication (BCC) activities to increase continuation phase DOT compliance for ex-prisoners | Year 2 Quarters 1-2 | DOW, MOJ, NTP | Strategies developed and tested |
| 3.3.1 Recruit nurse case managers | Year 2 Quarter 1 | " | 6 nurse case managers recruited |

| MAJOR ACTIVITIES | Time Frame | Personnel | Benchmarks/Targets |
|---|---|---|---|
| 3.3.2 Develop training curriculum for planned nurse case managers | Year 2 Quarter 1-2 | " | Curricula developed and tested |
| 3.3.3 Train Nurse Case Managers | Year 2 Quarter 2-3 | " | 6 nurse case managers receive extensive training |
| 3.3.4 Create referral linkages between prison staff and nurse case managers | Year 2 Quarter 1-2 | " | Referral links established according to MOJ strategy |
| 3.3.5 Assign newly released prisoners to nurse case managers in Bucharest and Neamt | " | " | Each newly released prisoner assigned to a nurse case manager |
| 3.3.6 Provide patient education, counseling, follow up | Year 2 Quarter 4 to Year 3 | Nurse Case Managers | 100% of ex-prisoners receive education |
| **3.4** Develop strategies to implement Information Education Communication (IEC) and Behavior Change and Communication (BCC) activities to increase continuation phase DOT compliance for TB patients with support for their families | Year 2 Quarters 1-2 | NTP, TB County Managers, DOW, PSI, Provider representatives | Strategies developed and tested |
| **3.5** Initiate a policy level dialogue with NTP at the national level and with TB County Managers at the county level to develop a system for case managers | Year 2 | DOW, NTP, TB County Managers | Case management working group meeting regularly with national NTP staff |

| MAJOR ACTIVITIES | Time Frame | Personnel | Benchmarks/Targets |
|---|---|---|---|
| ***Project Objective 4: To increase treatment adherence for TB patients by providing incentives for treatment completion, including coupons for*** | | | |
| | | | |
| **4.1** Workshop with NTP staff, TB County Coordinators and Local Health authorities to assess scope of incentives and provision to patients | Year 1 Quarter 3 | DOW, NTP, TB County Managers, TB Specialists | Workshop held and documented, Workplan for working group completed |
| 4.1.1 Gather existing information on incentive programs for TB in Romania | Year 1 Quarter 3 | DOW | Current incentives situation documented |
| 4.1.2 Create working group with NTP and other stakeholders to collaboratively develop incentives strategy | Year 1 Quarter 3 | DOW, NTP, TB County Managers, TB Specialists | Working group created with relevant members |
| **4.2** Review and finalization of the Incentives Reporting Form by DOT providers, including TB specialists, TB nurses and County Coordinators | Year 1 Quarter 4 | Incentives working group | Form created, reviewed and finalized |
| **4.3** Incentives Procurement | Year 2 Quarter 1-2 | " | Incentives procured |
| **4.4** Distribution of coupons to TB County Managers in target counties | Year 2 Quarter 1-2 | " | Incentive coupons distributed to each TB County Manager in project site |
| **4.5** Distribution of coupons to TB patients in continuation phase treatment according to the schedule for distribution established in the initial workshop. | Year 2 Quarter 2-4 to Year 3 Quarter 1-2 | Providers | Incentive coupons distributed to each TB patient in project site according to established criteria |

# ANNEXES

## Annex 1: Response to Application Debriefing

This annex provides feedback on the comments of the reviewers of the original DOW proposal. Responses are given for weaknesses noted. Since there are considerable changes to this DIP from the original proposal (see Section D), comments that are no longer valid (due to exclusion of some objectives) are not addressed.

Budget Information

- Travel arrangements to the Mini-DIP University have been accounted for in the budget. Costs are supported for the Program Manager from HQ (New York) and a Project Coordinator from Romania (Bucharest) to attend the sessions.

- There is no budget for DOW mentoring of PSI and technical assistance will be provided on an ad hoc basis. A copy of the mentoring agreement is attached in Annex 6.

- The majority of the budget now addresses community level activities due to a change in the focus of the project to community-based DOTS.

Description of the PVO Applicant

- DOW is now registered to operate legally in Romania.

Situation Analysis

- In addition to NTP, DOW will now work with the following partners: the Department of Public Health within the MHF, Romani CRISS, the Ministry of Justice, and the Ministry of Education. Synergies with other programs of these partners are identified in the DIP narrative. Examples include integration of TB health education into the partners' existing strategies as well as support to the MOJ for implementation of their referral program for ex-prisoners with TB. A description of the Roma is included.

- Furthermore, DOW will seek to collaborate with other local NGOs such as the Romanian Red Cross as seen feasible in the scope of the project.

Program Strategy and Interventions

- The Red Cross is no longer a formal partner due to the expansion of community based DOT activities for which DOW needs to work closely with NTP, DPH, MOE and MOJ. Local NGO Romani CRISS has also become a formal partner. DOW will explore the feasibility of partnering with the Red Cross at which time a working agreement will be drawn and shared with USAID.

- See comment in Situation Analysis above about program synergies.

- Training activities and approaches, along with intended outcomes are presented in Table 1 in section E2.

.

- A SOTA database will no longer be developed due to aforementioned changes in the focus of the project.

Performance Monitoring and Evaluation Plan

- There is a detailed description of the baseline assessment methodology in Section E1 as well as correlating program activity development in Section E2.

Management Plan

- Backstopping and areas of technical assistance are included with CVs in Annex 5

## Annex 2: Program Matrix

| OBJECTIVES | MAJOR PLANNED ACTIVITIES | INDICATORS | MEASUREMENT METHODS/DATA SOURCES |
|---|---|---|---|
| ***Objective 1:***<br><br>**Develop a national TB and DOTS health education strategy with the MHF.** | 1.1 Develop NTP and DPH's capacity to collaboratively disseminate TB information to general Romanian population to increase knowledge of TB including recognition of symptoms, modes of transmission, importance of seeking behavior and reduction of stigma.<br>1.2 Launch a mass media campaign around World TB Day targeting vulnerable groups as well as general population.<br>1.3 Train primary and secondary school teachers in Bucharest/Sector 5, Ilfov and Neamt to teach school children about TB and dispel prevailing stigmatic myths. | 1.1.1. Formation of health education working group<br>1.1.2. Health education needs assesment<br>1.1.3. Dev of IEC strategy<br>1.2.1. Number materials produced for WTBD<br>1.2.2. Execution of World TB Day IEC Campaign<br>1.3.1. TB ToT Curriculum development<br>1.3.2. # teachers trained in delivery of TB messages<br>1.3.3. # students receiving TB education | Strategic planning documents<br>Survey results report<br>Completed TB IEC Strategy<br><br>World TB Day report<br><br>ToT records<br>School records |
| ***Objective 2:***<br><br>**Strengthen and develop the knowledge and skills of health providers to communicate and support patients in completing TB treatment.** | 2.1 Enable primary care providers involved in TB service delivery to ensure that TB patients are adequately educated and complete treatment.<br><br>2.2 Develop and implement a TB case management system (involving community health nurses and Roma Health Mediators) to ensure high-risk patients complete treatment. | 2.1.1. Hiring of Training Coordinator<br>2.1.2. Provider KABP surveys<br>2.1.3. Dev of Training Curriculum<br>2.1.4. Number of providers trained<br>2.1.5. Improved provider knowledge, communication, care skills<br>2.1.6. Improved patient treatment adherence<br>2.2.1 Formation of case mgt team<br>2.2.2 Hiring of Health Ed Coord.<br>2.2.3 Patient KAP surveys<br>2.2.4 Dev of training materials<br>2.2.5 # PHEs, nurses trained<br>2.2.6 Improved patient care<br>2.2.7 Increased patient treatment adherence | Signed Trainer contract<br>Completed curriculum<br>Training records<br>Direct provider observation<br>Patient KA surveys<br>Patient records<br><br>Stakeholder meeting minutes<br><br>Health Ed Coord. contract<br>KAP survey results report<br>Materials produced<br>Training workshop records<br>Patient KA surveys<br>Patient records |

* Health providers include general practioners (GPs), family medicine nurses, community health nurses and Roma Health Mediators/Peer Health Educators.
** Vulnerable populations include Roma, ex-prisoners, poor population, TB patients and their families.

NCMs = Nurse Case Managers CHN = Community Health Nurse SOPs = Standard Operating Procedures
QOC = Quality of Care IEC = Information and Education Campaign BCC = Behavior Change Communication

## Annex 2: Program Matrix

| OBJECTIVES | MAJOR PLANNED ACTIVITIES | INDICATORS | MEASUREMENT METHODS/DATA SOURCES |
|---|---|---|---|
| ***Objective 3:*** **Strengthen and develop TB knowledge in vulnerable groups, along with systems and approaches, to support treatment completion.** | 3.1 Evaluate existing TB IEC practices and materials and develop new materials and related dissemination schemes.<br>3.2 Develop strategies to implement IEC and BCC activities to increase continuation phase DOTS adherence for Roma populations.<br>3.3 Develop strategies to implement IEC and BCC activities to increase continuation phase DOT adherence for ex-prisoners.<br>3.4 Develop strategies to implement IEC and BCC activities to increase continuation phase DOTS adherence for TB patients with support for their families.<br>3.5 Initiate a policy level dialogue with NTP at the national level and with TB County Managers at the county level to develop a system for case managers. | 3.1.1. Inventory of existing TB IEC materials<br>3.1.2 #s and types of materials available<br>3.2.1. # of new PHE's recruited (goal: 8 RHMs, 15 CHNs)<br>3.2.2 # of collaborative advocacy strategies produced<br>3.2.3 Improved case ID rates<br>3.2.4 Improved treatment completion (goal: 85%) and cure rates (goal: 70%)<br>3.3.1 # NCMs recruited (goal: 6)<br>3.3.2 NCM Training curriculum<br>3.3.3 # NCMs trained<br>3.3.4 Improved patient education, counseling, follow up<br>3.4.1 Amount of TB health ed materials available at clinics<br>3.4.2 # CHNs trained<br>3.4.3 Increased # project site CHNs<br>3.5.1 Establishment of Case Management Working Group | Stakeholder meeting minutes<br>PHE rosters<br>Completed advocacy strategy documents<br>TB surveillance data<br>Clinic and patient records<br>NCM rosters<br>Completed NCM Training curriculum<br>NCM Training records<br>Patient QOC surveys<br>Patient treatment records<br>Clinic assessments<br>CHN Training records<br>CN rosters<br>Stakeholder meeting minutes<br>Case Mgt Working Group charter |

[*] Health providers include general practioners (GPs), family medicine nurses, community health nurses and Roma Health Mediators/Peer Health Educators.
[**] Vulnerable populations include Roma, ex-prisoners, poor population, TB patients and their families.

NCMs = Nurse Case Managers CHN = Community Health Nurse SOPs = Standard Operating Procedures
QOC = Quality of Care IEC = Information and Education Campaign BCC = Behavior Change Communication

## Annex 2: Program Matrix

| OBJECTIVES | MAJOR PLANNED ACTIVITIES | INDICATORS | MEASUREMENT METHODS/DATA SOURCES |
|---|---|---|---|
| ***Objective 4:***<br><br>**To increase treatment adherence for TB patients by providing incentives for treatment completion, including coupons for transportation, food and hygiene products.** | 4.1 Workshop with NTP staff, TB County Coordinators and Local Health authorities to assess scope of incentives and provision to patients.<br>4.2 Review and finalization of the Incentives Reporting Form by DOT providers, including TB specialists, TB nurses and County Coordinators.<br>4.3 Incentives Procurement<br>4.4 Distribution of coupons to TB County Coordinators in target counties.<br>4.5 Distribution of coupons to TB patients in continuation phase treatment according to the schedule for distribution established in the initial workshop. | 4.1.1 Creation of incentives stakeholder network<br>4.1.2 Development of incentives pilot program<br>4.1.3 Identification of county-level incentives working groups<br><br>4.2.1. Completed test and review of patient selection and treatment outcome forms and SOPs<br><br>4.3.1. Retailer survey for incentives supply<br>4.3.2. Retail supply contract agreements<br><br>4.4.1. Number of incentives coupons distributed to TB County Managers<br><br>4.5.1 Development of distribution schedule and action plan<br>4.5.2 Number patients receiving incentives<br>4.5.3 Finalized selection criteria<br>4.5.4 # incentive items procured<br>4.5.5 Improved treatment outcomes | Incentives stakeholder network mission statement<br>Completed incentives pilot program implementation plan<br>Working group rosters and charters<br><br>Test and review reports<br>Finalized patient selection and treatment outcome forms<br>Completed SOP document<br><br>Survey results report<br>Signed contracts<br><br>TB County Mgr incentives inventory records<br><br>Completed distribution schedule and action plan<br>TB County Mgr patient distribution lists<br>Incentives inventory lists<br>Selection criteria protocol<br>Patient records |

[*] Health providers include general practioners (GPs), family medicine nurses, community health nurses and Roma Health Mediators/Peer Health Educators.
[**] Vulnerable populations include Roma, ex-prisoners, poor population, TB patients and their families.

NCMs = Nurse Case Managers CHN = Community Health Nurse SOPs = Standard Operating Procedures
QOC = Quality of Care IEC = Information and Education Campaign BCC = Behavior Change Communication

## Annex7: Monitoring and Evaluation Plan

| | Objectives/Activities | Indicators | Data Source | Collection Frequency | Responsible Party |
|---|---|---|---|---|---|
| **Activity A: Monitor the progress of treatment outcomes in the project sites (Cohort Analysis)** | | | | | |
| **A.1** | Collect NTP cohort data for cure and treatment completion rates | % of TB patients who complete treatment (by target pop) | NTP Central Statistical Unit | Quarterly | DOW Staff |
| **A.2** | Collect hospital records for trends in defaulting female patients | % of female TB patients who default during intensive phase | Hospital records | Quarterly | DOW Staff |
| **A.3** | Review case manager records for completion rates of female home treatment patients | % female patients who complete home treatment | Case Manager records | Quarterly | Case Managers, DOW Staff |
| **Activity B: Evaluate the quality of training curricula** | | | | | |
| **B.1** | Conduct pre- and post-workshop skill assessments of trainees | Improvement of trainee skills | Pre- and post-training-assessments | Pre-,post-Workshop | Workshop Facilitators |
| **B.2** | Conduct trainee assessment of workshops | # with positive training experience | Participant evaluations | Post-workshop | Workshop Facilitators |
| **B.3** | Patient surveys of quality of care | Patient satisfaction increased | Patient exit surveys | Monthly 1st year, Quarterly after | DOW staff |
| **B.4** | Direct observation of provider care | Provider care improved | Observation reports | Monthly 1st year, Quarterly after | DOW staff, TBCMs |
| **Activity C: Evaluate Clinic Provider Care Practices** | | | | | |
| **C.1** | Direct observation of care practices | Improved quality of care (education and counseling techniques) | Observation reports | Monthly 1st year, Quarterly after | DOW staff, TBCMs |
| **C.2** | Patient satisfaction increased | Patient satisfaction increased | Patient surveys | Monthly 1st year, Quarterly after | DOW staff |
| **C.3** | Conduct patient TB KABP surveys | Improved TB knowledge, attitudes, care practices | Patient TB KABP surveys | Quarter 3, Year 3 | DOW staff |
| **C.4** | Evaluate provider use of incentives | Improved provider compliance w/ DOTS protocol | Provider records | Monthly 1st year, Quarterly after | DOW staff, TBCMs |
| **C.5** | Evaluate patient use of incentives | Improved patient DOT adherence | Patient records, interviews | Monthly 1st year, Quarterly after | DOW staff, TBCMs |

| | | | | | |
|---|---|---|---|---|---|
| **Activity D: Evaluate Case Management system** | | | | | |
| **D.1** | Measure number of health providers trained as case managers | # of NCMs trained<br># of RHMs/PHEs trainees in case management | Workshop records | Post-workshop | Workshop facilitator |
| **D.2** | Measure number patients with case manager | % of patients with a case manager | CCM records | Monthly 1st year, Quarterly after | DOW staff, TBCMs[1], Romani CRISS |
| **D.3** | Measure number of cont-phase ex-prisoners visited by case managers | % cont-phase ex-prisoners with case manager, % complete treatment | CCM records, patient records | Monthly 1st year, Quarterly after | CMs, TBCMs, DOW staff |
| **D.4** | Evaluate patient TB KABP | Improved TB knowledge, attitudes, care practices | Patient TB KABP surveys | Year 3 | DOW staff |
| **D.5** | Direct observation of care practices | Improved quality of care (education and counseling techniques) | Observation reports | Monthly 1st year, Quarterly after | DOW staff, TBCMs |
| **D.6** | Evaluate patient use of incentives | Increased patient DOT adherence | CM and patient records, patient interviews | Monthly 1st year, Quarterly after | CMs, DOW staff |
| **Activity E: Monitor IEC Process** | | | | | |
| **E.1** | Measure level of knowledge of target populations about TB and DOTS | % who know at least 3 symptoms of TB<br>% who know TB transmission<br>% who know TB is contagious<br>% reporting reduction in stigma | Patient interviews, family interviews, KABP surveys | Quarterly Year 3 | DOW staff, PSI, Romani CRISS |
| **E.1** | Measure number of teachers trained in IEC | Number of teachers trained | Workshop records | Post-workshop | Workshop facilitator, DOW Staff, PSI |
| **E.2** | Measure number students receiving TB IEC | Number of students receiving IEC | School records | Quarterly starting Year 2 | Schools, DOW staff, PSI |
| **E.3** | Measure # media spots, materials produced | Number media spots, materials produced | Production records | Quarterly starting Year 2 | DOW staff, DPH, PSI |
| **Activity F: Evaluate IEC Impact** | | | | | |
| **F.1** | Conduct target pop TB KABP surveys | Improved TB knowledge and attitudes (symptoms, transmission, treatment, stigma) | Target pop TB KABP surveys results | Quarter 3,Year 3 | DOW staff, NTP, PSI, Romani CRISS |

[1] NTP = National TB Program
CHN = Community Health Nurses
RHM = Roma Health Mediator
NCM = Nurse Case Manager
GP = General Practitioner (M.D.)
TBCM = TB County Manager
RHM = Roma Health Mediator
TBCM = TB County Manager
PHE = Peer Health Educators