

## THE INITIATION OF AN OUTREACH SERVICE FOR OROMAXILLOFACIAL PROSTHETICS IN PMSI INSTITUTE OF ONCOLOGY, CHISINAU, REPUBLIC OF MOLDOVA 2007 – 2015

“Modern management in diagnostic and treatment & rehabilitation  
In head and neck defects”

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### Rezumat. Inițierea Serviciului de Protezare Oromaxilofacială în IMSP Institutul Oncologic

Domeniul de aplicare al proiectului a fost de a începe un nou serviciu de Protezare Oromaxilofacială în Institutul Oncologic. O echipă de specialiști în reabilitare și reconstrucție în domeniul chirurgiei cancerului capului și gâtului, cooperează într-o echipă. Succesul proiectului a fost declarat de la început de formarea profesioniștilor calificați și a dus în doi ani la formarea într-o echipă de protezare, care, într-o perioadă scurtă de timp, au înțeles conceptul de tratament multidisciplinar modern pentru reabilitare și necesitatea de îngrijire a pacienților cu fețe mutilate. Îmbunătățirea continuă a calității tratamentului este una din următoarele sarcini pentru a ajuta acești pacienți într-un mod eficient.

**Cuvinte-cheie:** serviciului de protezare oromaxilofacială, reabilitare

### Summary. The initiation of an outreach Service for Oromaxillofacial Prosthetics in PMSI Institute of Oncology

The scope of the project was starting a new Service of Oromaxillofacial Prosthetics for care in the PMSI Institute of Oncology. A health care team for rehabilitation and reconstruction of Head and Neck cancer consists of specialists cooperating in a team. The success of the project was stated at the beginning by the following metrics and resulted in two years time into a prosthetic team which is formed by qualified professionals. The medical and dental professionals of the PMSI Institute of Oncology have performed, in a short period of time, a magnificent task to understand and learn the modern multidisciplinary treatment concept for rehabilitation and the need of care for patients with mutilated faces. Continuous improvement of cure and care is one of the following tasks to help these patients in an efficient way.

**Key words:** service of oro-maxillofacial prosthetics, rehabilitation

### Резюме. Иницирование челюстнолицевого протезирования в Институте онкологии

В рамках проекта начала новую услугу челюстнолицевого протезирования в Институте онкологии, группа из специалистов в сфере реабилитации и реконструкции дефектов головы и шеи, сотрудничающих в команде. Успех проекта заявил себя в начале, через два года формируется 3 обученных квалифицированных специалистов, из местных ресурсов. Медицинские профессионалы Института онкологии провели, в течение короткого периода времени, великолепную задачу: понять и узнать современную многопрофильную концепцию лечения для реабилитации и необходимость ухода за пациентами с изуродованными лицами.

**Ключевые слова:** челюстнолицевого протезирования, реабилитация

### Introduction

Dr. Rodica Mindruta, PhD and Prof. George Tibirna from the PMSI Institute of Oncology had expressed the desire to establish an Oromaxillofacial Prosthetics Service (OMF Prosthetic Service) like the one in University Medical Centre Groningen (UMCG), the Netherlands.

After 39 years (1968 – 2007) of Maxillofacial Prosthetic (MFP) patient treatment, education and research in the State University Groningen and the University Medical Centre Groningen, Dr. Rob Van Oort retired from the Centre for Special Dentistry and Maxillofacial Prosthetics. Dr. Van Oort reported in 2007 for MFP care in the Institutes in the world and

starting with the Institute of Oncology in Chisinau MFP with project for LAMIC (Low and Middle Income countries (UN definition)) and later that year proposed that plan to the directory of the Institute of Oncology.

At three occasions a fundraising was formed for establishing an Oromaxillofacial Prosthetics Service in Chisinau. The first fundraising during the Dr. Robert van Oort Farewell Symposium for the international and national scientific community in the UMCG in February 2007. The second fundraising during his farewell reception for patients and local colleagues on August 29, 2007. The third fundraising was elaborated in 2008. During the farewell reception

(27-08-07) of Dr. van Oort one patient, Jörgen van der Pol, offered to organize a kayak sponsor tour in order to pay attention to the Oncological Oromaxillofacial Prosthetics Service in the Republic of Moldova.

The Foundation “Smiles for Moldova” was designated to initiate a project for establishing an Oromaxillofacial Prosthetics Service.

### Strategy

The scope of the project was starting a new Service of Oromaxillofacial Prosthetics for care in the PMSI Institute of Oncology. A health care team for rehabilitation and reconstruction of Head and Neck cancer consists of specialists cooperating in a team. Many disciplines are working together in order to cure and care for the diseased patient. A team consists of the surgeon, radiologist, radiotherapist, chemotherapist, reconstructive surgeon, stomatologist-prothetist, maxillofacial technician and palliative care doctor.

After agreement of the MFP project the second step was to start a fundraising. The project resulted in a report with a complete set of desires and possibilities of the Oncologic Institute. The required plans were included to the report “LAMIC for MFP”.

The initiative was discussed with organisations with experience with development projects in the Netherlands and Europe. In October 2007 PUM, Netherlands senior experts - Den Hague requested to advice for the initiation of a Dental Centre for Head and Neck Oncology in Chisinau. The PUM mission was executed in combination with an invitation for a contribution to an international Head and Neck Oncology Conference in Chisinau.

On the basis of the general plan for institutes in LAMIC Dr. Rodica Mindruta and Dr. Vadim Pogonet described a project plan in two languages. (English and Romanian, version March 2008). The board of

the Foundation “Smiles for Moldova” prepared a project budget.

In December 2007 the preparations for the kayak fundraising tour started. In February 2008 the Foundation “Smiles for Moldova” was executed to canalise the possible financial spin off of the project (Chamber of commerce, Northern Netherlands #1128020). The solo-kayak tour with a phenomenal length of 4100 km started April 5<sup>th</sup> 2008 from Paterswolde, near Groningen, the Netherlands, across the rivers Weser, Rhine, Elbe and Danube, Black Sea/ Ukraine to Chisinau (see also [www.milesformoldova.eu](http://www.milesformoldova.eu))

The sponsors were “National Academic”, “Kayak material suppliers”, and many sponsors / donors of various formats. The sponsor tour and the goals were to establish a Maxillofacial Prosthetic Centre in Moldova received wide media attention in The Netherlands, Germany, and in the Republic of Moldova. Many contributors and sponsors see in addendum were convinced to support this project.

The “Urgenta” working group in Utrecht represented by Ir Hille admitted to be a manager in the cooperation between Foundation “Smiles for Moldova”, the PMSI Institute of Oncology and “ACASA”, (NGO)- an administrative facilitating organisation with experience in more projects in the field of development aid. The manager Ir. George Hille proposed in October 2008 to the director of the Institute of Oncology to extend the initiation of a maxillofacial prosthetic centre for MFP with a renovation of the Palliative Care Department (basement) and the Department for Head and Neck Surgery of Oncology and reconstructive surgery and microsurgery (third floor).

“ACASA” worked out a cost budget plan for the

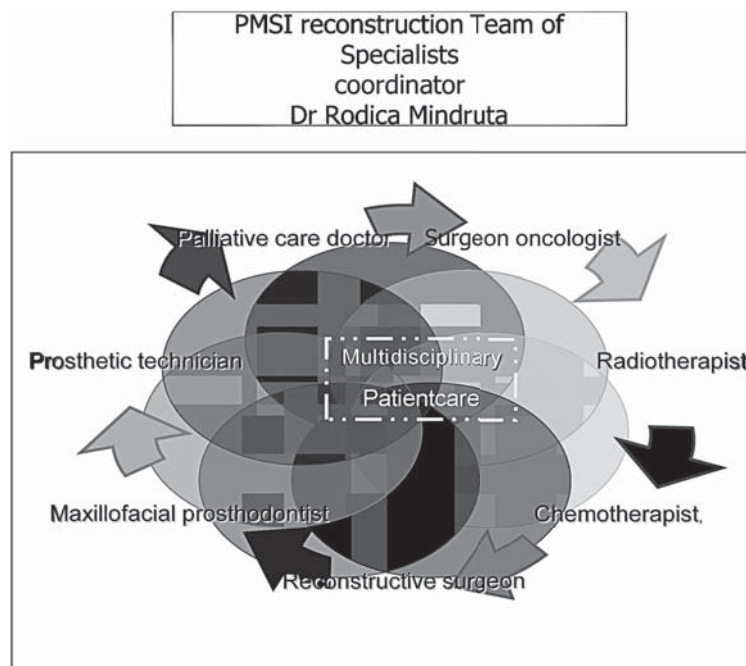


Fig 1. PMSI Institute of Oncology, Reconstruction team. Projectplan

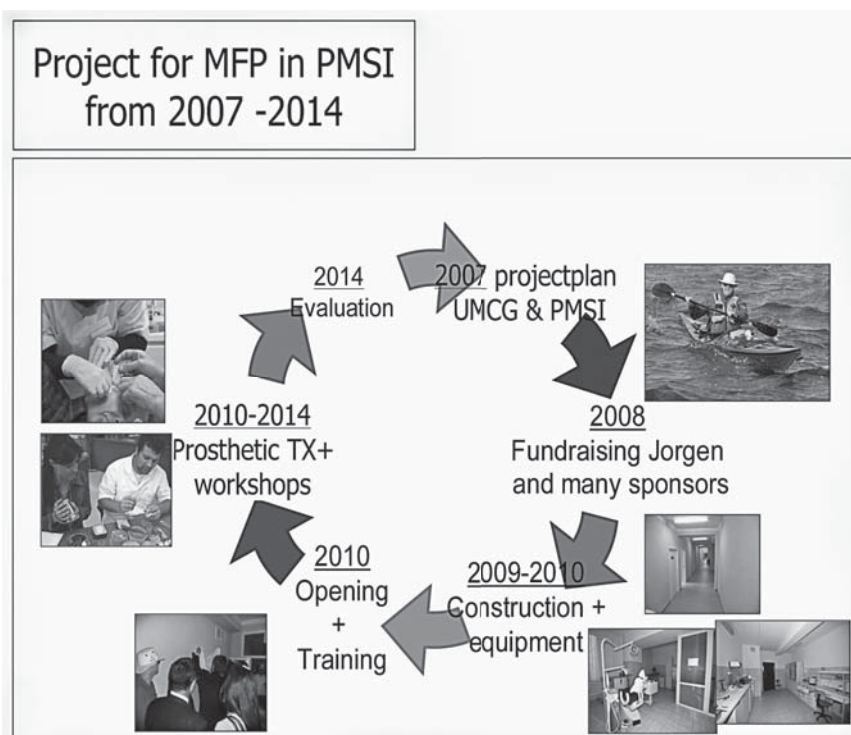


Fig. 2. The project cycle from 2007 to 2012 is represented in various steps over the years

construction and a plan for the supervision of the reconstruction, the administration and accountancy. On July the 24<sup>th</sup> of 2009 a 4-party contract was executed between Institute of Oncology, The Foundation Smiles for Moldova, the working group “Urgenta” and “ACASA”.

On the basis of the “ACASA” cost budget plan sponsor requests were presented to the NCDO and the Innovation Fund of Health Care Insurances Netherlands. Based on the final cost budget a supplementary sponsor request was applied to “Janivo” and the “Anton Jurgens Foundation” (NL) and the Embassy of the Netherlands in Kiev. A list of priorities was strictly ordered for the renovation of the 3<sup>rd</sup> floor in order to keep the sponsor budget in restriction with the expenditures.

**Opening of the MFP clinic and renovated departments**

In July 2010 the MFP clinic and the renovated departments were finished and installed with the equipment. The opening ceremony was honoured by The Prime Minister in 2010.

A PUM Business link program and training program was worked out (PUM, Netherlands senior experts, The Hague). Dr. Valentina Luca, stomatologist and Ivan Vilcu, technician were trained in the University Medical Centre Groningen in the Netherlands especially in the University Medical Centre Groningen and the MFP prosthetic Laboratory Gerrit van Dijk, Groningen, the Netherlands.

As part of the project plan, support was the organization of four workshops in PMSI Institute of Oncology by doctors of the Foundation “Smiles for

Moldova”: 2 – 9 October 2010; 27 March - 2 April 2011; 10 - 16 October 2011; 10 – 15 September 2012



Fig. 3. Training “How to make a facial impression?”



Fig. 4. Training “How to construct an ocular prosthesis”



Fig. 5. Training Maxillofacial prosthetics in the Laboratory of Gerrit van Dijk, Groningen/ UMCG Groningen



Fig. 6. The specialists discuss the rehabilitation plan, before after the cure program

#### Patient treatments from October 2010 till December 2014

The rehabilitation of a head and neck cancer patient starts with a multidisciplinary consultation. A rehabilitation plan is worked out.

#### A selection of different treatments from 2010 till 2013 is represented:

The following patients are reconstructed in the

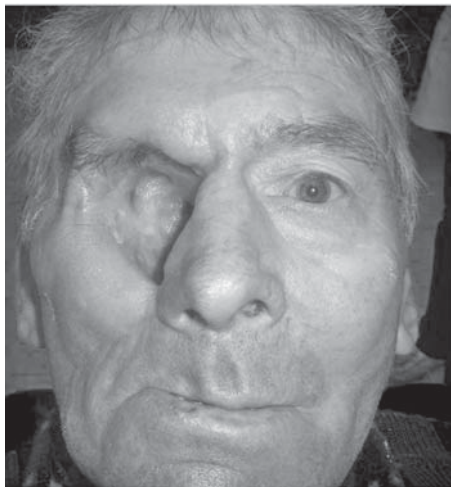


Fig. 7. a, b. Mr A.V. with Maxillofacial prosthetics orbital prosthesis after surgery and radiotherapy of squamous cell carcinoma. The acrylic eye is embedded in pigmented silicone and attached to the skin with water-based adhesive. The glasses are separated from the orbital prosthesis



Fig. 8. a, b. Mrs. G. maxillofacial prosthetic: nasal prosthesis after treatment of basocell carcinoma of the nose by surgery. The form of the nose was reconstructed from old pictures. An impression before resection retains the form more easy. The pigmented silicone prosthesis is light weighted and glued to the skin with water based adhesive

maxillofacial prosthetic team of the PMSI Institute of Oncology. The results are amazing successful for a reconstructive surgeon a prosthetist/stomatologist

and a technician who learned to work to perform teamwork in two years time.

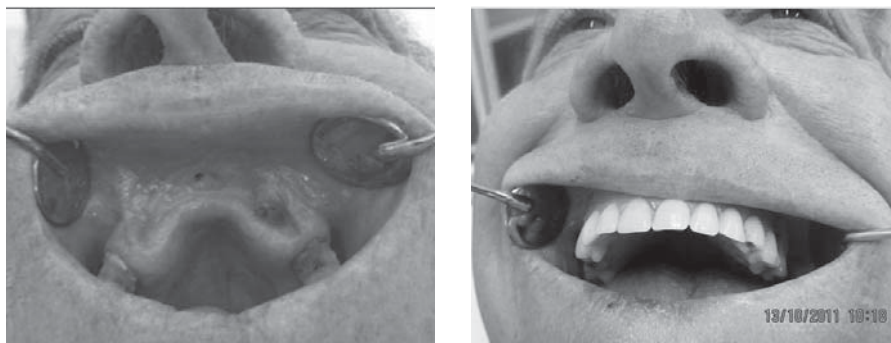


Fig. 9. a, b. Mr. M.N. Maxillofacial prosthetics: surgery prosthesis after oral cancer treatment by surgery. After healing of the mucosa and the defect of the anterior jawbone (4-6 weeks) prosthesis is constructed of acrylic with porcelain or acrylic teeth in occlusion and articulation with the lower teeth



Fig. 10. a, b. Mr. G. Combined Maxillofacial prosthetic oral and orbital prosthesis after cancer mouth, maxilla and orbit and treatment by surgery and radiotherapy. The intraoral defect prosthesis is constructed first in order to repair the functional oral deficiencies (speech and swallowing). The facial deficiencies are reconstructed as soon as the mucosa and bone is healed by an acrylic individual eye and pigmented silicone with retention by water-based adhesives



Fig. 11. a, b. Mr L. Maxillofacial prosthetic: ear prosthesis after treatment of squamous cell cancer right ear, treated by ear surgical resection. The form is inversed copied from the contra-lateral side and the wax-form is converted in to pigmented-silicone prosthesis



Fig. 12. a, b. Mr. C.I. Maxillofacial prosthetic: ocular prosthesis after enucleation surgery of left eye bulb. After healing of the socket (three to six weeks) an ocular prosthesis is individually made by impression, colouring the iris and sclera and transparent acrylic. The volume must be corrected if necessary after one year



Fig. 13. a, b. Mr. G. Maxillofacial ocular prosthesis after trauma. As soon as the first healing after evisceration has taken place an impression of the socket has performed and an individual ocular prosthesis is constructed by the stomatologist/prosthetist and the technician

<b>Total treated/ consulted patients</b>	82	138	154	192
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Table 1

**The number of patients treated from Oktober 2010 till December 2014 is presented in this table**

<i>Total numbers treated patients</i>				
	<i>2010-2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
ocular	20	54	50	68
auricular	1	-	2	1
maxillary	8	12	6	1
nasal	2	1	-	1
facial	2	7	2	1
combined	2	-	3	-
orbital	5	4	5	3
Consultations advice	7	20	17	35
Periodical revisions	35	40	68	74
Waiting list				8

#### **Discussion:**

The success of the project was stated at the beginning by the following metrics and resulted in two years time into a prosthetic team which is formed by qualified professionals, with 3 trained prosthetic team members by local resources.

The stated numbers of treated patients at the beginning of the project (50 treated patients over 2 years and 50 recall patients) is majorly exceeded the expectations of the beginning.

The reconstructed rooms, clinics and the equipment are still in good condition with a maintenance support of PMSI Institute of Oncology. Still to be done is an improvement of the furniture of the waiting room for patients.

Regular supply of prosthetic materials must still be regulated. In Europe is one supplier of maxillofacial materials (Techno vent Ltd, UK). The market prices

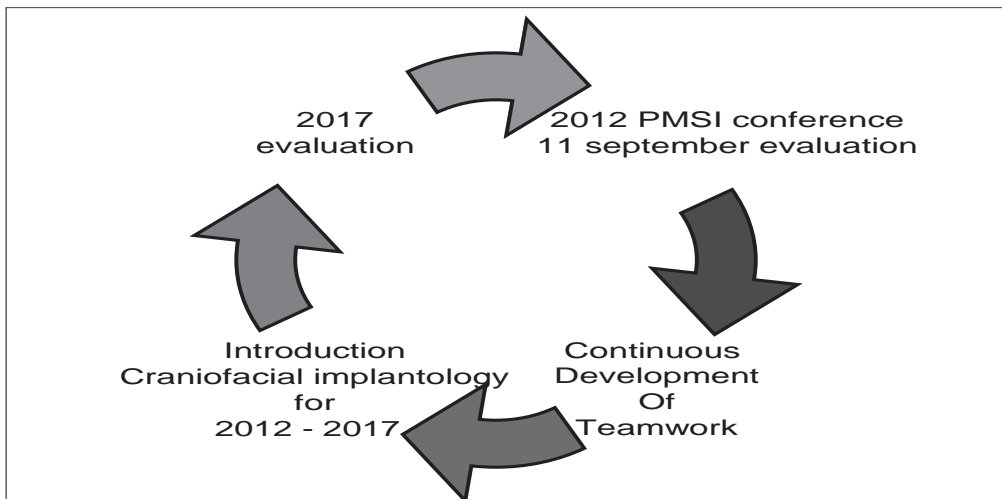


Fig. 14. Continuous improvement of OMF Prosthetics for 2014-2017

plus shipping of MFP materials are moderate to high level, which means a system of economic budgeting and profit prices for private and foreign patients.

The important success factor of the initiation of a maxillofacial prosthetics centre by a contract with National Insurance Company is achieved in 2011 for a couple of years.

The future for PMSI Institute of Oncology, Oromaxillofacial Prosthetics Service need to be worked out and regularly evaluated into a project plan for 2014- 2017. Besides the continuous development of teamwork the central development need to be the introduction of craniofacial implantology for the head and neck cancer patient group. This need

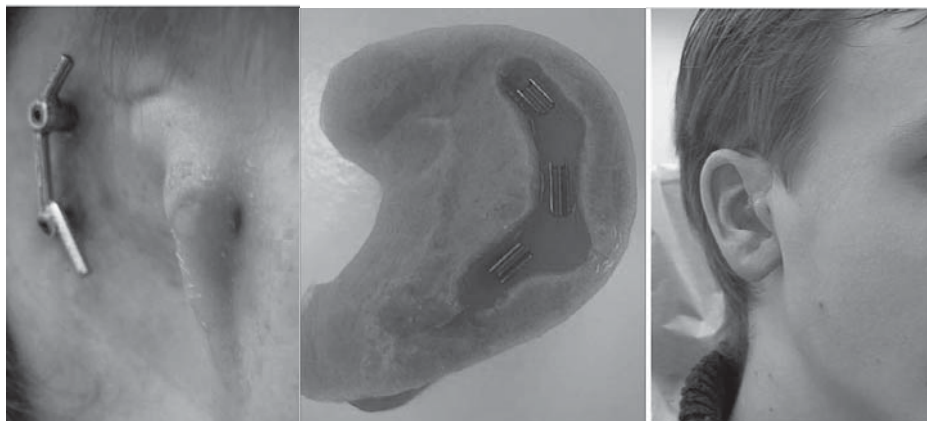


Fig. 14. a, b. Craniofacial prosthesis based on implants for reconstruction of a congenital right ear in a hemifacial microsomia. (UMCG. RPVO)

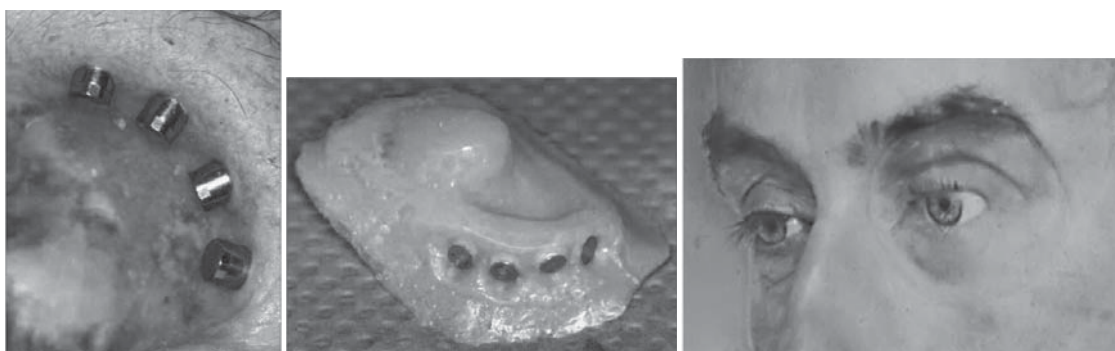


Fig. 15. a, b. Exenteratio orbital for a juvenile malignant tumor. Craniofacial prosthesis based on orbital implants with magnets (Technovent). Magnets replace the retention by skin adhesives. The prosthesis is constructed with an individual eye and pigmented silicone. (UMCG, RPVO)

to be concomitantly with up to date plastic surgical reconstruction techniques of the maxilla and mandible.

The implantology in maxillofacial rehabilitation for Oromaxillofacial Prosthetics Service in the PMSI Institute of Oncology can result into prosthesis with mechanical retention based on implants. The treatment is more durable and also more expensive than facial prosthesis without implants to be based upon.

Two examples of this type of treatment from the Department of Oral surgery and maxillofacial prosthetics from the University Medical Centre in Groningen, the Netherlands.

#### Accreditation

In October 2014 the Oromaxillofacial Prosthetics Service in the PMSI Institute of Oncology had a process of evaluation and accreditation and has received permission for medical activities for the next 5 years in our Institution.

The Oromaxillofacial Prosthetics Service was mentioned as a very good one. Every document and legal notice was correct filled in. More than this, every person of our service was excellent prepared for accreditation.

#### Bibliography

1. The initiation of the Oromaxillofacial Prosthetics Service in the PMSI Institute of Oncology is completed in 4 years time.

2. The 4-parties contract between PMSI Institute of Oncology, "ACASA", "URGENTA" and "Smiles for Moldova" has proved its value as leading plan in overcoming the differences of Healthcare, opinion and culture.

3. The bilateral cooperation between the two Moldova partners PMSI Institute of Oncology and "ACASA" was essential for the success of the reconstruction on location.

4. Ir Hille, in the function of manager and coordinator, has accomplished a valuable role as mediator in bridging the gap of cultural and language differences between Moldova and the Netherlands.

5. The project has received financial support from many founders. The sponsors were NCDO, followed by "Janivo", the Netherlands, The Innovation Fund of Dutch Insurers (equipment of dental office), the Netherlands, Anton Jurgens Fund and the Embassy of the Netherlands

in Kiev and Foundation "Smiles for Moldova".

6. A weekly consultation by internet has supported the daily patient care in the beginning.

7. The medical and dental professionals of the PMSI Institute of Oncology have performed, in a short period of time, a magnificent task to understand and learn the modern multidisciplinary treatment concept for rehabilitation and the need of care for patients with mutilated faces.

8. Continuous improvement of cure and care is one of the following tasks to help these patients in an efficient way.

9. Constant flow of needed materials needs to be established.

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- National Academics, the Netherlands

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