



**I G E M H**

# **ANNUAL REPORT 2002**

<b>IGEMH</b>	<b>INRO</b>
<b>INTERNATIONAL</b>	<b>INTERNATIONAL</b>
<b>GESELLSCHAFT ZUR</b>	<b>NEUROTRAUMA</b>
<b>ERFORSCHUNG VON</b>	<b>RESEARCH</b>
<b>HIRNTRAUMATA</b>	<b>ORGANIZATION</b>

# CONTENTS

<b>1. EXECUTIVE SUMMARY</b>	<b>2</b>
1.1. Organizational Background	2
1.2. Mission	2
1.3. Goals	3
1.4. Continuous Quality Improvement and the Clinical Application of Evidence-Based Medical Guidelines	3
1.5. Members of IGEH	3
1.6. Board of Directors	4
1.7. Medical Advisory Board	4
<b>2. PROJECTS</b>	<b>5</b>
2.1. TBI Database Development	5
2.2. The Austrian Traumatic Brain Injury Project (In memory of Alfred von Auersperg) 2001 - 2003	6
2.3. Reducing mortality and long-term disability of TBI victims through research into treatment procedures used in Bosnia-Herzegovina, Macedonia and Croatia, European Union, 5th FP-Copernicus 2002- 2004	6
2.4. Analysis of data from Nove Zamky	7
2.5. Analysis of data from Osijek	7
2.6. Slovakia Initiative	7
2.7. Improving Patient Outcome from Head Injury in Central and Eastern Europe	8
<b>3. FELLOWSHIPS</b>	<b>9</b>
3.1. Dr. Robert Saftic, Osijek, Croatia	9
3.2. British Council	9
<b>4. PAPERS AND PRESENTATIONS</b>	<b>10</b>
4.1. Zagreb, Croatia	10
4.2. Szeged, Hungary	10
4.3. Ankara, Turkey	10
4.4. Ancona, Italy	10
4.5. Presov, Slovakia	11
<b>5. PROJECT PROPOSALS</b>	<b>12</b>
5.1. 5th EU Framework Program on IT Technology	12
5.2. The Netherlands	12
5.3. Georgia	13
5.4. Munich Re-insurance company	13
5.5. COST	13
5.6. PHARE-Hungary	13
5.7. Italy – Ancona	14
<b>6. IT DEVELOPMENT</b>	<b>15</b>
6.1. Handheld and wireless ITCP	15
<b>7. PUBLICATIONS and INFORMATION MATERIALS</b>	<b>16</b>
7.1. TBI-Guidelines in German	16
7.2. Papers	16
7.3. Web-site	16
<b>8. BUDGET</b>	<b>17</b>



## 1. EXECUTIVE SUMMARY

**Motto:** *"There are, in effect, two things, to know and to believe one knows; to know is science; to believe one knows is ignorance." Hippocrates*

### 1.1. Organizational Background

The Internationale Gesellschaft zur Erforschung von Hirntraumata (IGEH) was founded in 1999 in Vienna and organized under Austrian law regulating not-for-profit, non-governmental organizations (NGO). Its purpose is to work in Europe and other areas outside the U.S. to improve the care, treatment and outcome of severely brain-injured patients. It now has official tax deduction status in Austria.

The long term expectations for IGEH's work is that by introducing scientific evidence-based medical care (as opposed to individual, opinion based medical care) to the challenging and costly area of traumatic brain injury, over time, this will encourage the use of such scientific, evidence-based processes in other areas of medicine. In its first three years IGEH has been very successful with its program now being implemented in eleven European countries reaching 41 trauma hospitals.

To carry out its work in the first two years, IGEH was financially supported by founding members and George Soros's Open Society Institute headquartered in New York City. Most recently IGEH's funding sources have become diversified and include both private sources within Europe and the European Union.

### 1.2. Mission

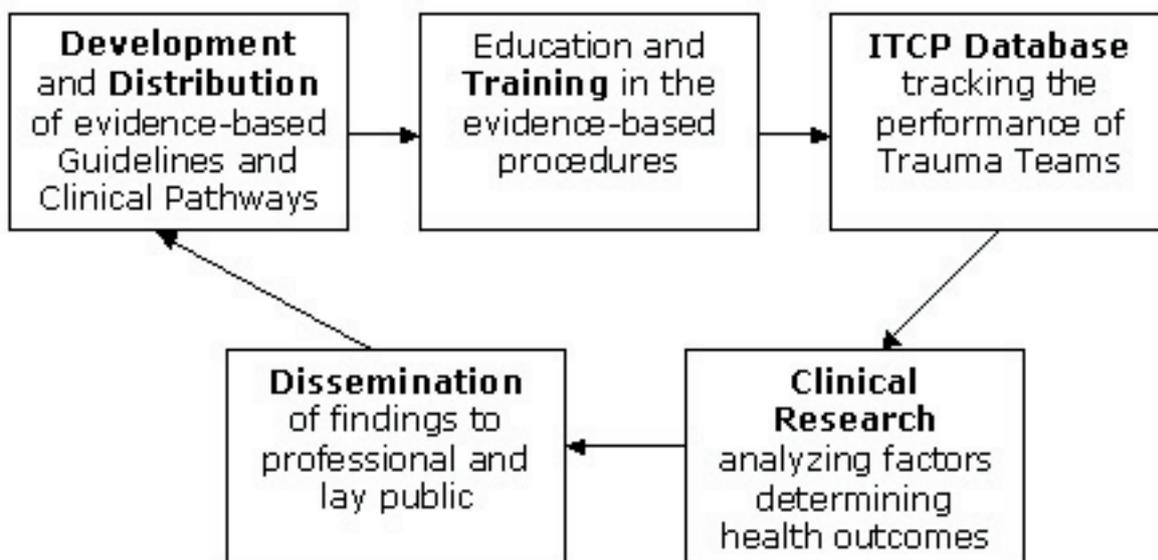
Improve the recovery of patients who suffer a brain or spinal cord injury through helping hospitals implement evidence-based medical care, assisting in the **reengineering of their trauma systems** to better treat neurotrauma patients and collaborating on clinical research to continuously **improve the scientific foundations of evidence-based guidelines and protocols.**



### 1.3. Goals

- To improve the clinical care for brain injured patients in the ambulance and hospital based upon the latest scientific evidence.
- To provide Quality Assurance (QA) information to hospitals caring for brain injured patients through the use of the interactive patient database developed by IGEH.
- To support and/or encourage the use of the IGEH patient database by medical or epidemiological researchers for clinical research on TBI patients.
- To encourage and support the publication in international, peer reviewed journals the research findings discovered through the use of the IGEH patient database.

### 1.4. Continuous Quality Improvement and the Clinical Application of Evidence-Based Medical Guidelines



### 1.5. Members of IGEH

Dr. Kordula Fleiss  
 Dr. Wulf-Gordian Hauser  
 Mr. Maximilian Hardegg  
 Mrs. Annie Laurie Auersperg Isham  
 Dr. Lindi Kalnoki  
 Prof. Walter Mauritz  
 Mr. Peter C. Quinn  
 Mrs. Marie-Therese Rutherford

Mrs. Isabelle Harnoncourt  
 Mrs. Alexandra Hardegg  
 Mr. Geoffrey Hoguet  
 Mr. Ralph H. Isham  
 Mr. Franky Lippitt  
 Mr. Orsini-Rosenberg  
 Dr. Martin Rusnak  
 Mag. Andreas Treichl



## 1.6. Board of Directors

Mr. Johannes Orsini-Rosenberg, president;  
Mrs. Marie-Therese Rutherford, Vicepresident  
Mrs. Alexandra Hardegg, Secretary  
Mrs. Isabelle Harnoncourt  
Dr. Wulf-Gordian Hauser  
Mr. Geoffrey Hoguet, Treasurer  
Mrs. Annie Laurie Auersperg Isham, Honorary Chairperson  
Dr. Lindi Kalnoky  
Mr. Ralph H. Isham  
Mr. Peter C. Quinn

Auditors:

Mr. Maximilian Hardegg  
Mr. Franky Lippitt

## 1.7. Medical Advisory Board

Prof. Toomas Asser, M.D., Ph.D., Prof. of Neurosurgery, Dean of the Univ. of Tartu, Estonia  
Prof. Finn Kamper-Jorgensen, M.D., Ph.D., Director, Danish Institute of Public Health, Copenhagen, Denmark  
Prof. Ramiro Diez Lobato, Prof. of Neurosurgery, Madrid, Spain  
Prof. Walter Mauritz, M.D., Prof. of Anaesthesiology and Intensive Medicine, Chairman of the IGEH Med. Advisory Board, LB Unfallkrankenhaus, Vienna, Austria  
Prof. Franco Servadei, Prof. of Neurosurgery, representative of European Brain Injury Consortium to IGEH, Cesena, Italy  
Prof. Massimo Sceratti, M.D., Associate Professor of Neurotraumatology, Institute of Neurosurgery, Catholic University, Rome, Italy  
Prof. Beverly C Walters, M.D., M.Sc., FRCSC, FACS, Chief of Neurosurgery Associate Professor of Clinical Neurosciences, Brown University School of Medicine, Providence, Rhode Island, USA  
Prof. Petr Wendsche, M.D., CSc, spinal and trauma surgeon, Trauma Hospital, Brno, Czech Republic  
Prof. Daniel West, Jr., Professor of Health Management, University of Scranton, USA  
Prof. David Yates, Prof. of Emergency Medicine, Department of Emergency Medicine, Salford, UK



## 2. PROJECTS

### 2.1. TBI Database Development

Based on experiences gained through the previous years (1997-2001), IGEH decided to develop a new TBI patient database. The purpose of this new database is to track and evaluate the treatment process and outcome of patients with severe TBI. It is Web based but copies of collected data are kept at each local trauma hospital. It offers significant educational potential as well. This new database is being implemented while still being tested (there is already version 1.2.3 being distributed). There are already 7 implementations of the database within Austria and there are more installations in European countries right now (Tab.1).

Project	City	Country
<b>The Austrian Traumatic Brain Injury Project</b>	1	Vienna - AKH
	2	Vienna - LB Unfallkrankenhaus
	3	Linz
	4	Salzburg
	5	Innsbruck
	6	Klagenfurt
	7	Graz
<b>EU 5<sup>th</sup> FP Balkan</b>	8	Zagreb
	9	Osijek
	10	Rieka
	11	Skoplje
	12	Sarajevo
	13	Nove Zamky
	14	Brno
<b>Ancona project</b>	15	Ancona
<b>Slovakia Initiative</b>	16	Presov
	17	Banska Bystrica

Table 1 ITCP Installations in December 2002



## **2.2. The Austrian Traumatic Brain Injury Project (In memory of Alfred von Auersperg) 2001 - 2003**

There was a consensus among Austrian trauma surgeons, neurosurgeons and intensive care physicians, that it is desirable and timely to develop national guidelines and to build a central database for all trauma patients.

Recognizing this consensus, IGEH has begun developing the technical means to address this opportunity. It is doing this through a three-year project, funded by the Bank of Austria, now in seven regional trauma hospitals throughout Austria. In the first year the hospitals were introduced to the concept of evidence-based care through the TBI Guidelines, the Guidelines were translated to German. Data from patients' records were collected using the TBI\_trac<sup>®</sup>. Activities of the second year (2002) were concentrated on collecting data on prospective patients using ITCP database, as well as tracking compliance with their TBI patients. In the third year of this project the regional trauma hospitals will introduce to surrounding hospitals the evidence-based guidelines and the tracking system to monitor compliance of care.

The data collected were analyzed and provided basic epidemiological and quality of care information.

## **2.3. Reducing mortality and long-term disability of TBI victims through research into treatment procedures used in Bosnia-Herzegovina, Macedonia and Croatia, European Union, 5th FP-Copernicus 2002-2004**

The project started in December 2002 upon obtaining the advanced payment from EU. The first meeting of the entire group is planned for January 2003.

The primary goal of the project is the research into factors in the Balkan region, which determine the quality of care for victims of severe Traumatic Brain Injuries (TBI) (Glasgow Coma Scale less than 9), accentuating the quality of life after recovery. The project will build up the knowledge base in the strategically important area of public



health systems. In conformity with the call text, the research will focus on a specific health problem resulting from the war in the Balkan region: higher incidences of Traumatic Brain Injury victims. More specifically, it aims at the increased understanding of the post-conflict and post-trauma health problems, and will lead to the development of more effective treatment.

#### **2.4. Analysis of data from Nove Zamky**

Data from years 1997 to 2000 collected from patients with severe TBI were analyzed (see Annex II). The TBI\_trac<sup>®</sup> data were found as insufficient for complex elucidation on epidemiology and causation. The univariant statistical analysis proved powerful effect of implementation of the TBI Guidelines on reducing the risk of death and bad outcome (vegetative), with examples of ICP > 25mmHg for more than 3 hours increasing chances of a death 2.2 times, the systolic blood pressure kept above 90 mmHg increases chances of good outcome after 180 days post injury almost 30 times. Close compliance with principal recommendations of TBI Guidelines increases chances to survive more than 7 times.

#### **2.5. Analysis of data from Osijek**

Similar analysis was provided on data from Osijek hospital. The analysis revealed similar conclusions as the one done on Austrian TBI\_trac<sup>®</sup> data.

#### **2.6. Slovakia Initiative**

Based on a request from the hospital in Presov (Eastern Slovakia) a seminar was held on using evidence based methods in management of trauma patients with a focus on Severe Traumatic Brain Injuries. The ITCP database was installed at the Department of Anesthesiology and Intensive Care in Presov Hospital as well as at the Department of Traumatology in Banska Bystrica. More hospitals were interested in joining the initiative later on.



## 2.7. Improving Patient Outcome from Head Injury in Central and Eastern Europe

Although the project finished in 2001, there were some clearinghouse activities in 2002. Among them there were discussions with centers on continuing some of the activities using local support. The database TBI\_trac was used as the tool to ascertain the quality of care provided for patients with severe traumatic brain injury. It provides physicians the ability to evaluate their own performance and indicates points of intervention to improve it. This tool, which monitors clinical performance and links it to compliance with the TBI Guidelines for each patient, has already significantly improved the quality of care and outcome of TBI patients in each participating hospital. The program systematically builded expertise, self-sufficiency, and teaching capacity in Central and Eastern European countries at the hospital level. In final two years of the program 29 hospitals participated actively (Tab.2).

COUNTRY		Hospital
<b>Hungary</b>	1	Budapest – National Traumatology Research Inst.
	2	Budapest – National Neurosurgery Research Inst.
	3	Gyor Hosp.
	4	Miskolc
	5	Szeged Univ. Hospital
	6	Pecs Univ. Hospital
<b>Croatia</b>	7	Hospital Sisters of Mercy, Zagreb
	8	Hospital Osijek
	9	Hospital Rijeka
<b>Slovenija</b>	10	Hospital Maribor
<b>Czech Republic</b>	11	National Inst. Of Traumatology, Brno
	12	Hosp. Zlin
	13	Hospital Pardubice
	14	Hospital Ceske Budejovice
	15	Hospital Ostrava
	16	Univ. Hospital Plzen
	17	Hospital Usti n. Labem
<b>Slovak Republic</b>	18	Hospital Nove Zamky
	19	University Hospital Bratislava
	20	University Hospital Kosice
<b>Estonia</b>	21	Univ. hospital Tartu
	22	Hospital in Tallin
<b>Latvia</b>	23	University hospital in Riga
	24	Rezekne Hosp.
	25	Daugavpils Hosp.
	26	Liepaja Hosp.
<b>Lithuania</b>	27	Traumatology Hospital Vilnius
	28	Klaipeda Hosp.
	29	Panevesys Hosp.

Table 2 Hospitals in Central and Eastern European countries project



## 3. FELLOWSHIPS

### 3.1. Dr. Robert Saftic, Osijek, Croatia

Mr. Robert Saftic, MD, neurosurgeon from Osijek, stayed with the IGEH from September 1<sup>st</sup> until the end of November. The fellowship was donated from the grant of Wissenschaftlich- Technische Zusammenarbeit Österreich –Kroatien 2002 provided by Büro für Wissenschaftlich-Technische Zusammenarbeit des ÖAD. He concentrated on Austrian experiences with TBI treatment and has prepared an analysis of data collected in Osijek. Upon returning home he will install ITCP database and continue collecting TBI patients.

### 3.2. British Council

A grant was awarded to IGEH for two visits to GB to prepare the COST project proposal, as well as one visit of prof. Yates to visit IGEH.



## 4. PAPERS AND PRESENTATIONS

### 4.1. Zagreb, Croatia

A meeting organized by the the Austrian Federal Ministry for Education, Science and Culture was intended to help stimulate scientific cooperation between Austrian and Croatian institutions. IGEH was invited to talk about the EU project with Balkan countries. The meeting opened a way to receive the fellowship for Dr. Saftic as well as led to a collaboration with Universitat Wien, Institut fur Softwarewissenschaft.

### 4.2. Szeged, Hungary

A paper *Rusnak, M., Mauritz, W., Janciak, I.: TBI Epidemiology and Characteristics of Care in some Countries of Europe* was presented at the conference of the European Society for Surgical Research, XXXVII ESSR-Congress.

### 4.3. Ankara, Turkey

A paper *Mauritz, W., Rusnak, M., and the Austria Research Project members: Implementing Scientific Evidence Based Guidelines: Case Study of Severe Traumatic Brain Injuries* was presented at conference on Global Engagement in Creating Financially Viable Healthcare Systems. The conference led to establishing contacts with the University of Baskent and potential collaboration.

### 4.4. Ancona, Italy

Mr. Peter Quinn and Dr. Martin Rusnak presented on NTF and IGEH at a workshop organized by the University of Ancona. The ITCP database was installed there and collection of data initiated.



## 4.5. Presov, Slovakia

Prof. Dr.Med. Walter Mauritz presented two presentations (one on the management of polytraumatic patient and the second one on severe TBI) for a forum of physicians from Eastern Slovakia (6 hospitals). Dr. Rusnak joined the discussion with information on ITCP database and fellowships opportunities. The ITCP database was installed at the ICU and a resident was trained in using it.



## 5. PROJECT PROPOSALS

### 5.1. 5<sup>th</sup> EU Framework Program on IT Technology

Project proposal for funding from the European Commission was submitted under the heading Integrated knowledge and information management to provide a Community Integrated Traumatic Coma Programme (CITCoP). General objectives were to develop and research of software applications for advanced knowledge discovery and management technologies for medicine, specifically in the area of Traumatic Brain Injury: next generation handheld devices will be used and software developed for knowledge workers (medical doctors, nurses) in order to enable them to provide data, and retrieve data and knowledge from heterogeneous geographically distributed sources (medical databases, electronic medical journals, state-of-the art procedures defined in WHO endorsed Scientific Evidence Based Guidelines manual) in the implementation of a Community Integrated Traumatic Coma Programme (CITCoP). To achieve these aims, a novel data analysis and computing infrastructure, which leverages state-of -the-art research results will be developed. The project which aimed for a collaboration of IGEH with Vienna University and 5 health care facilities in EU countries failed to receive enough scores to succeed. The project development was funded based on a grant from the Austrian Ministry of Science.

### 5.2. The Netherlands

The largest health insurance company in the Netherlands Agis Zorgverzekeringen has contacted IGEH to explore possibilities of opening a pilot program in Dutch hospitals. The project (developed with support from Mr. Quinn) has been submitted to Mr. Maarten Boon, director of innovation and according to his information the decision will be taken by the end of this year.



### **5.3. Georgia**

A proposal for TBI project in Georgia was developed by NTF with IGEH, based on contacts of prof. Daniel West with Georgia academic institutions and hospitals. The project was submitted for funding to US AID.

### **5.4. Munich Re-insurance company**

Contacts were established with the Münchener Rück/Munich Re Group and a proposal was made to start developing joint TBI project.

### **5.5. COST**

COST is an intergovernmental framework, EU based, for the co-ordination of nationally-funded research at a European level, based on a flexible institutional structure. Co-operation takes the form of concerted activities, i.e. the co-ordination of national research activities. The project entitled *Continuous Quality Improvement of Traumatic Brain Injury Patient Care* on coordinating quality of care research was submitted for funding. The project will coordinate (if successful) research activities in 16 European countries. If the funding was received US organizations could join the initiative.

### **5.6. PHARE-Hungary**

An application for EC-funded service contract on Short-term professional training in epidemiology in Hungary was submitted in a consortium of Hilfswerk Austria, CEEN Economic Project & Policy Consulting GmbH and IGEH. The application was not short-listed.



## **5.7. Italy – Ancona**

A project was developed in a cooperation with Clinica di Neurochirurgia Università Degli Studi Di Ancona, Facoltà di Medicina e Chirurgia, Azienda Ospedaliera Umberto I to support the implementation of TBI guidelines in the hospital and the entire region. The project was submitted for private as well as state authorities for funding.



## 6. IT DEVELOPMENT

### 6.1. Handheld and wireless ITCP

In cooperation with IP Services and Management unit at Siemens AG Österreich a prototype ITCP database was developed for handhelds computers. Current activities are oriented to prepare for larger sale project to demonstrate the utility of handheld devices in the management of TBI patients. The project proposal will be oriented to the 6<sup>th</sup> Framework Program and will utilize the previous IT project proposal.



## 7. PUBLICATIONS and INFORMATION MATERIALS

### 7.1. TBI-Guidelines in German

The TBI-Guidelines were translated to German language by the Austrian supply company. Due to problems with Brain Trauma Foundation the guidelines were not distributed.

### 7.2. Papers

Following papers were published in journals:

7.2.1. Mauritz,W., Rusnak,M., et al. 2002. "Implementing Scientific Evidence Based Guidelines: Case Study of Severe Traumatic Brain Injuries," in PROCEEDINGS of the Second International Healthcare Conference: Global Engagement in Creating Financially Viable Healthcare Systems, Ashish Chandra et al, Editors, pp.267-271.

7.2.2. Rusnak,M., Mauritz,W.: *Kvalita zdravotnej starostlivosti a kognitívna medicína. Prípadová štúdia ťažkých úrazov mozgu (Quality of health care and Evidence Based Medicine. Case Study of Severe TBI)*. Moderný medicínsky manažment, 1, vol.IX, 2002, p.9-12.

Three papers were submitted for publication to international journals:

- i) Mauritz, W., Rusnak, M., Janciak, I., Traumatic Brain Injury Study Team: *Implementing Scientific Evidence Based Guidelines: Case Study Of Severe Traumatic Brain Injuries*. Submitted to Clinical Research and Regulatory Affairs.
- ii) Urbanský, M., Rudinský, B., Rusnak,M., Janciak, I.: *Zlepšenie kvality starostlivosti o pacientov s ťažkým úrazom mozgu v NsP Nové Zámky*. Submitted to Moderný medicínsky manažment.
- iii) Urbansky,M., Rusnak,M., Janciak,I.: *Improving Quality of Care for Severely Head Injured Patients in Nove Zamky Hospital*. Submitted for Journal of Health Sciences Management and Public Health.

### 7.3. Web-site

<http://www.igeh.org/>



## 8. BUDGET

	REVENUES	EXPENSES
	€	€
<b>Revenues Total</b>	<b>356 172,53</b>	
a) Carry over from 2001 (Bank balance)	20 631,11	
BWK	4 370,00	
Support from Neurotrauma Foundation	117 985,09	
EU 5th Framework Program	174 735,00	
Refunds for Travel Costs	38 393,04	
Interest gain	58,29	
<b>Expenses Total</b>		<b>169 074,01</b>
a) Staff		68 807,51
b) Office		27 239,02
c) Capital/Equipment		1 904,00
d) PR Materials Development		3 441,96
e) Development of ITCP Database		13 081,11
f) Professional Consultants		41 178,58
g) Medical Advisory Board Meeting		13 421,83
<b>BALANCE (Revenue - Expenses)</b>	<b>€</b>	<b>187 098,52</b>