

Rural Healthcare in Eastern Ukraine: A Needs Assessment Analysis of the Izyum District

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Executive Summary

According to Article 49 of Ukraine's Constitution, "*Everyone has the right to health protection, medical care and medical insurance. Health protection is ensured through state funding of the relevant socio-economic, medical and sanitary, health improvement and prophylactic programs.*"¹ Since Ukraine's independence, it has been difficult to meet this constitutional mandate, especially for the rural clinics, commonly known as ambulatories. Although many reforms have been initiated, Ukraine's rural healthcare still suffers from the effects of a deep economic depression, a lack of physicians and inadequate salaries, increased pharmaceutical costs, and excessive control from local village councils.

In the spring of 2007, the Izyum District won participation in USAID's Strategic Economic Development Program. This report is a Needs Assessment Analysis of 12 ambulatories in the Izyum District. At the request of the EU's organization, Technical Assistance to the Commonwealth of Independent States (TACIS), this report is to help achieve Objective B 3.1, "*Providing of urban population by accessible and high-quality medical services to rural and urban*". The analysis also examines a program in the village of Korobochkino to see if a similar program can be implemented in the Izyum District. The objectives of this analysis are: (1) Report initial statistics in patient visits to ambulatories; (2) Identify common and severe illness occurring in the sub-districts; (3) Identify problems that hinder effective rural healthcare; (4) Identify healthcare resources and needs ; (5) Discover if the conditions of Izyum District's rural healthcare are similar to Korobochkino; and (6) Identify options for closing ambulatories and consolidating services, should TACIS and the local government consider this reform.

The analysis reports on a survey of the 12 ambulatories I conducted in April and May of 2009. I find that the average ambulatory in Izyum has a staff of 9 people. The average ambulatory has been experiencing a declining population, an increased number of patient visits, an increased number of closed cases, and increase number of cases sent to Izyum hospitals. Three of twelve ambulatories lack a doctor and three lack a dentist. Common illnesses seen are Ischemic Heart Disease and Hypertension, though more serious diseases like trauma, stroke, cancer, and heart attacks were also treated at many of the ambulatories. Many ambulatories lack sufficient financial support, modern equipment, ambulances, and adequate pharmaceutical stocks. Some also lack running water and gas heat.

I find that the conditions in the Izyum region seem similar to those in Krobokhino, and recommend that a similar program be undertake in Izyum.. If government policy makers decide that ambulatories must be consolidated (with some clinic closing), I suggest the Aleksandricka and Dovgenke ambulatories be closed. This recommendation is based on a multi-criteria evaluation of the distance from Izyum, number of population served, dispersion of population, and impact of its closing. I would not, however, recommend closing ambulatories, but rather administer more funding and staffing programs, such as done in Krobokhino.

¹ Vekhovna Rada (Ukraine's Parliament), *Constitution of Ukraine*, <http://www.rada.gov.ua/const/conengl.htm>. Adopted on June 28, 1996.

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Introduction: Ukrainian healthcare

Since gaining independence from the Soviet Union, Ukraine has initiated and partially implemented numerous reforms of the health care system. However, despite these efforts the system has generally retained the main features of the Soviet model of healthcare, such as: a surplus of state guarantees, predominance of administrative approaches to problem solving, financing based on capacity rather than performance, and low efficiency in resource utilization.²

Under Article 49 of Ukraine's Constitution, *Everyone has the right to health protection, medical care and medical insurance. Health protection is ensured through state funding of the relevant socio-economic, medical and sanitary, health improvement and prophylactic programs.*³ Although this is a very noble ideal, it is a very difficult ideal to be met. During the Soviet times, healthcare was heavily subsidized and often services were free to patients. Today with Ukraine's economic instability resulting from its independence, and the rising costs of medicine, medical education, and instruments, the medical services have experienced substantial collapse and reform. Often, people have access, which is not always equal. A person living in a large, modern city may have access to equipment found in a first world nation, while a in a nearby rural village, the health care system can be compared to the US in the 1950s or 1960s.

About one third of the population in Ukraine live in rural areas, some only sparsely populated at around 30 to 70 people per km². This poses considerable problems for the provision of health care. The main Primary Health Care Provider in rural areas is the physician ambulatory, generally located in the administrative and economic centre of the catchment area. In 2000, the PHC network in rural areas comprised about 3800 rural physician catchment areas, responsible for an average of 4600 residents. Many rural physician ambulatories are free standing facilities (63%) while about 25% are part of catchment area hospitals and 13% are under the supervision of district hospitals.⁴

An ambulatory is a rural facility that often supports 3 to 7 villages in a small region and located in a village that has a population from 1000 to 1500. It usually is a small building of roughly six to eight rooms. A typical ambulatory will have a staff of six to twelve people. Usually there are one or two physicians, providing basic care, a dentist, with the rest comprised of nurses, orderlies, and maybe an ambulance driver. Rural physician ambulatories typically comprise three specialties: internal medicine, pediatrics and dentistry. In practice, however, especially in remote areas far from the district center, physicians often have to take responsibility for emergency care. Additional services provided by rural ambulatories include antenatal and postnatal care, basic preventive activities such as immunization and health education.⁵

² Lekhan, Rudi, and Nolte, p.118

³ Vekhovna Rada (Ukraine's Parliament), *Constitution of Ukraine*, <http://www.rada.gov.ua/const/conengl.htm>. Adopted on June 28, 1996.

⁴ Lekhan, Rudi, and Nolte, p. 58

⁵ Lekhan, Rudi, and Nolte, p. 58

An ambulatory will often be supported by four to five Feldsher and Midwife Aid Posts (FMAPs). These facilities are, however, unequally distributed with almost one third of rural areas having no nearby health facility.⁶ A FMAP is usually staffed by one, maybe two people. Usually the person is a nurse or feldsher. A feldsher is a special category of mid-level health workers between nurses and physicians. A feldsher is sufficiently independent in their work, performing a broad range of preventive, diagnostic and therapeutic tasks, prescribing drugs and, in certain circumstances, conducting expert examinations to establish the ability to work and performing administrative functions.⁷ It is common to find a FMAP under-resourced. Most likely the FMAP has no personal transportation outside of a bicycle or by foot.

FMAPs usually serve areas of 300 to 3000 residents. Currently there are about 16 000 such facilities in the country.⁸ In a recent move by the Ministry of Health towards developing PHC on the principles of family/general practice, several rural hospitals have been reorganized into ambulatories. Also, FMAPs that provide services to populations of 1000 or more have been converted into ambulatories. This has resulted in a 50% increase in the number of freestanding physician ambulatories between 1991 and 2000, and there is also a trend towards replacing services provided by feldshers with physicians.⁹ However, contacts with mid-level health personnel continue to prevail in rural primary health care. The government is now planning to further break up the structure of rural physician catchment areas to draw primary physician care closer to the population. A new regulation has also been introduced that allows for general practitioners to practice in rural areas of 1200 population, which is lower than the previous norm of 1500 for general practitioners in urban areas.¹⁰

Rural healthcare in Ukraine suffers from many systemic problems common to what can be found in the hospitals of larger urban cities, although these problems are typically more severe in rural areas. One systemic problem faced is lack of physicians and adequate salaries. Many specialists are working for only 50% or 25% of the average salary. Unsurprisingly, there were about 13 000 vacant doctor posts in 2000. In addition, the majority of physicians are concentrated in urban areas. The Ministry of Health is now attempting to increase personnel in rural health facilities by annually assigning 56% of newly qualified medical graduates whose training was state-funded to rural areas. In doing so, more than 6000 doctor posts in rural health facilities have been filled in recent years. However such policies may be unsustainable because a shortage of housing and difficult living conditions in rural areas causes many health care workers to leave.¹¹ Among 25 economic sectors in Ukraine, the average salary in the health care sector ranks 22nd and is less than half the average wage in the industrial sector.¹² Therefore it is common to find healthcare workers with very altruistic and humanitarian behavior and values.

⁶ Lekhan, Rudy, and Nolte, p. 58

⁷ Lekhan, Rudy, and Nolte, p. 90

⁸ Lekhan, Rudy, and Nolte, p. 58

⁹ Lekhan, Rudy, and Nolte, p. 58

¹⁰ Lekhan, Rudy, and Nolte, p. 58

¹¹ The state and perspectives for staffing of health care institutions in Ukraine, found in Lekhan, Rudy, and Nolte, p. 83 to 84.

¹² Healthcare sector activities in 2001, found in Lekhan, Rudy, and Nolte, p. 101

Increased pharmaceutical costs are also a problem with healthcare in Ukraine. During the Soviet Union, the pharmaceutical market was primarily controlled by Eastern European companies, which produced cheaper medicines. Drugs from the West were rarely accessible. In 1991 after the collapse of the Soviet Union, the domestic industry could only meet 20% of patient needs, and the country began a pattern of importing more expensive drugs from the West.¹³ Since then, prices have risen for high quality drugs. As of 2000, roughly one third of households in Ukraine were able to obtain necessary pharmaceuticals for healthcare.¹⁴

A third problem faced by Ukraine's healthcare system is old and outdated technology and equipment, and difficulty in acquiring replacements. A recent review of medical equipment in health facilities pointed out that a majority of the more complex equipment was purchased before 1992. A number of facilities are still using devices manufactured in the 1970s. More than 50% of the equipment is considered technically outdated.¹⁵ However, the national government has had difficulty in meeting the demands of equipment replacement due to deep economic recession. It has become increasingly more reliant on assistance from USAID, WHO, the European Union, UNICEF and numerous other international organizations.

A fourth problem that rural ambulatories sometimes face is too much political interference from the local village councils. In some areas, the rural ambulatory staff is appointed by the village council.¹⁶ This can pose a problem if local politics and personal bias of community stakeholders impede in the hiring of qualified staff. In addition, budgeting, funding, and management functions are sometimes run by village councils, which lack qualifications in healthcare.¹⁷ Reforms are being planned and implemented to transfer budgeting and control over to district healthcare administration. This may take time, because it is quite possible that village councils will see this as taking money away from their already meager budget resources.

Izyum's Strategic Economic Development Plan

In the spring of 2007, the Izyum District won participation in USAID's Strategic Economic Development Program. Within a few months, a strategic economic development plan had been created. The initial plan is a 175 page document, featuring a vision statement, Strength, Weakness, Opportunities and Threats (SWOT) analysis, 43 objectives, an evaluation of the feasibility of those objectives, and an action plan. Below is a loose English translation of the objectives relating to health care:

¹³ Lekhan, Rudy, and Nolte, p. 92

¹⁴ Lekhan, Rudy, and Nolte, p. 93

¹⁵ Lekhan, Rudy, and Nolte, p. 96

¹⁶ Ministry of Health CII Group AG, p. 26

¹⁷ Ministry of Health CII Group AG, p. 39

B.1. Improvement of the System of Health Protection

Operative Objectives:

B 3.1. *Provide accessible and high-quality medical services to rural and urban populations.*

Realization of this objective is focused on the material and technical equipment of medical establishments, both due to budgetary facilities and other sources not forbidden by Legislation of Ukraine

Performer: Management of the Health Protection

Term of execution: 2008-2010

B 3.2. *Creation of a Single System of Grant of medical services for the territory of the town and district*

In absence of national strategy of reformation of the system of health care and none formed in the private sector of medical insurance, the creation of such system will allow the district level to consolidate budgetary facilities of medical establishments for providing of high-quality surgical Medicare to the population.

Performer: City Council

Term of execution: 2009

B 3.3. *Improvement of the physiological state of children and young people*

Realization of this objective will be carried out in accordance with the Izyum District "Program of Development of the National Network of Schools for Assistance to Health for 2005-2010 years"

Performer: City Department of Education

Term of execution: 2010

B 3.4. *Provide social and medical services for people without permanent habitation.*

Local authorities must support people who are homeless regardless of their circumstances. In addition, there is the great number of examples of decision of problems of homeless by public organizations. Within the framework of this purpose it is suggested to join forces of public organizations and state structures for the decision of problems of homeless

Performer: The Management of Labour and Social Protection of the Population

Term of execution: 2011

Implementation of the Strategic Plan was transferred from USAID to the Technical Assistance to the Commonwealth of Independent States (TACIS), a department of the EU. TACIS's initial assessment of Izyum's urban healthcare was that it is a lower quality compared to other towns of its size in Eastern Ukraine, but conditions in the neighboring rural villages was virtually unknown to them.

Objective of Analysis

At the request of the TACIS development team, I conducted a basic needs analysis of the Izyum District's rural health care system. A letter indicating TACIS' support to Peace Corps on my behalf is included in Appendix A. The analysis has two parts. *Part 1* is a needs-assessment interview conducted with 11 rural ambulatory stations and the infirmary at Chervonni Oskil. *Part 2* is a comparative analysis of the current development model and programs in a neighboring region, initiated by the American International Health Alliance's project in the village of Korobochkino, partnered with USAID.

The goal of this report is to determine:

- Report basic statistics and trends in patient visits to ambulatories;
- Identify common and severe illness occurring in the sub-districts;
- Identify problems that hinder healthcare services to the villages;
- Identify resources and needs that healthcare services are lacking;
- Discover if the conditions in Izyum District are similar enough to those in Korobochkino – where a successful development program model was recently implemented – to recommend replication of the program in Izyum.
- Identify options for closing ambulatories and consolidating services, as inquired by a TACIS representative.

Overview of the Izyum District

Izyum is the second largest town in the Kharkov Oblast located in Eastern Ukraine, with a population of approximately 55,000. An Oblast is an administrative division much like a county in the United States. There are twenty four located in Ukraine. A typical Oblast may contain: 15 large cities, 60 small towns, and 1600 villages. The Izyum District contains 60 villages, which are grouped into 17 micro-raions (or sub-districts), where Izyum acts as the overseeing administrative body. Each village ranges from 12 to 1405 people, with the exception of the larger town of Chervonni Oskil, which has a population of 3016.

Below is a table listing the names of the Izyum sub-districts in Ukrainian and English, the number of villages in each sub-district, whether the sub-district has an ambulatory, and the number of FMAPs in the sub-district. For sub-districts without an ambulatory, the ambulatory that serves its region is listed. For the rest of the report, I will refer to each ambulatory by the name of the village it is located in, which in most cases is also the same name as its sub-district. One exception is for the sub-district of Brigadirivka. Its ambulatory is located in the village of Lipchanivka (Липчанівка), and thus will be referred to this name. The table located in Appendix D compiles these statistics to the name of the ambulatory and the region or regions it services.

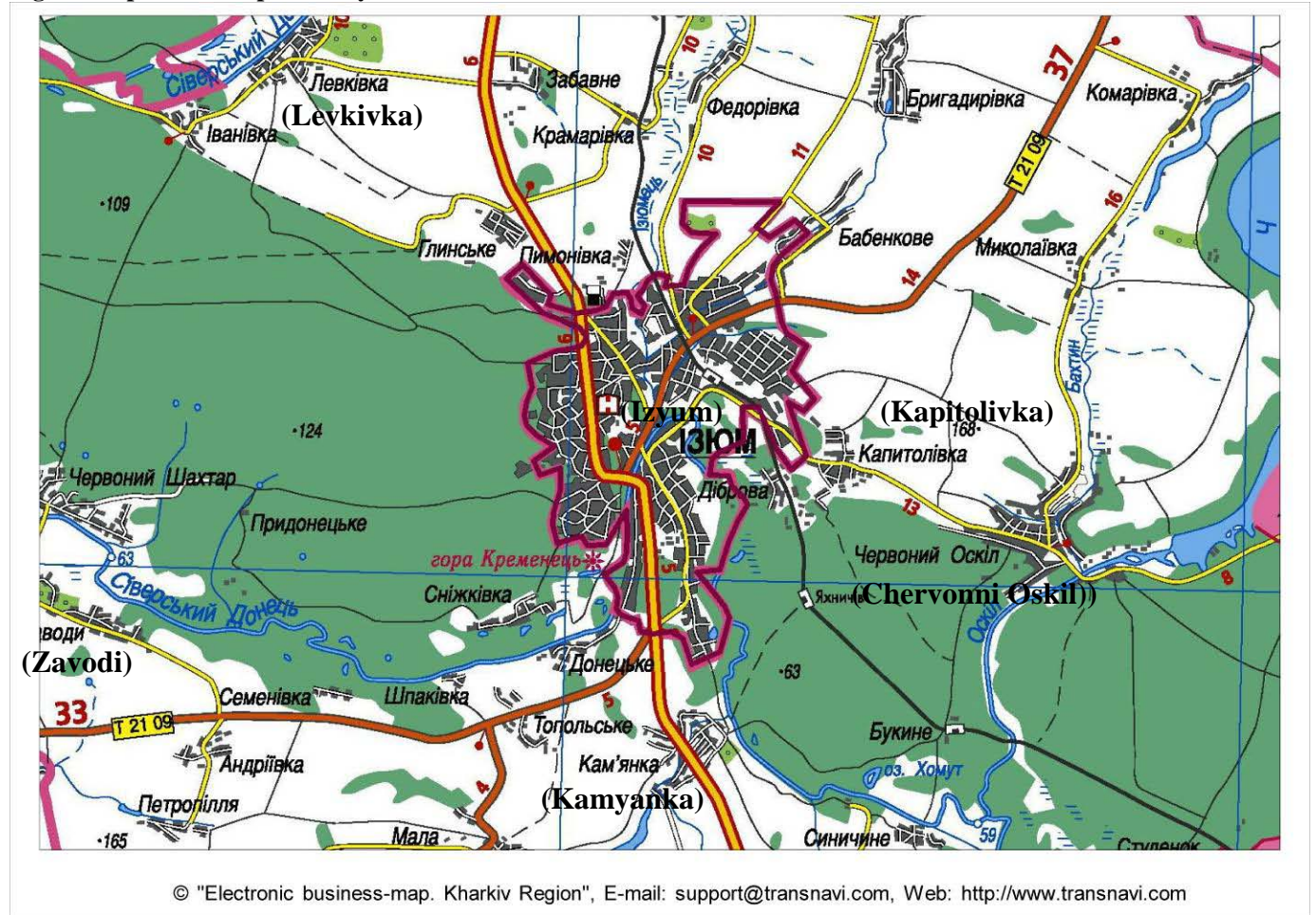
Table 1. Dispersion of Medical Services in Sub-districts

Ukrainian district	Sub-English Name	No. of Villages	Ambulatory	No. of FMAPs
Бригадирівка	Brigadirivka	4	Yes	3
Бугаївка	Bygaiyovka	5	Yes	2
Вірнопілля	Vernipillya	3	Yes	1
Довгеньке	Dovgenkye	1	Yes	0
Заводи	Zavodi	5	Yes	2
Кам'янка	Kamyanka	4	Yes	2
Капітолівка	Kapitolivka	2	Yes	0
Куньє	Kynye	7	Yes	3
Левківка	Levkivka	8	Yes	3
Олександрівка	Aleksandrivka	5	Yes	0
Студенок	Stydenok	3	Yes	1
Червоний Оскіл	Chervonni Oskil	2	Yes	0
Бражківка	Brajlivka	2	Dovgenkye	2
Іванчуківка	Ivanchukivka	5	Kynye	2
Комарівка	Komarivka	2	Chervonni Oskil	2
Мало			Vernipillya	
Комишувахса	Malo Komishyvahsa	7		4
Чистоводівка	Chistovodivka	1	Kynye	1

Izyum's economy was primarily based on factories. Since the collapse of the Soviet Union, these factories have gone through various stages of bankruptcy, and have been making steady progress over the recent years. The factories include: an optics factory formerly part of the Soviet Military in the process of privatization, a second factory for optics-related parts and tools, a beer factory, a locomotive factory, a dairy factory and a bread factory. Today, roughly 55% of the region's population is considered in poverty, as stated by a local. Izyum has seven schools and two gymnasiums and four technical institutes. Over four hundred students graduate from the schools and gymnasiums each year. The villages in the area are primarily agricultural-based and employment in the Soviet times was designed to support Izyum's factories and the surrounding agricultural fields.

Below is a map that covers the central portion of the Izyum District and a few of its villages. Noted in translation are only the significant villages containing ambulatories and Izyum. The ambulatories are from upper left to lower right: Levkivka, Kapitolivka, Chervonni Oskil, Zavodi, and Kamyanka.

Fig. 1. Map of central part of Izyum District



Below is the political map of the entire Izyum region, where the town of Izyum is the dark central region. Translations have been provided for the villages containing ambulatories.

Fig. 2. Political Map of Izyum District



Rough translation: Established in the year 1923, as the district center of Izyum, [Acronym of an authorizing department and code], on March 7th, 1923.

Заснований в 1923 році з районним центром в м. Ізюмі постановою Президії ВУЦИКа №313 від 7 березня 1923 р .

Адреса райдержадміністрації :
м. Ізюм, пл. Центральна, 1.

The city of Izyum itself has two hospitals and four walk-in clinics. One clinic is for general and family practice, one is for dental services, one specializes on children, and one is for maternal care. Among the villages, Chervonni Oskil has the largest clinic, a two story infirmary clinic with a staff of 41 which can hold a maximum of 40 inpatients overnight. Eleven of the villages have ambulatories, in separate sub-districts. Four of these ambulatories extend services to more than one sub-district. There are a total of 25 FMAPs amongst the villages.

Methodology

For *Part 1* I visited and conducted interviews at the village of Korobochkino in April of 2009. . A summation of my findings from those interviews, along with findings from a review of the website of American International Health Alliance and correspondence with its director, is presented on page 14.

For *Part 2*, I conducted a series of interviews at all 11 of the ambulatories in the Izyum District, and also to the infirmary in Chervonni Oskil. Questions were modeled after those used in a Ministry of Health study called “*Project Completion Report: Preventative and Primary Health Care Ukraine, Kiev and Selected Regions*”¹⁸. The questions covered population served, patient visits, working staff, distance from Izyum, patients transferred to Izyum, and also qualitative observations, such as condition of instruments, service hindering problems, most common and extreme illnesses. The specific questions in English are on the next page. The questions in both English and Russian are presented in Appendix B. The average length of time for an interview was thirty to forty-five minutes. Results were then tabulated on the charts presented in Appendix D, and are presented in the Findings section. The interviews were conducted from April to June of 2009.

No translators were found or used through the course of the interview; I relied solely on my ability with the Russian language. I took this into consideration in designing the survey, since many people in these small villages had never met a foreigner before, and might display a reluctance or skeptic view. Because it was unknown beforehand if the ambulatories kept a historical record of statistics, I asked a more subjective question for several types of comparison: “Do you think this is an increase or decrease from a few years ago?”. Because of my status as an outsider, I did not ask questions regarding the staffs’ level of technical or education experience to avoid the impression that I was questioning their qualifications.

I used two maps for analyzing the distances of villages from Izyum and from each other.¹⁹. Measurements were done with a centimeter ruler from Izyum to the villages, in a direct line, and calculated at a ratio of 1 centimeter per 6 kilometers. This is certainly an underestimate of actual distances, since the roads in the district do not follow a perfect straight line. I estimate that error could be ± 6 kilometers.

¹⁸ Ministry of Health CII Group AG.

¹⁹ See Appendix D: “Maps”

Fig. 3. Interview Questions for clinics

1. How many telephone conversations to you have with patients in a month?
2. How many patients usually visit you in a day?
3. How many patients usually visit you in a month?
4. Is it more or less than a few years ago?
5. How many treated cases do you close in a month?
6. Is it more or less than a few years ago?
7. How many cases are sent to Izyum in a month?
8. Is it more or less than a few years ago?
9. How many inpatients stay the night in a month? For how many days do they usually stay? Is it more or less than a few years ago?
10. How many mortality and morbidity cases do you see in a year? Is it more or less than a few years ago?
11. Is there a season that has a larger number of patients?
12. Is there a season that has the fewest number of patients?
13. What are the most common illnesses?
14. What was the most serious illness or accident that you saw?
15. What problems or obstacles prevent work or service to patients from being better?
16. What problems or obstacles prevent work or service to patients from being better? And why?

Findings of Korobochkino (Коробчкино)

In April 2009, I conducted an onsite interview at the ambulatory clinic in the village of Korobochkino (Коробочкино), located in the Chiguyev district roughly 40 kilometers north of Izyum. TACIS had learned that an international development project was happening in this village, and wanted to learn more. At the request of TACIS, I went to discover what was occurring and to determine if its programs could be administered in the Izyum District.

Korobochkino is a small town of roughly 3,200 people. Earlier its ambulatory had been functioning much like the ambulatories observed in the Izyum District. In 1999, it began working with the organizations of *World Services of La Crosse*, *American International Health Alliance*²⁰, USAID, and the Kharkiv Oblast administration. Their purpose was to improve and reform the regional healthcare. The Korobochkino Project, as I will refer to it, is only a part of AHIA's efforts in the Kharkiv Oblast. Its focus was to upgrade the ambulatory to function more as a walk-in clinic, with greater specialization. It is unknown why this specific village was selected. According to an e-mail from AIHA CEO, Sandra McCormick, their team had visited several villages in the area and believed that Korobochkino was the most ideal to their established criteria. They believed that the staff had the creativity, motivation, commitment and were willing to participate in learning experiences that would move them into a new type of health care practice.

In January, 2001, the primary healthcare facility in Korobochkino was opened, and headed by Dr. Nickolay Proskurin. The partner established this model center that serves approximately 4,000 from the surrounding area. The rural clinic offers a wide range of primary care services including family planning, patient education, and counseling services. Referrals to specialists in the clinic's catchment area decreased from 60% to 25% in the first year the clinic was opened.²¹ The partners developed and implemented six clinical practice guidelines. The partners reported that the use of these guidelines reduced examination and treatment costs as well as the rate of unjustified hospitalizations. In Korobochkino the rate of hospitalizations was reduced from 22.2 per thousand to only 5.5.²² Nurses received extensive training, and were actively involved in direct patient care and act as the primary contact during a patient's visit to the clinic. These newly acquired responsibilities continue to redefine the role of nurses in the clinics and reduce the workload of the physicians. The nurses now organize health education classes for individuals and groups and also conduct health promotion and health education community outreach campaigns. The Korobochkino staff initiated community education in the areas of farm safety and hypertension prevention. By the middle of 2004, the partnership has replicated this model to roughly 200 clinics and rural ambulatories in Ukraine. *World Services of La Crosse* and USAID have performed a pivotal role in sponsoring medical supply and equipment donations, as well as trips for Korobochkino healthcare workers to the US for training seminars.

The Korobochkino clinic has a staff of 11 people, which includes 1 doctor, 7 nurses, and 3 orderlies. This is a little above the average number of staff for the ambulatories in the Izyum District, which is nine. Its annual budget for 2008 was 252,300 UAH (about \$31,538 USD). Of that figure, 168,000 UAH (about \$21,000) goes towards salaries. On average, it sees 800 to 900 people a month. In an interview with Dr. Nickolay Proskurin, he highly valued the training and education seminars that AIHA provided. His practice had been primarily family medicine. After the seminars, he and his staff were better qualified, specialized, and administered a stronger outreach to the community. He specifically valued the greater education in Cardiology, Neurology, and three other fields. As a result of this specialization, he said that they were able to

²⁰ AIHA webpage.

http://www.aiha.com/content/3_What%20We%20Do/Archives/HealthcarePartnerships/KharkivLaCrosse.asp

²¹ AIHA website.

²² AIHA website.

reduce the rate of patient referrals to the neighboring town, Chiguyev, from 3% per month, to 1.5%. The clinic does provide some treatment to AIDS patients, often amongst the homeless and drug users. They also provide some information campaigns, but it is not as extensive as most AIDS centers established in Ukraine.

Dr. Proskurin stated that their biggest obstacles were (1) economical and financial support, in light of Ukraine's worsening economy and rising costs of healthcare, and (2) reforming national oblast regulations allowing people to come to the walk-in clinic, and getting them to do so, since previously the ambulatory performed more house calls.



Korobochkino Clinic



Korobochkino Clinic



Administration



Director's Office and Examination Room



Gynecology



Dentist Office



Examination Room



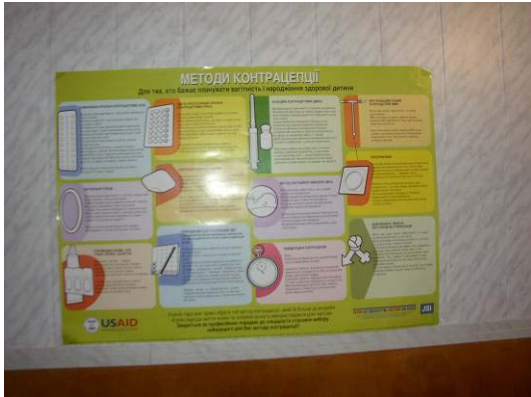
Medicine Cabinet



Laboratory



UV heating for physiotherapy after surgery (УВЧ) & Cardiogram



USAID Health Poster



Physiotherapy Room

Compatibility of Korobochkino model to Izyum regional ambulatories

It is my personal opinion based on my observations that the rural conditions in Korobochkino are similar to that of most rural villages in Ukraine. This program could be easily replicated in any other rural location. The only factor I have been able to determine in its success is the high level of enthusiasm of the staff and willingness to improve its conditions and work with international partners. The ambulatories in Izyum would seem to be appropriate for the same kind of project in Korobochkino. Nearly all of the ambulatories use old and outdated equipment. Most would benefit from the greater specialization, rather than focus primarily on family practice. It is unknown as to what types of outreach programs they do, but there was nothing to indicate that anything is being done that is as extensive as Korobochkino. A logical location for AIHA's regional outreach and training center would be the city of Izyum because it is centrally located within the district, and it already has a medical college that trains nurses.

There may be differences in local or regional laws in the Chiguyev District that could be a barrier to replicating the AIHA program in Izyum, although I am unaware of any.

Findings from Izyum Ambulatory Interviews

Population

Population statistics were taken from a report conducted by the Izyum Local Administration²³, for the years 2002 to 2008. Fig. 1 and Table 2 on the next page display the most recent statistics of population for the Izyum District. The populations of the seventeen sub-districts are from 300 to 3000 people. Most sub-districts average from 700 to 1700 people. Only one village, Chervonni Oskil (pop 3016), has a population larger than 3000.

Of the twelve ambulatories, all of them had experienced a population decrease of 50 people or more from 2002 to 2008. Seven out of the twelve ambulatories experienced a population

²³ See Appendix F. "Izyum Population report."

decrease of 100 people or more. Four of the twelve ambulatories had a decrease of 200 people or more. These ambulatories are Vernipillya, Kynye, Chervonni Oskil, and Levkivka, with a decrease of 209 (-12.1%), 212 (-7.7%), 281 (-7.1%), and 304 (-15.8%), respectively. Levkivka had both the largest numerical population decrease and percentage. It is reasonable to assume that the population decrease is reflected by Ukraine's population decline. In 2007, Ukraine was the country with the highest decrease of natural births, 8% each year. By 2050, it is expected to lose 28% of its population.²⁴ It is also reasonable to assume that the population decrease is caused by increasing unemployment and people moving to find work, more specifically with Izyum's diminished productivity since the USSR.

Each ambulatory serves an average of 1498 people in its sub-district²⁵. This number excludes the infirmary of Chervonni Oskil, which serves a population of 3773 for its district and Komarivska District. On average, each ambulatory, including the infirmary at Chervonni Oskil, serves five villages. [Appendix D provides a summary table of population data as well as other summary statistics for the survey questions. Readers may wish to refer to that master table throughout this "needs assessment" section.]

Table 2. Change in Population from 2002 to 2008

Ambulatory	Population - 01.01.02	Population - 01.01.08	Change in Population	Percentage
Lipchanivka	2051	1981	-70	-3.4%
Bygaiyovka	1620	1517	-103	-6.4%
Vernipillya	1735	1526	-209	-12.1%
Dovgenkye	1229	1052	-177	-14.4%
Zavodi	1148	1028	-120	-10.5%
Kamyanka	1389	1302	-87	-6.3%
Kapitolivka	1878	1823	-55	-2.9%
Kynye	2755	2543	-212	-7.7%
Levkivka	1927	1623	-304	-15.8%
Aleksandrivka	744	662	-82	-11.0%
Stydenok	1829	1744	-85	-4.7%
Chervonni Oskil	3984	3703	-281	-7.1%

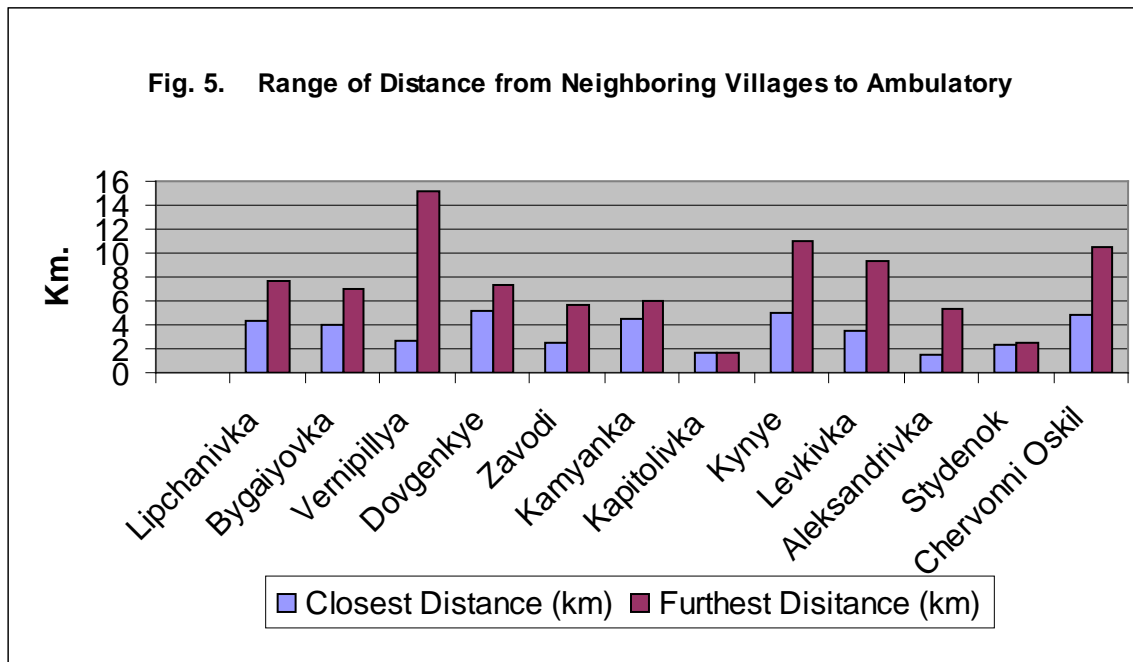
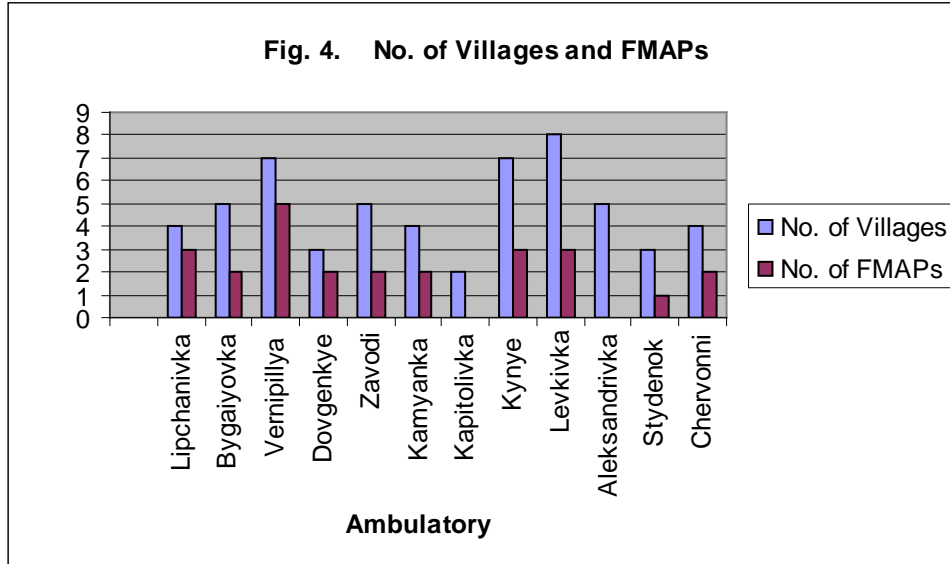
For the 48 villages without an ambulatory, the distance of a village to its nearest ambulatory is often 5 to 7 kilometers²⁶. The furthest distance of a village from an ambulatory is Donetzkye, at 15 kilometers from Vernipillya. However, Donetzkye is roughly 5 kilometers from Izyum, so residents are likely to travel to Izyum town for medical services or to receive ambulance services

²⁴ Rosenberg.

²⁵ (@sum of the populations of 15 regions)/11 ambulatories.

²⁶ Arbitrary distance measured in a straight line, as described in methodology.

from the Izyum Central Hospital. The village Cnijktivka is located at a distance of 14.4 kilometers from an ambulatory. It has a population of 222 people and contains a FMAP. Four villages, Chervonni Donetsk, Komariivka, Semenivka, and Shpakivka have a distance within 10 to 12 kilometers to an ambulatory. All of them have a FMAP, except for Semenivka which as a population of 22 people.



Distance poses a significant barrier to gaining access to medical services. On average Ukrainians own fewer cars than Americans.²⁷ Public transportation is considered poor. Buses leave from Izyum to the villages two to three times a day. Usually there is a morning route starting between 4 to 7 am, possibly a noon route, and an evening route between 4 to 6 pm. As a nurse said in an interview, “Elderly grandmothers sometimes leave early in the morning for 11 am dentist appointment in Izyum, and then wait at the bus station till 5 pm to return to the village.”

Transportation barriers as described above, along with the USSR’s goal of providing access to healthcare to for everyone, could be the reasons why the countries in the Commonwealth of Independent States have a higher rate of physicians per 1000 people, than the US and European Countries. Four of the top 10 countries with the highest physicians are from the CIS. Belarus is 5th with 4.55 per 1000. Russian is 7th with 4.25. Turkmenistan is 9th with 4.18. Georgia is 10th with 4.09. In comparison, Ukraine is ranked 39th with 2.95, and the US is ranked 52nd with 2.3.²⁸

Staff

The average staff per ambulatory is nine. This figure excludes the infirmary at Chervonni Oskil, which has a staff of 41 people. An ambulatory will typically have one family practicing doctor, one dentist, one ambulance driver, one maintenance or janitorial worker, and several nurses or orderlies. Fig.1 displays the number staff per ambulatory.

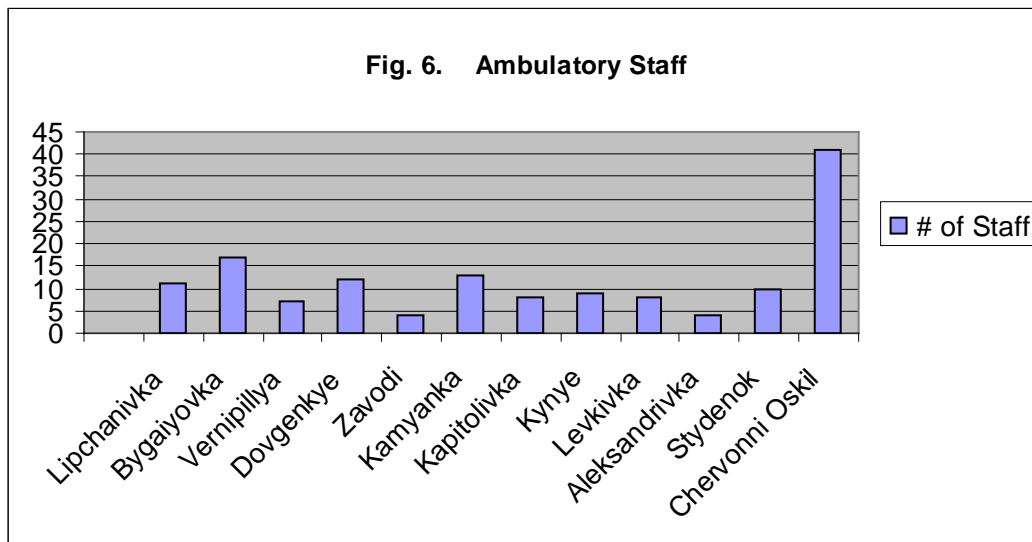


Table 3 displays which ambulatories have doctors and how many. Three out of the twelve clinics (25%) are without a doctor: Zavodi, Stydenok, and Dovgenkye. Stydenok’s doctor retired five years ago and has yet to be replaced. Zavodi was a FMAP which was to be expanded to an ambulatory, but its development slowly halted. It is unknown why Dovgenkenke does not have a

²⁷ The Nielsen Group.

²⁸ Nation Master.

doctor. Upon visiting, it appeared that the facility was not being used to its full capacity. It is possible that a doctor was working there at some time, but just had not been replaced.

Table 3. Number of Doctors

English Name	No. of Doctors
Lipchanivka	1
Bygaiyovka	1
Vernipillya	1
Dovgenkye	0
Zavodi	0
Kamyanka	1
Kapitolivka	1
Kynye	2
Levkivka	1
Aleksandrivka	1
Stydenok	0
Chervonni Oskil	6

There are a total of 15 physicians for the 20,504 rural population of the Izyum district. This converts to a figure of 0.73 physicians per 1000 people. This is considerably smaller than the national average of 2.95 per 1000 in 2005.²⁹ This difference is understandable, because more physicians are expected to be concentrated urban hospitals. Compared to the US, the rate of physicians per 1000 in the rural Izyum district is higher. In 2005, the rural US had 0.55 physicians per 1000 people.³⁰

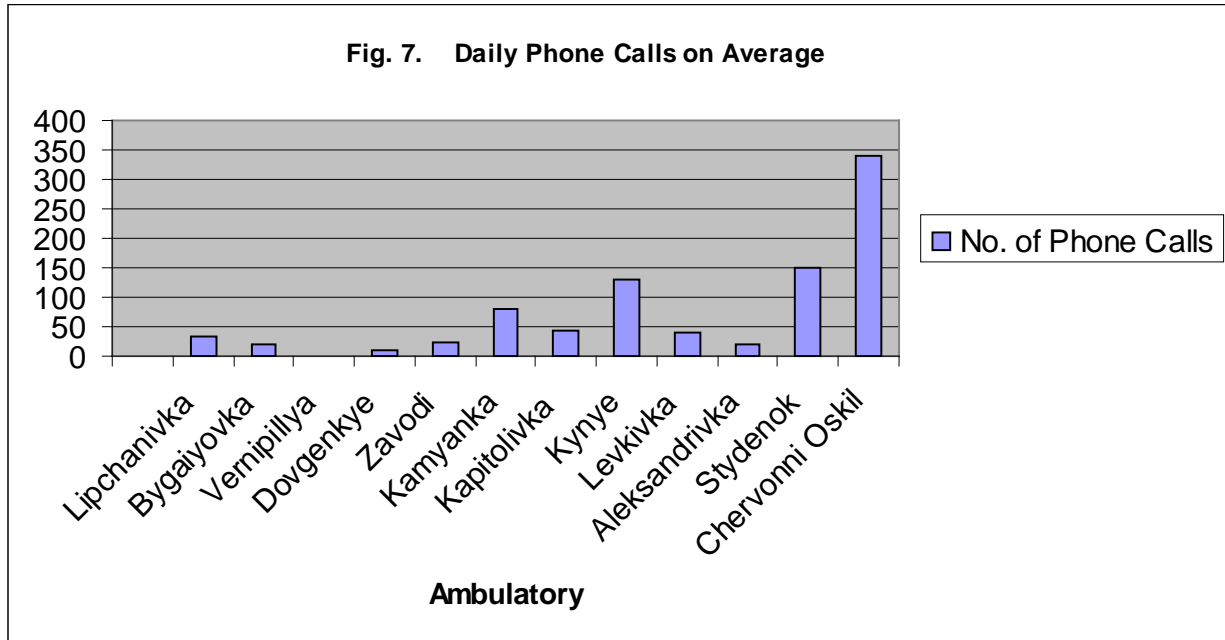
Three out of twelve clinics have no dentists: Zavodi, Vernipillya, and Aleksandrivka. It is unknown why none of these ambulatories have a dentist. Zavodi and Vernipillya have dental chairs and equipment, and a dentist makes periodic trips. Aleksandrivka is a small facility that lacks a room for a dentist office. A nurse at Zavodi said, "It is quite difficult to get doctors and dentists to want to live and work in small villages." Only Zavodi lacks both a doctor and a dentist.

Phone calls received and # of visits

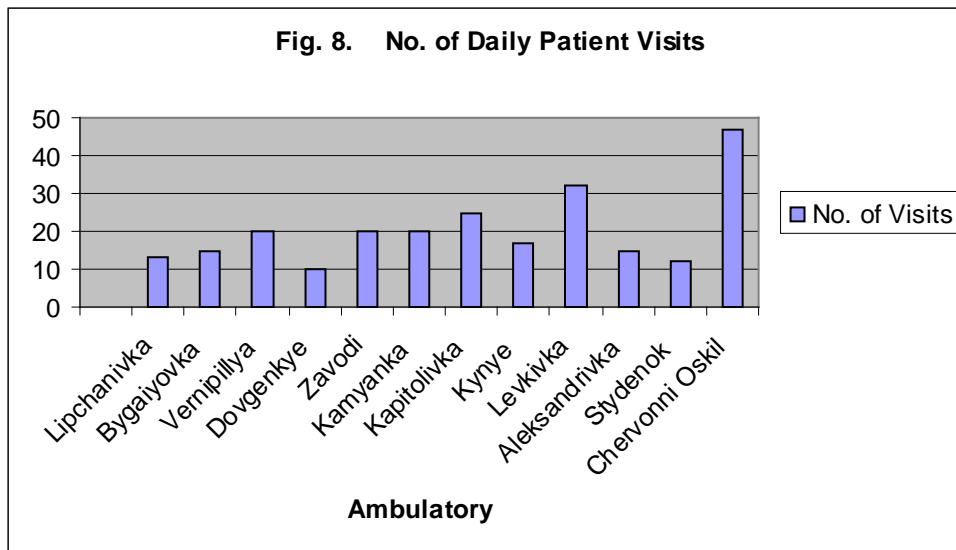
Ten of the ambulatories had data on the number of telephone conversations with patients per day (Vernipillya did not keep records on this measure). On average, ambulatories conducted 54 telephone conversations with patients per day. The average excludes the infirmary at Chervonni Oskil, which averaged 340 telephone conversations per day. Fig. 4 displays the number of daily phone calls the ambulatories receive on average.

²⁹ Nation Master

³⁰ Sehmani, Van Nostrand, et al., 2008.



The ambulatories had an average of 18 walk-in visits per day. These calculations again exclude Chervonni Oskil, which averaged 45 to 50 visits a day, and roughly 1500 visits a month. Fig. 5 shows the number of daily patients that visit the ambulatories on average.



Of all twelve establishments, six stated that this was an increase in patients for over the past few years. These are Bygaiyovka, Zavodi, Kamyanka, Kapitolivka, Kynye, and Aleksandrivka. Four stated a decrease. These are Vernipillya, Dovgenkye, Stydenok, and Chervonni Oskil. Two, Lipchanivka and Levkivka, stated no significant change.

Following that question, the interviewees were asked for their general opinion why an increase or decrease had occurred. For the Ambulatories that stated an increase, two said it was due to an

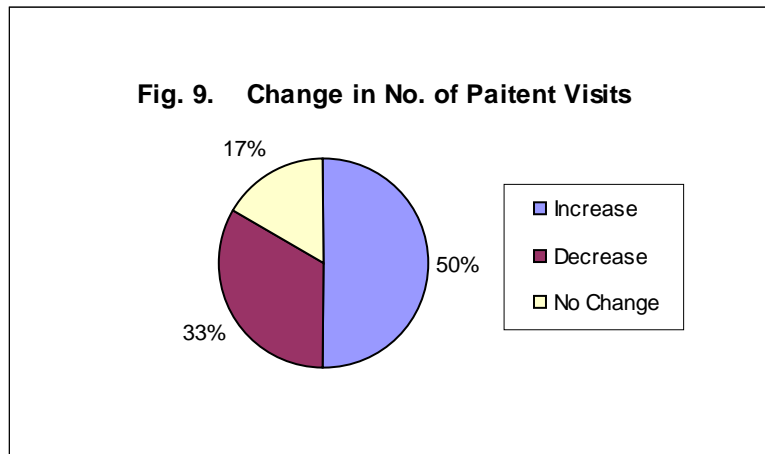
increasing retired population. Two said it was because they had a good or new doctor, and it was increasing people’s confidence in the medical services. One said it was deterioration in the economy and environmental hazards.

In a conversation with a representative from TACIS, he added a statement about the impact of Ukraine’s deteriorating economy on the Healthcare. He said that with its deterioration, it is possible that people are spending more of their personal finances on necessities, like food, and not as much on medicines, or simply making a visit when simple flu symptoms appear.

For the four that stated a decrease in visits, two said that it was because no doctor was present. As mentioned previously, these ambulatories lack doctors because they had retired. For one ambulatory, I inadvertently missed this question in the interview. For Chervonni Oskil, the interviewee said that the decrease was due the deterioration of the economy and patients’ lack of money. This might be a different case as to the ambulatories. Due to Chervonni Oskil’s size, and more available services, it is possible that its administration is run more like a hospital. Whereas in the interview with Zavodi, the nurse said, “In our ambulatory, exams and some services are free of charge.” If most of the smaller ambulatories run the same way, this could be why they are receiving more patients in recent years, while Chervonni Oskil experiences a decrease.

Two ambulatories stated there was no significant change in the number of visits over the past few years. Fig. 7 shows the percentage of ambulatories that have an increase, decrease or no change in patient visits.

Table 4. Change in No. of Patient Visits.

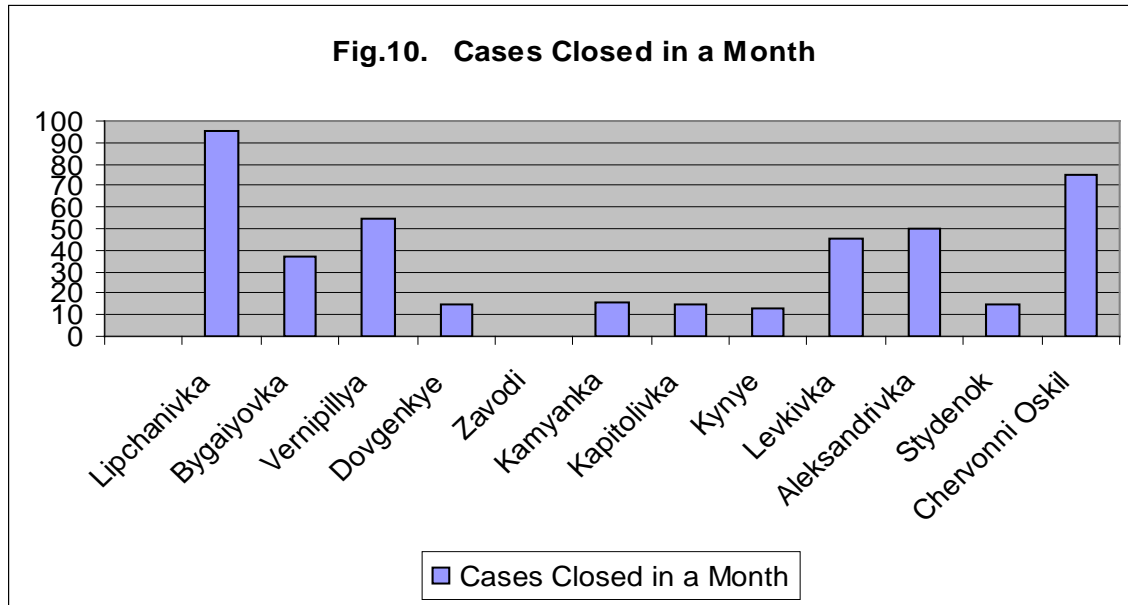


Ambulatory	Change in Visits
Lipchanivka	No change
Bygaiyovka	Increase
Vernipillya	Decrease
Dovgenkye	Decrease
Zavodi	Increase
Kamyanka	Increase
Kapitolivka	Increase
Kynye	Increase
Levkivka	No change
Aleksandrivka	Increase
Stydenok	Decrease
Chervonni Oskil	Decrease

Cases closed per month

Of ten ambulatories, the average number of closed case per month is thirty-six. This excludes Chervonni Oskil, because of its larger size, which closes seventy-five per month. Zavodi did not track this statistic, because it has never had a doctor at its facility. A closed case is considered when a patient is treated and cured, such as a common cold or bronchitis, while chronic patient with an incurable disease, maybe a case that is never closed. If compared over historical trends,

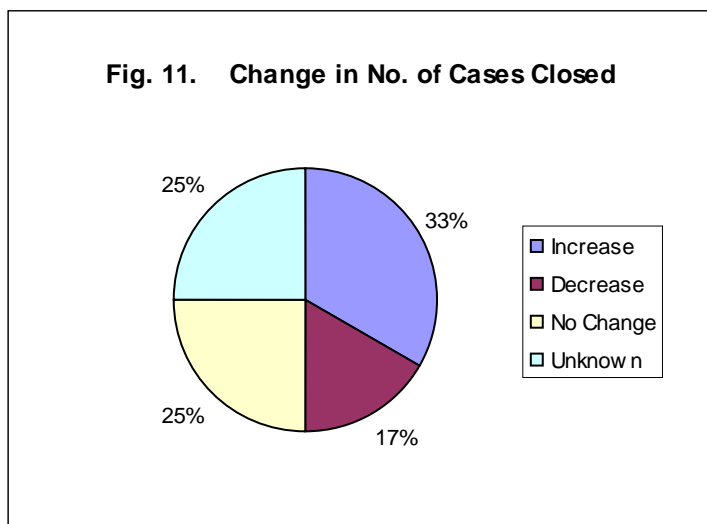
along with other factors, such as population decreases, this could be used to indicate performance.



Of the ten ambulatories that answered the question, four indicate an increased in closed cases, which are: Kamyanka, Kynye, Levivka, and Aleksandrivka. It is noted that Kynye did not have a doctor last year, and statistics were not kept prior.

Two ambulatories (Dovgenkye and Stydenok) indicated a decrease in the number of cases closed. Stydenok stated that because of the lack of a doctor, people were traveling to Izyum for services.

Table 5. Change in No. of Cases Closed



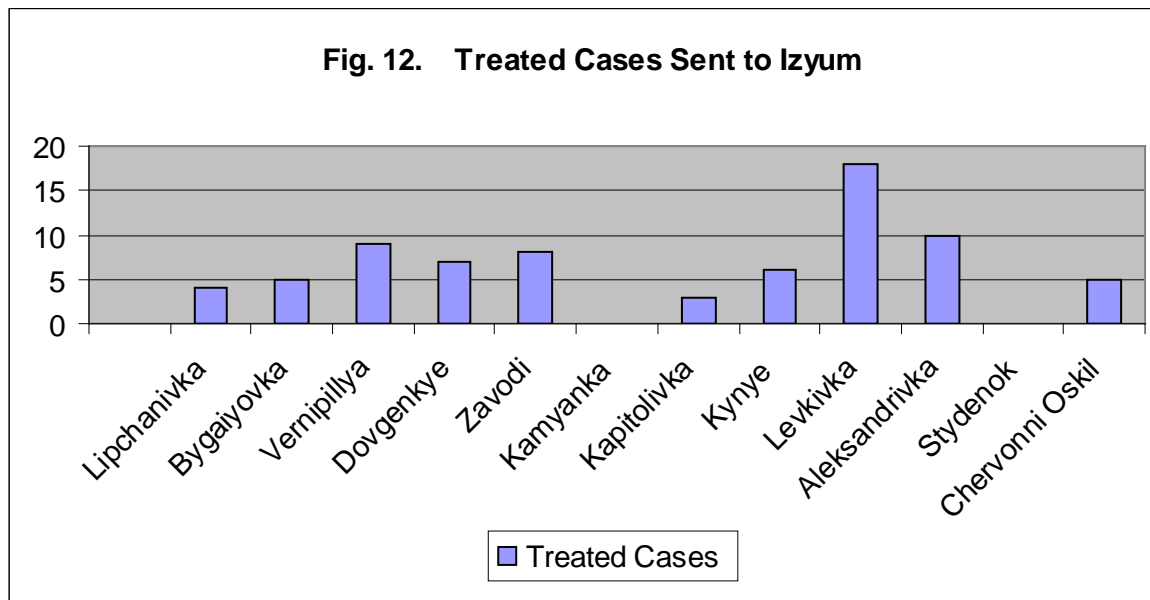
Ambulatory	Change in Cases Closed
Lipchanivka	No change
Bygaiyovka	Unknown
Vernipillya	Unknown
Dovgenkye	Decrease
Zavodi	Unknown
Kamyanka	Increase
Kapitolivka	No change
Kynye	Increase
Levkivka	Increase
Aleksandrivka	Increase
Stydenok	Decrease
Chervonni Oskil	No change

Three ambulatories indicated no significant change. These are Lipchanivka, Kapitolivka, and Chervonni Oskil.

For three ambulatories (Bygaiyovka, Vernipillya, and Zavodi), it is unknown if cases closed have increased or decreased. . Zavodi has never had a doctor and did not track these statistics. For Bygaiyovka, the question was asked, and the nurse went into another room to check files, but got sidetracked with another task. For Vernipillya, the question was accidentally skipped.

Cases sent to Izyum

For ten of the ambulatories, the average number of cases sent to Izyum for treatment per month is seven. For two of the ambulatories, the statistics of the number of cases sent are unknown. Stydenok did not keep track of the statistics, because they lacked a doctor. Kamyanka did not make any differentiation between cases sent to Izyum for treatment or for consultation. Its results were tabulated in with the statistics for cases sent for consultation. Lipchanivka has the most with 18 cases sent to Izyum per month.



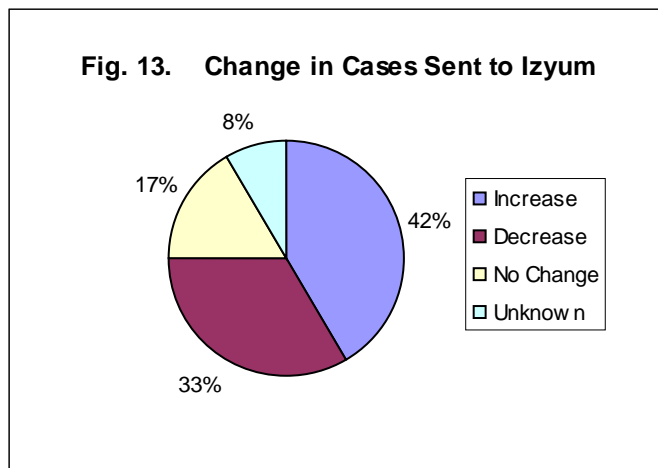
Only seven establishments were surveyed for the number of cases sent to Izyum for further consultation per month. The average is 23. Kamyanka had the highest of 62. Since this included cases for treatment, this probably skewed the average to be a little higher than it really is. For five of the establishments, it is unknown as to how many cases are sent. For three of the establishments, the question was not asked, because in the fourth interview, the question was asked, “How many cases are sent to Izyum each month?” and the interviewee responded, “For consultation or for treatment?” These three were Zavodi, Chervonni Oskil, and Vernipillya. These three followed the same assumption as the interviewer that the question referred to treatment and gave statistical answers consistent towards treated cases being sent to Izyum, as opposed to case sent to Izyum for consultation. Stydenok did not keep track of this statistic, because it lacked a doctor. For Kapitolivka it is unknown how many cases are for consultation, because the question was missed or forgotten.

Table 6. Cases Sent to Izyum

Ambulatory	Treated Cases to Izyum	Consultation Cases to Izyum
Lipchanivka	3-5	30
Bygaiyovka	4-5	10-15
Vernipillya	8-10	Unknown
Dovgenkye	7	For both
Zavodi	6-10	Unknown
Kamyanka	Unknown	62
Kapitolivka	2-3	Unknown
Kynye	5-6	15
Levkivka	18	35-40
Aleksandrivka	10	for both
Stydenok	Unknown	Unknown
Chervonni Oskil	5	Unknown

Of all the establishments, five stated that the number of cases sent to Izyum for either treatment or consultations had increased. These are Bygaiyovka, Kamyanka, Kapitolivka, Levkivka, and Aleksandrivka. Four stated a decrease. This are: Lipchanivka, Vernipillya, Zavodi, and Kynye. Dovgenkye and Chervonni Oskil said there was no change. Stydenok did not keep track of this statistic, because it lacked a doctor.

Table 7. Change in No. of Cases Sent to Izyum



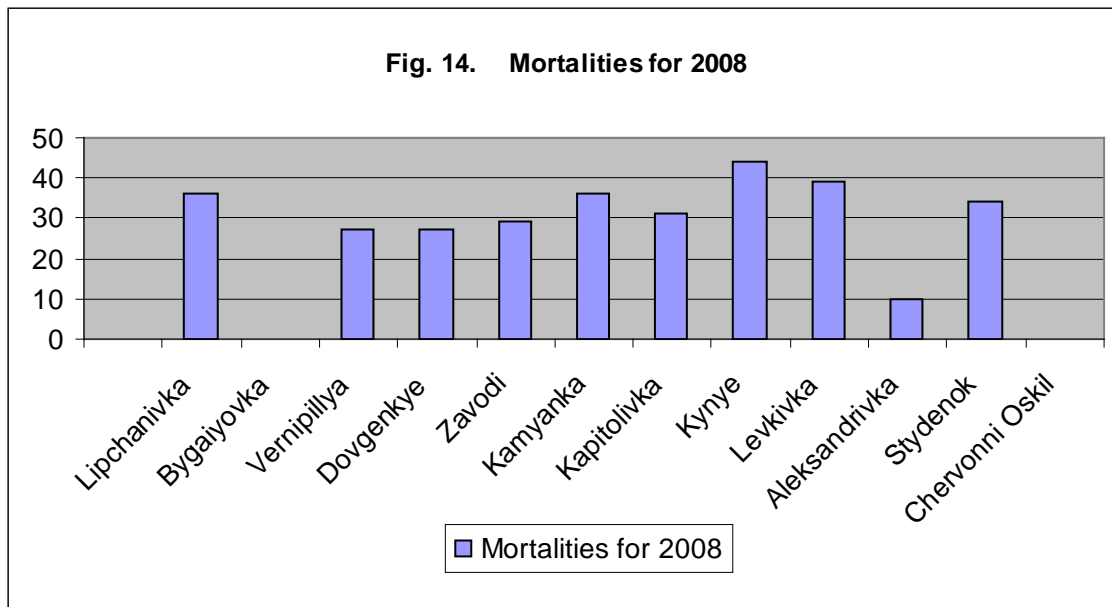
Ambulatory	Change in Cases Sent to Izyum
Lipchanivka	Decrease
Bygaiyovka	Increase
Vernipillya	Decrease
Dovgenkye	No change
Zavodi	Decrease
Kamyanka	Increase
Kapitolivka	Decrease
Kynye	Increase
Levkivka	Increase
Aleksandrivka	Increase
Stydenok	Unknown
Chervonni Oskil	No change

Inpatients

Only three villages have infirmaries or beds allowing patients to stay over night. Chervonni Oskil has one because it is a full clinic and averages 35 to 40 patients a week. Bygaiyovka averages 10 patients. Levkivka averages 18 patients. By law, a patient can only stay for 10 days. If the need a bed for a longer period, they must then return home. If the care needs serious medical monitoring, they maybe transferred to the hospital in Izyum.

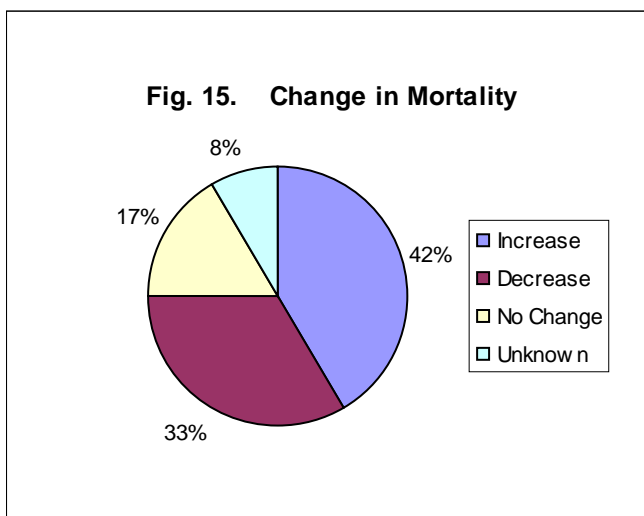
Mortality for 2008

Only eleven of the 12 ambulatories responded to the question regarding mortality. The average number of deaths in the past year in each sub-district was 35. There is no data for Bygaiyovka because the nurse got side tracked with work while checking records in another room. The highest number of deaths was in Chervonni Oskil (again, the region with the highest population), which stated answered a range of 45-90.



Three of the ambulatories, Aleksandrivka, Kamyanka, and Kapitolivka, indicated an increase in the number of deaths. Three of the ambulatories (Kynye, Vernipillya, and Lipchanivka) indicated a decrease in the number of deaths. Three of the ambulatories, Stydenok, Levkivka, and Dovgenkye indicated ‘no change’. Three of the ambulatories, Chervonni Oskil, Zavodi, and Bygaiyovka are unknown.

Table 8. Change in Mortality for 2008



Ambulatory	Change in Mortality
Lipchanivka	Decrease
Bygaiyovka	Unknown
Vernipillya	Decrease
Dovgenkye	No change
Zavodi	Unknown
Kamyanka	Increase
Kapitolivka	Increase
Kynye	Decrease
Levkivka	No change
Aleksandrivka	Increase
Stydenok	No change
Chervonni Oskil	Unknown

The national death rate for Ukraine in 2008 was 16.3 deaths per 1000 population.³¹ Below is a table comparing the death rates reported by the ambulatories to the national rate. A simple formula was used to compare, taking the reported rate, multiplying by 1000, and then divided by its serviced population. Aleksandrivka had a converted death rate of 15.1 per 1000, which was 1.2% lower than the national average. All others were above the average. Most significant are the ambulatories of Zavodi and Kamyanka. Zavodi had a converted rate of 28.2 per 1000, which was 42.2% above the average. Kamyanka had a converted rate of 27.6 per 1000, which is 41.0% above the average.

Table 9. Comparison of Mortality Rates with National Average.

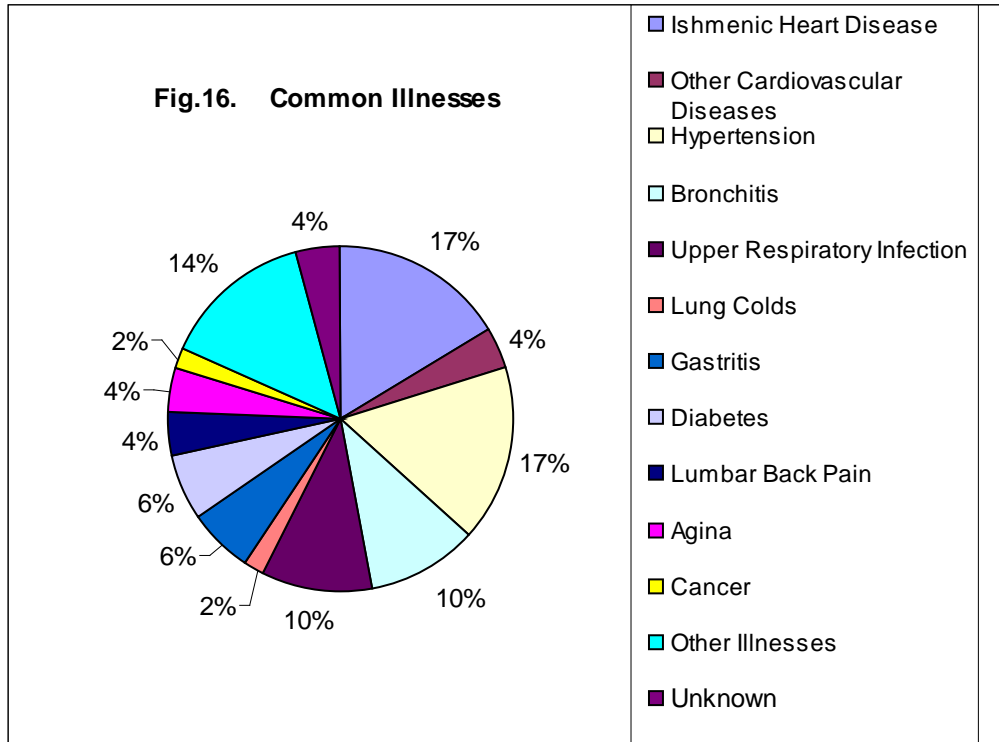
Ambulatory	Mortalities for 2008	Rate converted to per 1000	Difference from National Average	Percentage	Population - 01.01.08
Lipchanivka	36	18.2	1.9	10.3%	1981
Bygaiyovka	Unknown	Unknown	Unknown	Unknown	1517
Vernipillya	27	17.7	1.4	7.9%	1526
Dovgenkye	27	25.7	9.4	36.5%	1052
Zavodi	29	28.2	11.9	42.2%	1028
Kamyanka	36	27.6	11.3	41.0%	1302
Kapitolivka	31	17.0	0.7	4.1%	1823
Kynye	44	17.3	1.0	5.8%	2543
Levkivka	39	24.0	7.7	32.2%	1623
Aleksandrivka	10	15.1	-1.2	-7.9%	662
Stydenok	34	19.5	3.2	16.4%	1744
Chervonni Oskil	45-90	19.7 ³²	3.4	17.3%	3703

Common illnesses

Below is Figure 14 displaying the most common illnesses observed by the ambulatories and the clinic at Chervonni Oskil. The table on the next two pages lists the specific responses and compares them to the most severe illnesses observed. The illnesses seen the most by the facilities are ischemic heart disease, and hypertension(eight of twelve facilities). Bronchitis and cold illnesses are the second most common, as reported by 5 of the facilities. One ambulatory listed cancer as a common illness, compared to five ambulatories that listed cancer as a serious illness.

³¹ Wikipedia. *Demographics of Ukraine*,

³² For calculation, the mean of 73 was used.



Severe Illnesses

Below is a list of the more severe illnesses observed by the ambulatories and the clinic at Chervonni Oskil. The most observed were cancer-related illnesses, reported by five ambulatories. Next is trauma and stroke, which was seen by four of the establishments. It is interesting that only one ambulatory stated that Tuberculosis was the worse serious illness seen. Ukraine and the international community have been running a campaign for treating tuberculosis.

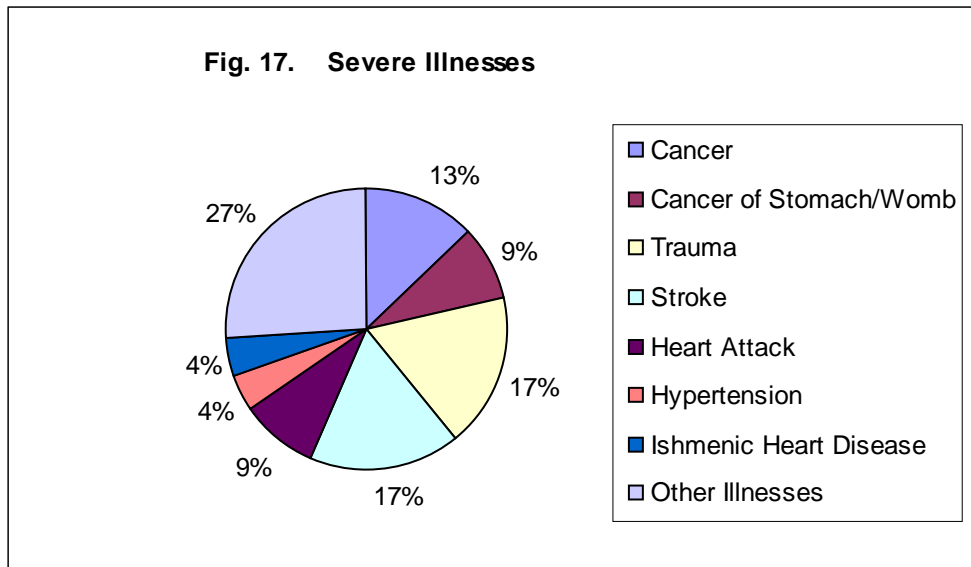


Table 10. Illnesses

Ambulatory	Common Illnesses	Severe Illnesses
Lipchanivka	Ischemic heart disease, Hypertension, Illnesses to the Spinal System, Lung colds, "Unknown"	Heart Attack, Inadequate Myocardium Circulation Angina, Trauma
Bygaiyovka	Bronchitis, Ischemic Heart Disease, Upper Respiratory Infection, Osteochondosis, lumbar back pain, inflammation of stomach and esophagus, gastritis	Stroke, hypertension, intoxication
Vernipillya	Hypertension, Bronchitis, Ulcers, Polyarthritits, Gastritis, "Unknown"	Trauma, coma
Dovgenkye	Ischemic Heart Disease, Hypertension	Cancer, narcotics abuse
Zavodi	Hypertension, diabetes, Ischemic Heart disease	Cirrhosis of Liver, alcohol abuse, stroke
Kamyanka	Ischemic Heart Disease, Bronchitis, Hypertension, diabetes	Cancer, Tuberculoses
Kapitolivka	Hypertension, Bronchitis, Angina, Upper Respiratory Infection	Heart attack, Stroke
Kynye	Disease of Cardiovascular system, Ischemic Heart Disease, System: artery, hypertension, gastritis, stomach ulcer	Cancer of stomach and womb
Levkivka	Cold illnesses, Angina, Lumbar back pain	Trauma
Aleksandrivka	Hypertension, Upper Respiratory Infection	Stroke
Stydenok	Ischemic Heart Disease, Bronchitis, Laryngitis, Tracheitis, Pharyngitis	Trauma, Cancer of stomach and womb
Chervonni Oskil	Diabetes, Cancer, Upper Respiratory Infection, Ischemic Heart Diseases	Ischemic Heart Diseases, Cancer

Problems affecting service

On the next page are the responses to the question regarding problems affecting service to the facilities, as well as resources needed. The most common response (six of eleven ambulatories) was "old and outdated machines".. On average, much of the equipment was from the 1970's and some even from the 1960's. Nearly every facility I observed had some old machines, except for Kamyanka. Kamyanka's equipment, as well as remodeling, were state of the art and appeared to be less than five years old. The second most common response was, "lack of finances." Four facilities do not have running water and rely on a well. Three have no gas heating and use

electric radiators. It is possible that there are more facilities lacking gas and running water, because this issue was not brought up until the fourth or fifth interview, and they are accustomed to life without them. None of the ambulatories had any computers. Two stated that they had no doctors, and two others stated that they have no dentist. Three stated that they had no ambulance service. Only Chervonni Oskil and Bygaiyovka had authentic ambulances that were about 15 years old and modeled after the same design as a 1960's Soviet Army van. On average, an ambulance was a Doctor's or paid driver's personal car, resembling a 4-door, or 2-door car with a lift-back trunk.

One nurse, who was about forty or fifty years old said, "I am afraid of any computer installation, because I have never used one." In a conversation following the interview, one dentist said, "What the ambulatories need more than anything is technical training, rather than equipment." This question was not purposely asked, because the interviewee may have perceived this as questioning their qualifications.

Resources needed

Below are the responses for the question that asked for what resources needed. As one nurse said, "It's a difficult question, because sometimes we are not aware of what resources are needed." Four facilities stated a need for medicine, but only one previously indicated it as a problem. Four stated a need for a new ambulance, but only one previously indicated it as a problem. Three stated that financing was needed, but only one previously indicated it as a problem. Two stated that they needed doctors and previously indicated it as a problem. Fourteen responses were for new equipment and often specifying specific types. Three stated the need for supply related items. Two stated the need for computers, but one had previously mentioned it as a problem. One ambulatory, Aleksandrivka, was completely satisfied and said it did not need anything.

Table 11. Problems and Needed Resources.

Ambulatory	Problems	Needed Resources
Lipchanivka	In sufficient laboratory, no running water	A new "Pen –like" device for examining eye-pressure and glaucoma (Diathega), an expensive multi-functional electric and heated massage table (Nyga Best).
Bygaiyovka	No heating gas, lack of gas for ambulance, outdated machines, laboratory needs upgrading, Beds don't recline properly	New beds, newer laboratory - Light density of fluid scanner
Vernipillya	Financing, outdated machines; lacking ambulance	medicines; Ambulance; cardiograph; first-aid bags; dentist; renovation
Dovgenkye	No doctor; No ambulance; Financing; Insufficient medicine	Financing; doctor; ambulance transport
Zavodi	No dentist; polluted water supply	New Dentist supplies; medicine

Kamyanka	No diagnostics, lack of financing, no X-Ray, no water	light density of liquid scanner, financing, computers, glaucoma/eye pressure measurement device
Kapitolivka	Financing, outdated machines (oldest '61)	Dentist chair, Dental instruments, Sanitary equipment and supplies, replacements for every apparatus, More technical/specialization
Kynye	No gas; no water; old dentist equipment; old instruments, oldest is 30 years; town is 18 km in lengths	Financing.
Levkivka	No financing, especially for ambulance. Doctor uses personal car.	Medicine needed. Replacement of instruments, oldest is 1965. Dentist chair is 2 years old, but looked older.
Aleksandrivka	Lack of medicine, No Dentist or place to put a chair, normal car for ambulance, 3,000 UAH for financing.	They felt satisfied.
Stydenok	Materials, no gas, no water, no ambulance, no doctor, insufficient medicine	Doctor is needed severely, driver needed to extend services, xerox.
Chervonni Oskil	No computers, lack of medicines, Ambulance is 18 years old, Outdated machines.	New ambulance, computers, medicine, new apparatuses

Mood of Interviewee

Of the twelve ambulatories, two of them were highly energetic about the interview. They were Kapitolivka and Kamyanka. Kapitolivka had heard about the interviewer's previous successes in Izyum, and the dentist's son had participated in his summer camps. Kamyanka is a very clean and remodeled facility with most of its equipment very modern. The staff displayed a lot of pride for its establishment and the doctor's abilities.

Four of the ambulatories were in a pleasant mood and very cooperative with the interview. These were Zavodi, Lipchanivka, Stydenok and Kynye. Tea and cookies were offered at these interviews, which contributed to the mood.

Four of the ambulatories were reluctant, defensive, or reserved at the beginning of the interview, but eventually warmed-up and cooperative. They are Chervonni Oskil, Dovgenkye, Levkivka, and Bygaiyovka.

One ambulatory, Vernipillya, was reluctant and ashamed during the interview. Most likely this was of the condition of their facilities, which was in need of renovation and new flooring. The doctor was even hesitant on conducting the guided tour, and showing the older equipment.

One ambulatory, Aleksandrivka, was shocked at the beginning of the interview, but warmed up over time. Most likely this was because the interviewer had called them three days prior, and arrived suddenly after visiting Bygaiyovka on his way back to Izyum. Following that interview, the interviewer decided not to schedule more than one interview on the same day. The figure below displays the percentages the mood of interviewees.

Recommendations on Ambulatory Closings

Arguments for keeping status quo and improving existing ambulatories

There are six reasons to maintain the current number of ambulatories. First, 50% of regions are experiencing increased patients over the past few years. Only 17% have experienced no change. As stated above, this may be due to the current economic crisis, and as two ambulatories stated, the improved confidence of services provided by new doctors.

Second, as several of the interviewees stated, there are an increasing number of retirees and elderly. Such patients are more likely to experience increasing health problems and decrease in mobility.

Third, compared to most Europeans and Americans, Ukrainians own fewer cars. Nine out of ten Americans own cars.³³ While in Ukraine, car sales declined by 78% in 2009.³⁴ Should an ambulatory be closed, this could cause more difficulty for villagers to have access to healthcare, if they are unable to travel to Izyum on their own means. Also, gasoline prices have soared to their highest price ever. As of September 2009, gasoline prices are at 6.47 UAH per liter for A-92 gasoline (\$2.99 per Gallon).³⁵ This could be another factor in the current increase in ambulatory visits, especially since the nurse in Zavodi says she makes only 800 UAH (roughly \$100 USD) a month.

Fourth, public transportation is poor. On average, rural bus routes travel twice or three times a day, as stated earlier in the paper.

Fifth, the closure of an ambulatory could result in diminished services and accessibility and be counter productive to Objective B 3.1 of Izyum's Strategic Economic Development plan, *"Provide accessible and high-quality medical services to rural and urban populations"*

Sixth, this analysis did not review any laws or regulations. Existing laws may be a barrier and require certain facilities for certain population levels or densities. This could apply especially for the clinic at Chervonni Oskil. It may not be possible to close any ambulatories without any legal reform.

Last, Zavodi and Aleksandrivka operate at slightly better than a FMAP. They each have a staff of four people, and Zavodi is without a doctor, because it never had the full improvements to an ambulatory status as it was supposed to. Also, Stydenok has a staff of ten and has been operating for five years without a doctor. If either of these ambulatories were closed and downsized to a FMAP, such impact would be very minimal in cost and service reduction.

³³ The Nielsen Group.

³⁴ Kraznohon

³⁵ Інтерфакс-Україна. (Interfacts-Ukraine)

Closing of Ambulatories

Per a conversation with a TACIS team member, I was asked if there were two ambulatories that could be closed. This was due to the World Health Organization's report, *Health Care Systems in Transition*,³⁶ stating that Ukraine has a larger number of healthcare workers than most European countries, and that services should be consolidated.

Because of my lack of health care experience, I recommend that a second and more in-depth process be conducted to determine closing recommendations. I also recommend that a second survey should be conducted in order to determine what is being done to treat illnesses, and how effective services are for the rural population. Nevertheless, I want to provide some initial thoughts on whether any ambulatories should be closed, and if so, which ones.

First, if keeping the status quo and improving existing facilities is not viable, and an ambulatory is to be closed down, I highly recommend that it be downgraded to a FMAP (Nurse/Mid-wife station), possibly two for the area, and efforts be made to extend ambulance and outreach services to the villages.

For the discussion of closing, this paper presents arguments for maintaining the same number of ambulatories and improving existing services, as well as criteria for determining which ambulatories to close. The criteria are as follows:

- Distance from Izyum
- Total number of population served
- Population dispersion (How spread out are the villages within the region of an ambulatory)

I did not have access to any financial statements; otherwise cost would be listed as a criterion. Such information was considered sensitive. Had there been more time to develop a better working relationship, such information might have been possible.

Chervonni Oskil has been excluded from this discussion, based on its different level of services and uniqueness.

Recommendations and analysis for closing two ambulatories

Per inquiry from a representative of TACIS, the following discussion is provided for determining which two ambulatories could be closed, if

³⁶ Lekhan, Rudy, and Nolte.

Distance from Izyum, (ranked on closet to furthest)**Table 11. Ranking of Distance from Izyum**

Ambulatory	Km
Kapitolivka	4.29
Kamyanka	8.91
Lipchanivka	11.32
Levkivka	12.00
Zavodi	15.43
Stydenok	17.14
Dovgenkye	18.86
Kynye	18.92
Vernipillya	19.71
Aleksandrivka	29.26
Bygaiyovka	33.00

If the decision to close an ambulatory was solely based on its proximity to Izyum, then Kapitolivka would be the most likely to be closed, since it is roughly 4.29 kilometers away from Izyum. The next would be Kamyanka 8.91 kilometers. This criterion was selected for determining how remote a settlement is.

Criteria based total population served (least to most)**Table 12. Ranking of Population Served**

Ambulatory	Population
Aleksandrivka	662
Zavodi	1028
Dovgenkye	1052
Kamyanka	1302
Bygaiyovka	1517
Vernipillya	1526
Levkivka	1623
Stydenok	1744
Kapitolivka	1823
Lipchanivka	1981
Kynye	2543

If the decision should be based solely on the population within the region of an ambulatory, then Aleksandrivka would be the most likely closed, since it only covers 662 people. The next would be Zavodi with 1028.

Criteria based total population dispersion (Most disperse to least)**Table 13. Ranking of Population Dispersion**

Ambulatory	No. of Villages	Closest Village to Ambulatory (Km)	Furthest Village to Ambulatory (Km)
Kapitolivka	2	1.71	1.71
Stydenok	3	2.4	2.57
Dovgenkye	3	5.14	7.37
Kamyanka	4	4.46	6.0
Lipchanivka	4	4.29	7.71
Aleksandrivka	5	1.54	5.28
Zavodi	5	2.57	5.66
Bygaiyovka	5	4.0	7.04
Kynye	7	5.06	11.0
Vernipillya	7	2.74	15.09
Levkivka	7	3.43	9:36

This criterion was selected as a way to classify density, based on how many villages would be impacted and their proximity to the ambulatory. Kapitolivka would be the most likely closed, since there is only one other village in its area and it is within 1.71 kilometers. Next is Stydenok, with two additional villages in its area and which are both roughly 2.5 and 2.57 kilometers from the ambulatory.

Possible Impact of Closing of an Ambulatory

Below is a decision matrix comparing the rankings of the previous criteria. In all rankings, 1 indicates the ambulatory which should be closed on that criterion. For Distance, rank 1 is for the closest ambulatory to Izyum, rank 11 is for the furthest. For Population served, rank 1 is for the ambulatory with the smallest population, rank 11 is for the largest population. For population Dispersion, rank 1 is for the ambulatory with the smallest dispersion or most condensed population, rank 11 is for the most dispersed or least condensed. The table also includes a column for other considerations discussed in the possible impact of closing an ambulatory.

Table 14. Decision Matrix

Ambulatory	Distance Rank	Population Served Rank	Population Dispersion Rank	Change in Visits	Other Considerations
Lipchanivka	3	10	5	Increase	Fewer visits than average. Villages near Izyum, serviced population would go there.
Bygaiyovka	11	5	8	Increase	Fewer visits than average. Most remote village.
Vernipillya	9	6	10	Decrease	10% or more Population Decrease.
Dovgenkye	7	3	3	Decrease	Fewer visits than average. Close to Kamyanka. Well paved Highway. No doctor. 10% or more Population Decrease.
Zavodi	5	2	7	Increase	Partially upgraded FMAP. No doctor. 10% or more Population Decrease.
Kamyanka	2	4	4	Increase	Very cohesive team. Equipment very new.
Kapitolivka	1	9	1	Increase	Second largest village. Very cohesive team. Well known Dentist. Serviced Population would go to Chervonni Oskil or Izyum.
Kynye	8	11	9	Increase	10% or more Population Decrease.
Levkivka	4	7	11	No Change	10% or more Population Decrease.
Aleksandrivka	10	1	6	Increase	Fewer visits than average. Not far from Bygaiyovka. Well paved Highway. 10% or more Population Decrease.
Stydenok	6	8	2	Decrease	Fewer visits than average. Decreasing visits.

If two ambulatories are closed, they should be downgraded as FMAPs, and resources should be consolidated into the existing system. In my opinion the two should be Aleksandrivka and Dovgenkye. This is considered after carefully comparing these two to the rest of the ambulatories.

For Aleksandrivka, impact and readjustment should be minimal. As stated earlier, it has a staff of four people, so to downsize to a FMAP would only displace two to three workers. It is noted that one displaced worker is a physician that could be asked to be transferred to either Zavodi, or Stydenok, which lack a physician. Such a request is not simple. The physician may not wish to relocate to those places, and physician salaries are usually dependant on the budget of the local council of the specific sub-district. Aleksandrivka services the smallest amount of people, which is a number of 662, and was ranked first. Its daily patient visits are 15, below the district average of 18. In addition, it indicated that this had decreased over the previous years.

Aleksandrivka was ranked tenth in distance from Izyum, making it the second furthest from the town. This should not be considered heavily, because it is located on a well traveled, paved, road from Bygaiyovka to Izyum, and it is not far from Bygaiyovka, which is a larger facility.

The interviewee said that patients travel to Izyum or Bygaiyovka to receive dental work. It can be assumed that travel to either Izyum or Bygaiyovka; will not be too much of an inconvenience. Four other villages will have to consider a different ambulatory for medical services.

Aleksandrivka was ranked sixth for Population Dispersion, which is in the middle of the range for the district. Jovtneve is located on a road about equidistant Bygaiyovka and Aleksandrivka. Such a change in services should not be too inconvenient. Kazyutivka and Pidvicokye are not too far from Kynye. Both have a population of 169 and 35, respectively. Travel to Kynye would be a little bit longer than heading to Aleksandrivka. Kynye already serves 7 villages and has the largest population of 2543. Given the small sizes of Kazyutivka and Pidvicokye, the impact of increased patients may not be very significant. Radyanckye may have difficulty adapting to the change, because it is a bit more remote and further from the main road to Izyum and Bygaiyovka. Radyanckye has a population of 22 people.

I chose Dovgenkye because it ranked third least in population (1052 people) and including itself, only serves three villages. Its sub-district is located on the opposite end of the Izyum District as Aleksandrivka, and thus and displacement made by its closing, will not interfere with Aleksandrivka's closing. Unfortunately, Dovgenkye has a staff of 12, which most work part-time shifts. From the interview, the interviewer got the impression that the chief administrator was fighting to keep their jobs intact, and most likely the ambulatory will be resistant to the closing. Dovgenkye lacks a doctor, and in the interviewee stated that people sometimes travel to Kamyanka for treatment and consultation beyond the nurses' expertise. The illnesses observed by Dovgenkye are ischemic heart disease, hypertension, cancer, and narcotics abuse. These are pretty common and consistent to the rest of the region and Ukraine. It is noted that Dovgenkye averages 10 visits a day, which is the fewest of all the ambulatories. Also, it has been experiencing a decrease in the number of patient visits and closed cases within the previous years.

Dovgenkye ranked seventh in distance from Izyum, which is just about the middle of the range. It also was ranked third in population dispersion, so it is not a sub-district that is very spread out. Like Aleksandrivka, the village is located on a well paved road that is a short distance from Kamyanka, which intersects a major highway heading to Izyum. Furthermore, the villages Brajivka and Cligivla are located roughly between Dovgenkye and Vernipillya. They both have a population of 137 and 179, respectively, and each have a FMAP. Judging by the map, it appears that the roads to Vernipillya are in better condition than to Dovgenkye. It's quite possible that villagers consider traveling to Vernipillya or Izyum over Dovgenkye, for doctor visits. Vernipillya already serves seven villages in its region. However, most of them are relatively close to Izyum, and villagers may not bother traveling to Vernipillya for medical services. Thus the impact of displaced patients may not affect Vernipillya significantly.

Kapitolivka was considered for closing because of its close proximity to Izyum. However, it is advised not to be closed. Kapitolivka had a highly energetic team, and it looked one of the best working dynamics. The dentist also has a very good reputation, and people from Izyum have been known to travel to him for dental services. The village has the second largest population of 1405. There may be legal regulations requiring to have a doctor in that large of a population.

Furthermore, the displaced patients would fall onto Izyum or Chervonni Oskil for services, which already service a large population.

Kamyanka was also considered because of its close proximity to Izyum. However, Kamyanka had the most new and modern equipment, plus a very cohesive team. If it were to close, it may cause a political disruption or backlash. Furthermore, has been experiencing an increase number of patient visits and cases closed, based on the effectiveness of the doctor.

Lipchanivka was also considered because of its close proximity to Izyum, but it is recommended that it should remain open. Lipchanivka serves five villages and has the second largest territorial population of 1981. Its villages are located closer to Izyum, then Kynye or Bygaiyovka. Should it be closed, most of its population would consider Izyum for medical services and place a heavier burden on its facilities.

The rest of the facilities are recommended to remain open. They all serve five or more villages within their regions and their populations are in the top 50% percentile. If any of these were closed, the impact of displaced patients would be greater.

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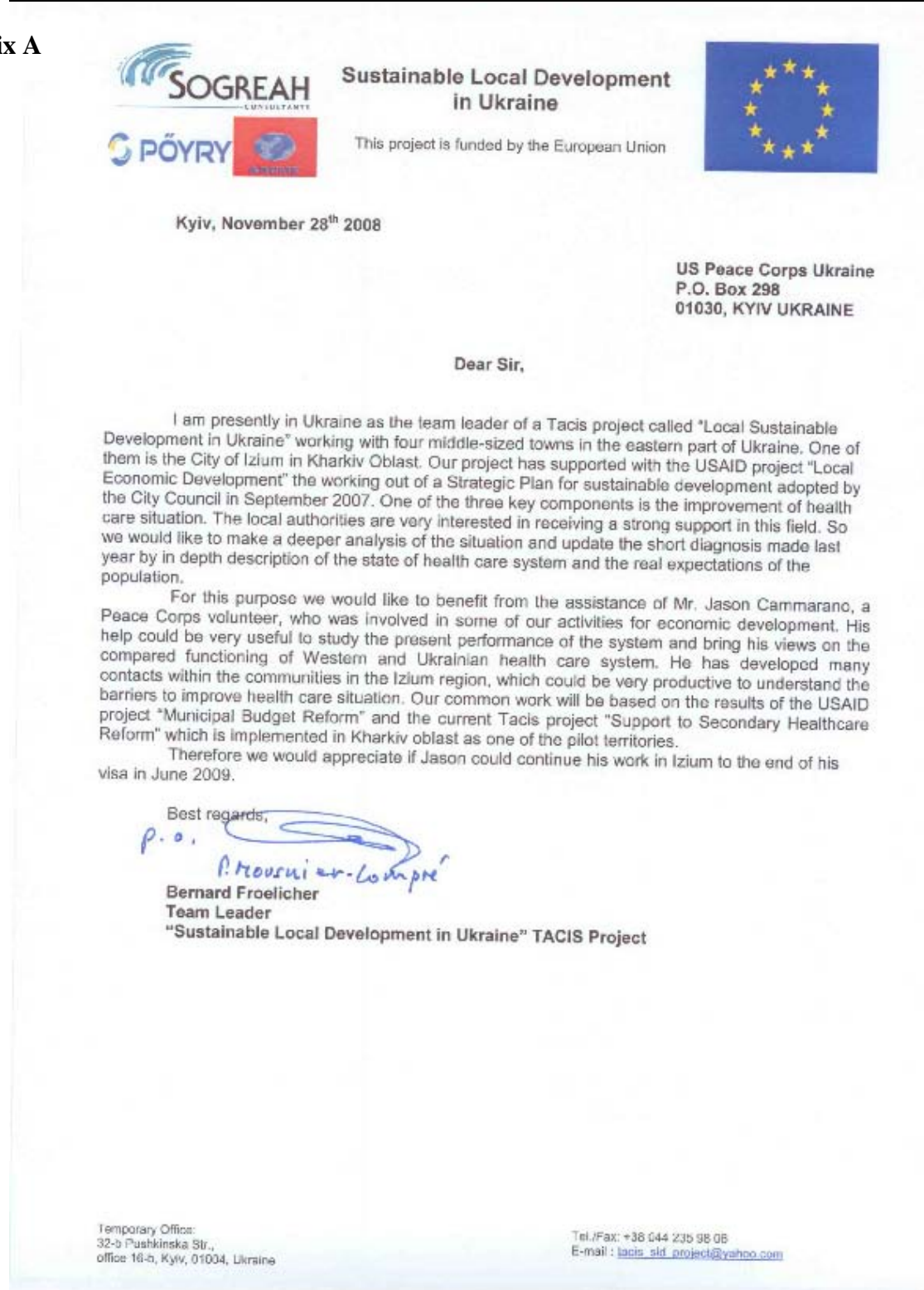
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Appendixes

Appendix A



Appendix B**Interview Questions for clinics**

1. How many telephone conversations to you have with patients in a month?
Сколько телефонных разговоров вы занимаетесь с хроническими пациентами для крайней необходимости за месяц?
2. How many patients usually visit you in a day?
Сколько пациентов (БОЛЬНЫХ) обычно навещает вас за день?
3. How many patients usually visit you in a month?
Сколько пациентов (БОЛЬНЫХ) обычно навещает вас за месяц?
4. Is it more or less than a few years ago?
Это больше или меньше, чем несколько лет назад?
5. How many treated cases do you close in a month?
Сколько полных случаев болезней вы лечите за месяц?
6. Is it more or less than a few years ago?
Это больше или меньше, чем несколько лет назад?
7. How many cases are sent to Izyum in a month?
Сколько случаев болезней переедят Изюм за месяц?
8. Is it more or less than a few years ago?
Это больше или меньше, чем несколько лет назад?
9. How many inpatients stay the night in a month? For how many days do they usually stay? Is it more or less than a few years ago?
Скольким пациентам (больным) нужно отдохнуть здесь для ночи через месяц? Для того, сколько дней? Это больше или меньше, чем несколько лет назад?
10. How many mortality and morbidity cases do you see in a year? Is it more or less than a few years ago?
Сколько случаев смертности или болезненности вы смотрите за год? Это больше или меньше, чем несколько лет назад?
11. Is there a season that has a larger number of patients?
Есть сезон, который имеет большее число пациентов (БОЛЬНЫХ)?
12. Is there a season that has the fewest number of patients?
Есть сезон, который имеет меньше всего число пациентов (БОЛЬНЫХ)?
13. What are the most common illnesses?
Что самые общие болезни?

14. What was the most serious illness or accident that you saw?

Что была самая тяжелая болезнь или несчастный случай, которое вы видели?

15. What problems or obstacles prevent work or service to patients from being better?

Какие проблемы или преграды (барьеры) препятствуют работе или сервису пациентам (больным), чтобы быть лучше?

16. What problems or obstacles prevent work or service to patients from being better? And why?

Какие ресурсы могли бы сделать сервис лучше? И почему?

Appendix C**Vernipillya****Population:** 707**Micro region population:** 755

Staff of 7: 1 Doctor, 3 Family Nurses, 1 Akyuarka, 1 Lab Assistant, 1 Malashaya Sestra (Santori), No Dentist.

Mood of interviewee: Cooperative with questions but felt reluctant and ashamed about a photographed excursion, because of the ambulatory's condition.

- 1) They never take calls for emergency. People walk in. It took four calls over a period of 2 days to reach them.
- 2) 20 patients visit a day
- 3) Roughly 500 a month.
- 4) A little less than previous years. (Check with population drops).
- 5) 50-60 cases are closed in a month.
- 6) (Missed this question) Could assume less if population drop and other ambulatory is a match.
- 7) 8 – 10 cases travel to Izyum a month.
- 8) Less than previous years.
- 9) No inpatients. They close for night hours and all patients remain at home.
- 10) 27 mortality cases, all adults, less than previous years.
- 11) Winter is the season for heavier illness.
- 12) Summer is the fewest
- 13) Common illnesses: Hypertension, Bronchitis, Ulcers, Polyarthritis, Gastritis, ИТН
- 14) Traumatism and commas are the worst seen illnesses.
- 15) Problems: Need financing, machines (some are from 1960s and 1970s), Ambulance service. Izyum is 25 km and Ambulance takes 30 mins to get there (means 1 hour wait/trip for patient).
- 16) Resources needed: Ambulance; Newer cardiographs; First aid type bags; Medicomenta; Renovation – mainly floors, linoleum, a nurse tripped and broke a floor tile right in front of me; Dentist; No computers or IT (training would be needed).

Additional comments: Doctor felt shamed and needed coaxing for the excursion and picture taking. A complete opposite from Korobochkino, who were very proud of their work environment. Doctor was very humble about resources needed. First Aid bags were the first things said.



Vernipillya ambulatory



Hallway



Dental chair



Ultra violet lamp used to kill oral bacteria



Gynecology chair



Examining room

Zavodi **Population:** 484 (largest) **Micro region population:** 1028

Staff of 4: 2 Medics (in between nurse and doctor), 1 Driver/worker, 1 Malashaya Sestra (Santori). No Doctor. No dentist. **Note:** Lead medic said also 2 medics that each run a FMAP in neighboring villages.

Mood of interviewee: Cheerful, positive, supportive and cooperative.

- 1) 25 calls per month.
- 2) 6 to 7 people visit a day. Once or twice a day, they make house calls to mainly kids and retired. Total all together is 20 people
- 3) 600 a month seen in visits to and house calls.
- 4) More patients seen today, because of increasing retired.
- 5) Case records are not kept. Requires a Doctor.
- 6) No answer, since case records are not kept and closed.
- 7) 6 to 10 patients are sent to Izyum a month.
- 8) #7 is less than several years before, because of the growing number of retired. The journey to Izyum is difficult. Only 2 marshrutka buses travel in the day, morning and evening. A patient travels, visits the hospital or dentist, and then sometimes spends the whole day at the bus station.
- 9) No inpatients. Ambulatory is closed at night.
- 10) 29 people died in 2008. All adults. 3 died in 2009 from January to end of March. No births.
- 11) Winter heavier.
- 12) Summer fewer.
- 13) Common illness: hypertension, diabetes, Diseases of the Cardiovascular System “Ischemic”
- 14) Cirrhosis of the liver, alcohol abuse, stroke
- 15) Problems: lack of effective dentistry. Root cause is poor water system. There is no filtering or proper sanitation, and therefore heavy amounts of dirty and metal residue. It is not meeting the health standards of Ukraine. The bad water adds to the damaging of teeth. A dentist does make trips to the village from time to time, but it is difficult in finding a dentist willing to live in the village. Retired have difficulty in traveling to Izyum, because of the bus only makes 2 trips to town.
- 16) Main resource needed: New dentist chair and better provided dentistry cabinet and supplies for when the visiting dentist arrives. The chair is very old, makes a lot of noise, and also scares kids. It even scares the kids when drills and instruments are heard from outside.

Additional comments: Historically, the ambulatory was once a smaller FMAP that was supposed to be upgraded to an ambulatory. The medic mentioned some about ‘...due to a lack of funding,’ and ‘...should have more services,’ that makes me think that it did not get upgraded as much as it needed to be. The decision to make it an ambulatory was because of its distance from Izyum. Some of its services are done without pay from the patients. There has been some kind of organization, possibly local, that has provided with donations of instruments. Most instruments looked old and in the same condition as seen in Vernipillya. They do have a paid driver that acts as an ambulance and does other work. The car is a standard brown, 4-door car.

The medic was a very cheery, talkative woman, which made the interview pleasant. She mentioned that the region of Zmiiv has been installing computers in every ambulatory, and she was a bit afraid, because she had never worked one in her life.



Zavodi ambulatory



Physical Therapy room



Electrodes used for mild muscular shock therapy



Ultra violet lamp for sterilization



UV heating for physiotherapy after surgery (УВЧ)



Dental chair



Dental chair



Hallway



Laboratory



Cardiogram

Chervonni Oskil **Population:** 3016 (largest) **Micro region population:** 3032

Note: It's a clinic, with patient infirmary.

Staff of 41: 6 Doctors, 21 Nurses, 1 Dentist, 1 Lab Assistant, 1 X-Ray Technician, rest are support workers (ambulance drivers, cooks, orderlies).

Mood of Interviewee: At first seemed a little reserved, but then was relaxed. Overall was cooperative.

- 1) 340 calls per month.
- 2) 45 - 50 visits per day.
- 3) 1500 visits per month.
- 4) Less patients than previous years, because people lack money to pay..
- 5) 75 closed cases a month
- 6) Very little change than previous years
- 7) 5 or less patients are transferred to Izyum. Note: Less are transferred because this is a clinic with beds for patients, more doctors and slightly better instruments than ambulatory. Typically, children, extreme trauma, and births.
- 8) Very little change than previous years
- 9) 30 to 35. Maximum is 40 beds. People can not stay more than 10 days. 6-7 is average. Less than previous years.
- 10) 45 to 90 deaths a year (possibly said 45 to 49 and I miss heard). She mentioned a number 6916...could have misunderstood the question about morbidity as total illnesses.
- 11) Winter heavier.
- 12) Summer fewer.
- 13) Common illness: diabetes, cancer, Cold Illnesses, Diseases of the Cardiovascular System "Ischemic"
- 14) Diseases of the Cardiovascular System "Ischemic", cancer
- 15) Problems: lack of computers for effective case records, lack of or need better 'medicanti', instruments are from the 1970's. Ambulance is 18 years old (from 1991) and has broken down over a million times.
- 16) Computers, medicine, instruments and apparatus, new ambulance.

Additional comments: This is a clinic. It would be nice to visit a clinic in another town for this size, just as a comparison. Korobochkino is the same size town, but it was more like a specialized ambulatory.



Chervonni Oskil infirmary



Dinning room



Bathroom



Kitchen



File room



Laundry room



Muscular electrodes and inhaler



Water heater for sink



Cardiogram



Dental Chair



Ambulance



Gynecology

Kapitolivka **Population:** 1405 (largest) **Micro region population:** 1823

Staff of 8: 2 doctors (1 is a dentist), 1 mid-wife, 5 nurses.

Mood of Interviewee: Highly energetic and enthusiastic. A doctor's son had been to my summer camps, so the attitude was like a movie star had arrived. I was also bombarded with a lot of "what is life like in America".

- 1) 40 – 50 calls a month. (Smaller probably due to proximity to main hospital.
- 2) 20 – 30 visits a day.
- 3) 600 visits a month.
- 4) Visits have increase. Believed because of deterioration of ecology and economic depression
- 5) 13 – 16 cases closed a month.
- 6) No change in previous years
- 7) 2 – 3 patients sent to Izyum a month.
- 8) Less because of second doctor working. It has increased the specialization and extended hours of service.
- 9) No inpatients
- 10) 31 deaths past year. It has increased since previous years.
- 11) Winter
- 12) Summer
- 13) Hypertension, Bronchitis, Arthritis, Angina, Cold Illnesses
- 14) Infarct/heart attack, Stroke
- 15) Financing. Machines are old. Oldest is from 1961 (and quickly mentioned with vigorous and slightly humorous pride).
- 16) Dentist chair and instruments. Generally every major machine could need a replacement. Sanitary equipment and supplies is also a need.

Additional comments: The village is on the main road between Izyum and the clinic in Chervonni Oskil. Public transport is frequent to Izyum and takes about 20 minutes. By car it is less time. There is no ambulance, because of the close proximity, and it works very fine for the community. There is a resident who works or lives in Kharkov during the week, who is part of village administration. On Fridays and weekends, his car serves as an ambulance. The doctor felt that there are a lot of people that consult or go

to Izyum, but he is unaware as to how much. It is probably more than most villages. Overall, this was the most active and busy of the ambulatories seen.



Kapitolivka ambulatory



Pharmacist



UV heating for physiotherapy after surgery (УВЧ)



Cardiogram



Dental chair



Electrodes used for mild muscular shock therapy

Bygaiyovka **Population:** 1161 (largest) **Micro region population:** 1517

Staff of 17: 2 doctors (1 is a dentist), 2 Drivers, 10 nurses, 2 orderly, 1 X-Ray Technician

Mood of Interviewee: Main interviewee was a little reluctant, but warmed-up and was participant. Probably was pessimistic that something positive would result of this. There also was a fair amount of patients this morning, and I was possibly detracting from work.

Note: This also has a small, sleeping infirmary for 14 people.

- 1) 20 calls
- 2) 15 visits a day, (Summer is around 10, Winter can be 30)
- 3) 250 – 720 a month
- 4) More so than previous years.
- 5) 37, only the infirmary keeps track. Ambulatory does not.
- 6) More than previous years.
- 7) 4 – 5 sent to Izyum for treatment. 10 – 15 for consultation.
- 8) More than in previous years, based on aging population, requiring services for more sever illnesses
- 9) 10 people staying. Ambulatory can only have people 6 days a week. Infirmary can only hold a person 10 days a week.
- 10) *Not gotten* Nurse said she would look at file, got distracted with a work issue, and I forgot as I continued with other questioning. Use an average estimate taken by villages close to population range.
- 11) Winter
- 12) Summer
- 13) Bronchitis, Diseases of the Cardiovascular System “Ischemic”, Cold Illnesses, Gastritis, “3 check with Sveta”
- 14) Stroke, hypertension, “1 check with Sveta”
- 15) Biggest problem....no heating gas. It is operating off of barely adequate heating operators. Also problem, lack of gas for the ambulance. There is no station in the village, or near. Patients often pay. Most apparatus are old, as common for villages. Laboratory needs upgrade. Beds are old and don’t recline properly.
- 16) Replacement machines. New beds. Newer laboratory – ФЭК. Medicines.

Additional notes: This is the furthest from Izyum, roughly 50 kilometers. Marshrutka travels twice a day, like most. Dentist chair and instruments was very high tech, and modern. It was not inquired as to why or how it was obtained.



Bygaiyovka ambulatory



Ambulance



Dentist chair



X-ray machine



Gynecology room



Laboratory

Aleksandrivka Population: 363 (largest)

Micro region population: 662

Staff of 4: 1 doctors, 1 mid-wife, 1 nurses, 1 orderly

Mood of Interviewee: Seemed kind of shocked. Most likely because, this was in between the car trip from Bygaiyovka to Izyum.

- 1) 20 calls
- 2) 15 visits a day
- 3) 300 a month
- 4) More that previous.
- 5) 50 closed cases
- 6) More than previous years
- 7) 10 sent to Izyum, both treatment and consulting
- 8) More so than previous years.
- 9) No inpatients
- 10) 14 mortality, more so than in previous years
- 11) Winter
- 12) Summer
- 13) Hypertension, Cold Illnesses
- 14) Stroke
- 15) They have a normal car for an ambulance. The mentioned they receive 3,000 UAH a month for financing of the ambulance. Births are all taken to Izyum. They lack a table for giving births.
- 16) Medicine. No Dentist. Patients are sent to Bygaiyovka, Kyne or Izyum. There was no chair, or even a place to put one.

Additional Comments: Phrase about 3,000 UAH was mentioned by the x-ray technical from Bygaiyovka, who tagged along. Therefore, I do not know if this comment means that they are underfunded, or was he pointing out that this is more than what they get...slightly skews the interview response. In general, staff felt pretty content with their situation. The ambulatory was looked newly remodeled. It also has an independent gas heating system. I think the lab technician tagged along, just to point out its better quality...like it was better funded somehow. It may have something to do with, each ambulatory receives a set budget, but with lower staff and demand, they can allocate more resources.



Aleksandrivka ambulatory



Cardiogram



UV heating for physiotherapy after surgery (УВЧ)



Medicine cabinet



Medical tools



Heating furnace

Levkivka**Population:** 534 (largest)**Micro region population:** 1623

Staff of 8: 1 doctor, 1 Dentist, 1 mid-wife, 3 nurses, 1 orderly, 1 driver

Mood of Interviewee: Seemed skeptic at first, then was cooperative. It was also the Birthday of the doctor and in the interview occurred right before the party. There was a lot of busy activity with preparations with the party, which warranted the skepticism. Doctor was also a city councilman for Izyum.

- 1) 40 calls
- 2) 32 visits a day
- 3) 600 a month
- 4) No major change
- 5) 45 closed cases
- 6) More than previous years. Believed because of people having less money, and health is deteriorating.
- 7) 18 for treatment. 35 to 40 for consultation
- 8) More so than previous years
- 9) Yes, can hold 18 patients, 10 is average, for 10 days maximum stay. More so than previous years.
- 10) 39 deaths. Same as previous years
- 11) Spring is more common for illnesses
- 12) Summer
- 13) Cold Illnesses, "Check with Sveta. It involved the spine.
- 14) Trauma
- 15) No financing, especially for Ambulance. Doctor uses his own personal car.
- 16) Medicine. Replacement of instruments, oldest is from 1965. Dentist chair was 2 years old, but looked a lot older.

Additional note: None really. It looked and operated like most previously seen. Doctor frequents seminars in Kharkov on health care.



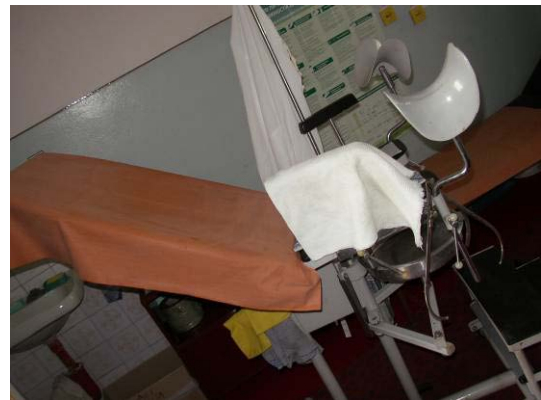
ambulatory



Dental station



Ultra violet lamp used to kill oral bacteria



Gynecology chair



Cardiogram



Physiotherapy bed

Dovgenkye **Population:** 736 (largest) **Micro region population:** 736

Staff of 12: 1 Dentist, 1 mid-wife, 7 nurses, 1 orderly, 1 maintenance worker, 1 Midwife.
Note: Only 2 nurses work full-time. The rest are on some kind of part-time schedule.

Mood of Interviewee: Interviewee was cooperative. She seemed a little defensive on the question of the staff. She may have been just naturally nervous or uncomfortable since the interview was starting. It's possible since this is a large staff, but part-timers, she is doing her best to keep from firing people, and was afraid that I would lead to some kind of recommendation on that.

- 1) 10 calls
- 2) 10 visits a day
- 3) 250 a month
- 4) Less, because there is no doctor
- 5) 15 closed cases
- 6) Less, because no doctor.
- 7) 7 people sent to Izyum, either for treatment or consultation.
- 8) No change
- 9) No beds, not an over night clinic.
- 10) 27, no change from previous years.
- 11) Winter
- 12) Summer
- 13) Diseases of the Cardiovascular System "Ischemic", "Plus one or 2 need to check with Sveta"
- 14) Cancer, Narcotics abuse
- 15) No Doctor, No transport for ambulance, Financing, insufficient medicine
- 16) Financing, doctor, and transport

Additional notes: Other than lack of doctor and transport, it appeared like most Ambulatories. Kamyanka is between Dovgenkye and Izyum. Rumor has it that Kamyanka had a hospital, which was closed do to lack of financing from the collapse of USSR. It's possible, that had some impact on the operation of this ambulatory.



Dovgenkye ambulatory



Dental chair



Gynecology chair



Dental station



Laboratory



Medicine cabinet and sterilization

Kynye**Population:** 748 (largest)**Micro region population:** 748

Staff of 9: 2 Doctors, 1 Dentist, 1 driver, 4 nurses, 1 orderly

Mood of Interviewee: Interviewee was cooperative. She seemed a little reserved at first and then warmed-up. She may have been just naturally nervous or uncomfortable since the interview was starting. She was the doctor recently assigned there, and has been there for a few years. It felt like she had a more technical or educated background by her speech. It is also possible my technical understanding is better.

- 1) 120 - 140 calls
- 2) 15 - 20 visits a day
- 3) 500 - 600 a month
- 4) More than a few years ago, because of the new doctor's technical experience. Before there was no doctor.
- 5) 10 - 15 closed cases
- 6) Before, there was none, because of no doctor. So this inherently is more.
- 7) Consultation at clinic 15. For treatment, 5 -6.
- 8) Less than before.
- 9) No beds, not an over night clinic.
- 10) 44, less than previous years.
- 11) Winter
- 12) Summer
- 13) Diseases of the Cardiovascular System, "Ischemic" heart disease, System: artery system, System: hypertension, gastritis, Stomach Ulcer.
- 14) Oncologic cancer of stomach and womb.
- 15) No gas, No water (taken from a well), Dentist equipment is old. Most instruments are old, oldest is 30 years. Town's length is 18 km, which makes difficulty for patients to get to ambulatory, and them to get to the patients at times.
- 16) Financing.

Additional notes: 2 FMAP stations are located at the ends of the town which help treatment. Cardiogram is brand new. The recently acquired a normal car that serves as an ambulance, which has greatly improved treatment for critical patients.



Kynye ambulatory



Physiotherapy bed



Sterilization tank



Cardiogram



UV lamps for sterilizing a room



Medical supplies

Stydenok**Population:** 1394 (largest)**Micro region population:** 1744

Staff of 10: 1 Dentist, 4 nurses (specialized as 2 Family, 1 children, 1 physical theory), 3 orderlies, 1 Administrator, 1 Maintenance

Mood of Interviewee: Very pleasant, hospitable and cooperative.

- 1) 150
- 2) 12
- 3) 600
- 4) Less than before, because doctor retired 5 years ago.
- 5) 15 closed cases
- 6) Less than before
- 7) They didn't keep track
- 8) They didn't keep track
- 9) No beds. There is no infirmary.
- 10) 34. 9 for this year. No change than previous years.
- 11) Winter
- 12) Summer
- 13) Cold Illnesses, "Ischemic" heart disease, Bronchitis, Laryngitis, "2 Sveta needs to look at", Hypertension.
- 14) Trauma, Oncologic cancer
- 15) Materials, no gas (there is a radiator heating for winter), water, No ambulance, no doctor, insufficient medicines.
- 16) Doctor is severely needed. They mentioned how services were greatly better when there was one. A driver would improve services, as seen in other villages. One person mentioned a xerox machine would help with all the paperwork, and seen how one helps with the administration in Izyum. None of the villages have one.

Additional notes: One worker said, "Sometimes we are not sure what we need to work better." Another said, "That back in the USSR they got a lot of support, and today there is very little."



Hallway



Gynecology chair



Laboratory



Dental chair



Medicine cabinet



Sterilization

Kamyanka **Population:** 1190 (largest) **Micro region population:** 1302

Staff of 13: 2 doctors (1 is a dentist), 1 mid-wife, 5 nurses, 3 orderlies, 1 driver

Mood of Interviewee: Highly energetic and enthusiastic. They were very cooperative and proud of their facility.

- 1) 80 calls a month.
- 2) 20 visits a month.
- 3) 800 – 900 a year
- 4) More, because of good doctor.
- 5) 16 closed cases
- 6) More than previous years
- 7) 62 sent to Izyum for consultation. Treatment was unknown.
- 8) More than previous years, because infirmary was closed.
- 9) None. Infirmary was closed.
- 10) 36, more than previous years.
- 11) Fall and Winter
- 12) Summer
- 13) “Ischemic” heart disease, Bronchitis, Hypertension, diabetes
- 14) Cancer, Tuberculoses
- 15) No diagnostic, lack of financing, no X-Ray, “Something Sveta needs to check, water is from a well. They have gas.
- 16) Financing, Computers, ФК, Аппарат для определения внутриглазного давления контактный (a device for determining intraocular pressure is contact)

Additional Notes: This was the most clean and nicely remodeled ambulatory. Almost every instrument was modern and looked like it was less than 5 years old. It used to be a hospital or infirmary that was closed.



Kamyanka ambulatory



Inhaler



Dental chair



UV heating for physiotherapy after surgery (УВЧ)



Medicine cabinet



Ultra violet lamp used to kill oral bacteria

Lipchanivka **Population:** 916 (largest) **Micro region population:** 1981

Staff of 11: 2 doctors (1 is a dentist), 1 maintenance worker, 5 nurses, 2 orderlies, 1 driver

Mood of Interviewee: Pleasant and cooperative.

- 1) 35 calls a month.
- 2) 12-13 (20 in winter)
- 3) 60 a month
- 4) No change
- 5) 95 closed cases
- 6) No change
- 7) 3 to 5 treatment to Izyum, 30 for consultation
- 8) Less, because of lack of money
- 9) None
- 10) 36 deaths, no change
- 11) Winter or Fall
- 12) Summer
- 13) “Ischemic” heart disease, Hypertension, Illnesses to the Spinal System, “Lung colds”, “Unknown”
- 14) Heart Attack, Inviolable Myocardium Circulation “something” (Angina???), Trauma
- 15) In sufficient laboratory, no running water
- 16) A new “Pen –like” device for examining eye-pressure and glaucoma (Diathega), an expensive multi-functional electric and heated massage table (Nyga Best).

Notes: Town used to be agricultural. The factory and plants had closed many years ago. Town looked the population was much larger once



Lipchanivka ambulatory



UV heating for physiotherapy after surgery (УВЧ) & Inhaler



X-ray



Gynecology room



Dental tools



Physiotherapy room

Appendix D

Ambulatory	English Name	Population - 01.01.02	Population - 01.01.08	Change in Population	Percentage	Estimated Distance from Izyum in km	No. of Villages	No. of FMAPs	# of Staff	No. of Doctors
Липчанівка	Lipchanivka	2051	1981	-70	-3.4%	11.31	4	3	11	1
Бугаївка	Bygaiyovka	1620	1517	-103	-6.4%	33.00	5	2	17	1
Вірнопілля	Vernipillya	1735	1526	-209	-12.1%	19.71	10	5	7	1
Довгеньке	Dovgenkye	1229	1052	-177	-14.4%	18.86	3	2	12	0
Заводи	Zavodi	1148	1028	-120	-10.5%	15.43	5	2	4	0
Кам'янка	Kamyanka	1389	1302	-87	-6.3%	8.91	4	2	13	1
Капитолівка	Kapitolivka	1878	1823	-55	-2.9%	4.29	2	0	8	1
Куньє	Kunye	2755	2543	-212	-7.7%	18.92	7	3	9	2
Левківка	Levkivka	1927	1623	-304	-15.8%	12.00	8	3	8	1
Олександрівка	Aleksandrivka	744	662	-82	-11.0%	29.26	5	0	4	1
Студенок	Stydenok	1829	1744	-85	-4.7%	17.14	3	1	10	0
Червоний Оскіл	Chervonni Oskil	3984	3703	-281	-7.1%	9.77	4	2	41	6

English Name	Closest Village (km)	Furthest Village (km)	Mood of interviewee	Daily Phone Calls	Daily Patient Visits	Monthly Patient Visits	Change in Visits	Reason for change	Cases Closed in a Month	Change in Cases Closed
Lipchanivka	4.29	7.71	Pleasant and cooperative	33	13	250	No change	No change	95	No change
Bygaiyovka	4.00	7.04	Reluctant, but warmed	20	15	485	Increase	More retired patients	37	Unknown
Vernipillya	2.74	15.09	Reluctant and ashamed	Not Counted	20	500	Decrease	Not asked	55	Unknown
Dovgenkye	5.14	7.37	Cooperative, but a little defensive	10	10	250	Decrease	No doctor	15	Decrease
Zavodi	2.57	5.66	Pleasant and cooperative	25	20	600	Increase	More retired population	Not counted	Unknown
Kamyanka	4.46	6.00	Highly energetic, enthusiastic	80	20	850	Increase	Good doctor	16	Increase
Kapitolivka	1.71	1.71	Highly energetic, enthusiastic	45	25	600	Increase	Deterioration of ecology. Patients lack money.	15	No change
Kynye	5.06	11.00	Pleasant and cooperative	130	17	550	Increase	New doctor	13	Increase (no doctor)
Levkivka	3.43	9.36	Skeptic, but cooperative. Doctor's Birthday was a distraction.	40	32	600	No change	No change	45	Increase
Aleksandrivka	1.54	5.28	Shocked, from my sudden arrival.	20	15	300	Increase	Not asked	50	Increase
Stydenok	2.40	2.57	Pleasant and cooperative	150	12	600	Decrease	No doctor	15	Decrease
Chervonni Oskil	4.80	10.46	Reserved, but then warmed-up	340	47	1500	Decrease	Patients lack money	75	No change

English Name	Treated Cases to Izyum	Consultation Cases to Izyum	Change in Cases Sent to Izyum	Mortalities for 2008	Change in Mortality
Lipchanivka	4	30	Decrease	36	Decrease
Bygaiyovka	5	10-15	Increase	Unknown	Unknown
Vernipillya	9	Unknown	Decrease	27	Decrease
Dovgenkye	7	For both	No change	27	No change
Zavodi	8	Unknown	Decrease	29	Unknown
Kamyanka	Unknown	62	Increase	36	Increase
Kapitolivka	3	Unknown	Decrease	31	Increase
Kynye	6	15	Increase	44	Decrease
Levkivka	18	35-40	Increase	39	No change
Aleksandrivka	10	For both	Increase	10	Increase
Stydenok	Unknown	Unknown	Unknown	34	No change
Chervonni Oskil	5	Unknown	No change	45-90	Unknown

English Name	Common Illnesses	Worse Illnesses	Problems	Needed resources
Lipchanivka	Ischemic heart disease, Hypertension, Illnesses to the Spinal System, Lung colds, "Unknown"	Heart Attack, Inadequate Myocardium Circulation Angina, Trauma	In sufficient laboratory, no running water	A new "Pen –like" device for examining eye-pressure and glaucoma (Diathega), an expensive multi-functional electric and heated massage table (Nyga Best).
Bygaiyovka	Bronchitis, Ischemic Heart Disease, Upper Respiratory Infection, Osteochondrosis, lumbar back pain, inflammation of stomach and esophagus, gastritis	Stroke, hypertension, intoxication	No heating gas, lack of gas for ambulance, outdated machines, laboratory needs upgrading, Beds don't recline properly	New beds, newer laboratory - Light density of fluid scanner
Vernipillya	Hypertension, Bronchitis, Ulcers, Polyarthritis, Gastritis, ИТН	Trauma, coma	Financing, outdated machines; lacking ambulance	medicines; Ambulance; cardiograph; first-aid bags; dentist; renovation
Dovgenkye	Ischemic Heart Disease, Hypertension	Cancer, narcotics abuse	No doctor; No ambulance; Financing; Insufficient medicine	Financing; doctor; ambulance transport
Zavodi	Hypertension, diabetes, Ischemic Heart disease	Cirrhosis of Liver, alcohol abuse, stroke	No dentist; polluted water supply	New Dentist supplies; medicine
Kamyanka	Ischemic c Heart Disease, Bronchitis, Hypertension, diabetes	Cancer, Tuberculoses	No diagnostics, lack of financing, no X-Ray, no water	light density of liquid scanner, financing, computers, glaucoma/eye pressure measurement device
Kapitolivka	Hypertension, Bronchitis, Angina, Upper Respiratory Infection	Heart attack, Stroke	Financing, outdated machines (oldest '61)	Dentist chair, Dental instruments, Sanitary equipment and supplies, replacements for every apparatus, More technical/specialization
Kynye	Disease of Cardiovascular system, Ischemic Heart Disease, System: artery, hypertension, gastritis, stomach ulcer	Cancer of stomach and womb	No gas; no water; old dentist equipment; old instruments, oldest is 30 years; town is 18 km in lengths	Financing.

English Name	Common Illnesses	Worse Illnesses	Problems	Needed resources
Levkivka	Cold illnesses, Angina, Lumbar back pain	Trauma	No financing, especially for ambulance. Doctor uses personal car.	Medicine needed. Replacement of instruments, oldest is 1965. Dentist chair is 2 years old, but looked older.
Aleksandrivka	Hypertension, Upper Respiratory Infection	Stroke	Lack of medicine, No Dentist or place to put a chair, normal car for ambulance, 3,000 UAH for financing???	They felt satisfied.
Stydenok	Ischemic Heart Disease, Bronchitis, Laryngitis, Tracheitis, Pharyngitis	Trauma, Cancer of stomach and womb	Materials, no gas, no water, no ambulance, no doctor, insufficient medicine	Doctor is needed severely, driver needed to extend services, xerox.
Chervonni Oskil	Diabetes, Cancer, Upper Respiratory Infection, Ischemic Heart Diseases	Ischemic Heart Diseases, Cancer	No computers, lack of medicines, Ambulance is 18 years old, Outdated machines.	New ambulance, computers, medicine, new apparatuses