Pan American Health Organization
Regional Office of the World Health Organization

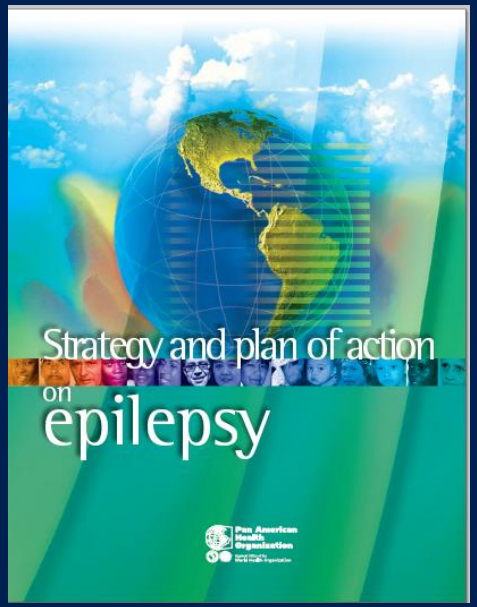
Neurology Training Program
National Autonomous University of Honduras

INTERNATIONAL LEAGUE AGAINST EPILEPSY

Experiencia de Honduras:Creación de una base de datos epidemiológicos

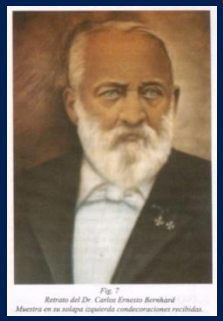
Prof. Lazaro Molina
Prof. Marco T Medina
Universidad Nacional Autonoma de Honduras

PAHO STRATEGY AND PLAN OF ACTION ON EPILEPSY



HONDURAS is a Low middle income country (World Bank) of 8 million people

National Autonomous University of Honduras School of Medical Sciences



- Honduras founded the School of Medical Sciences in 1882 at the National Autonomous University of Honduras (UNAH).

A Joint project of Neurologists in Honduras and the WFN

- The UNAH Universitary Council approved the progam in October 29th, 1998

ELSEVIER

Journal of the Neurological Sciences 253 (2007) 7–17

Journal of the Neurological Sciences

www.elsevier.com/locate/jns

Developing a neurology training program in Honduras: A joint project of neurologists in Honduras and the World Federation of Neurology

Marco T. Medina [a,b,*], Theodore Munsat [a], Alberto Portera-Sánchez [a], Reyna M. Durón [b], Carrie A. Becker [a], Kenton R. Holden [a]

The WFN Education Committee

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Received 14 June 2006; accepted 28 July 2006

Available online 22 December 2006

Formación de Neurólogos y Epileptólogos WFN

Honduras Pilots WFN Training Program in Latin America

BY MARCO T. MEDINA, M.D., AND THEODORE MUNSAT, M.D.
WFN Education Committee

Prof. Medina (left) is dean of the School of Medical Sciences at the National Autonomous University of Honduras, Tegucigalpa.

Prof. Munsat (right) is professor emeritus, Tufts University, Boston.

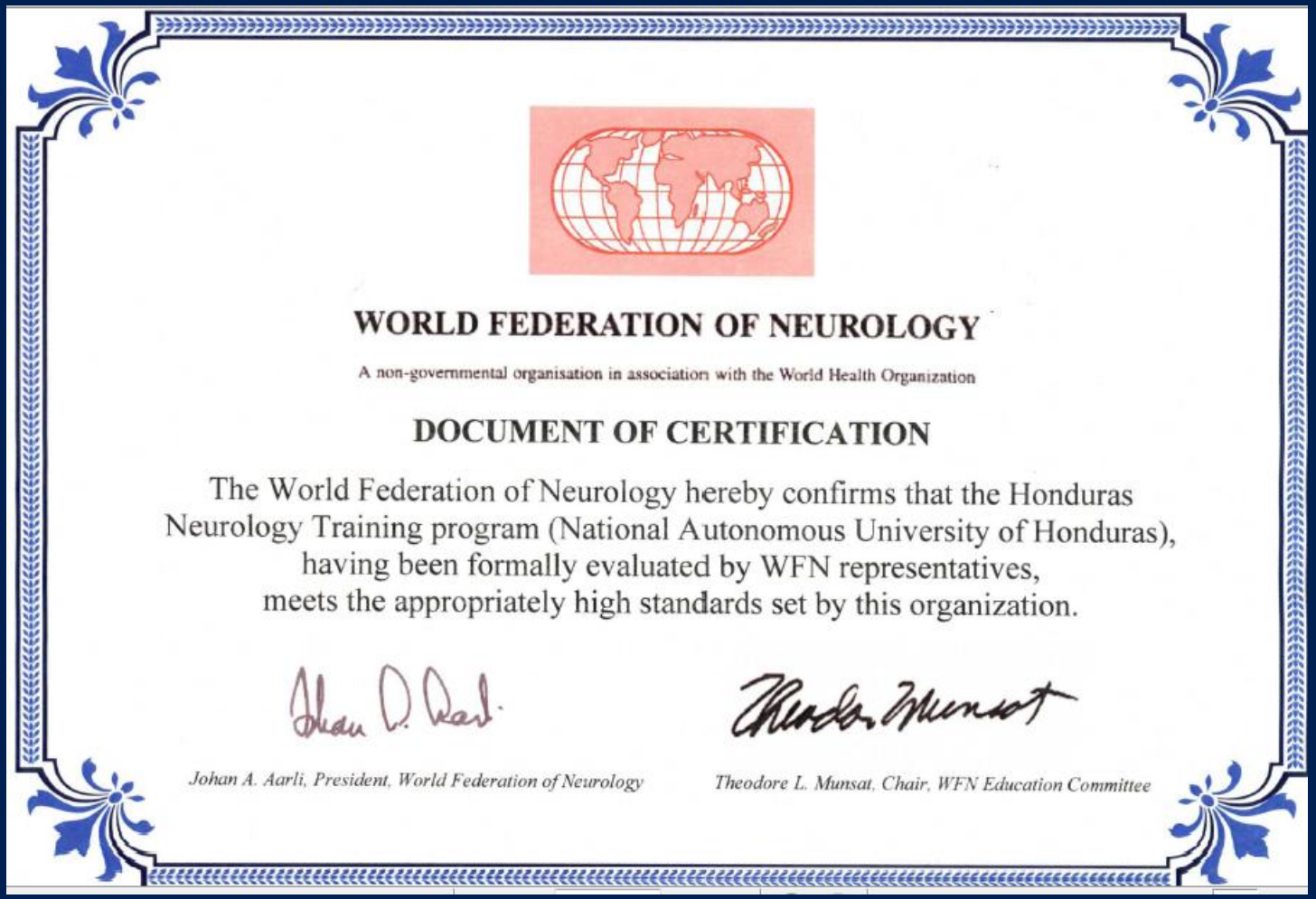
tient care and promoted research in the neurosciences.

The training program provided a valuable model that could be adapted and applied to other developing countries in the region with similar needs for neurological care.

The neurology department at the National Autonomous University of Honduras, Tegucigalpa, is considered one of the best in Central America, and every

sues, review cases, and examine how practice might differ in their respective countries. The president of the national neurological society in each country appoints a WFN education coordinator who distributes the courses and arranges the discussion groups. Participants have to submit an evaluation form and belong to a national society if they wish to receive a certificate.

Honduras World Federation of Neurology Certification



WORLD FEDERATION OF NEUROLOGY

A non-governmental organisation in association with the World Health Organization

DOCUMENT OF CERTIFICATION

The World Federation of Neurology hereby confirms that the Honduras Neurology Training program (National Autonomous University of Honduras), having been formally evaluated by WFN representatives, meets the appropriately high standards set by this organization.

Johan A. Aarli, President, World Federation of Neurology

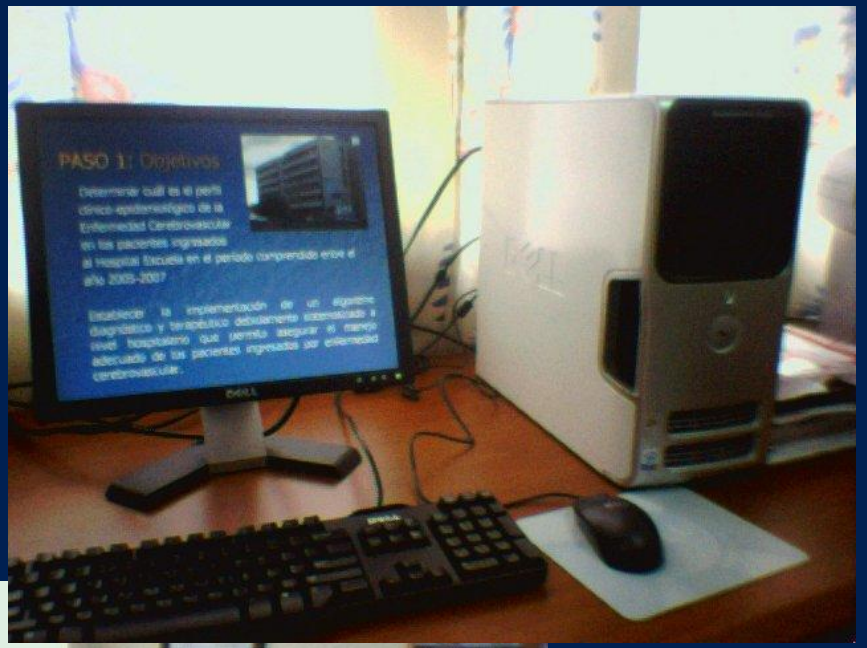
Theodore L. Munsat, Chair, WFN Education Committee

HONDURAS NEUROLOGY TRAINING PROGRAM AND ILAE

1. ILAE Honduras Chapter Since 1994

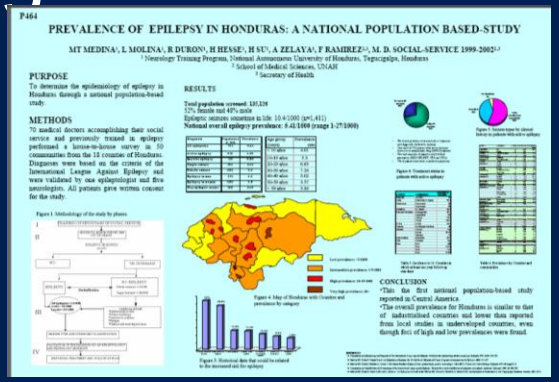
2. Since 1998 new neurologists trained in Honduras currently represent 50% of the Hondurans neurologists . One of the most significant consequences of the Neurology Training Program in Honduras has been this improvement in the neurologist–population ratio by 35% from 1:325,000 to approximately 1:230,000 between 1998 and 2012. Four Epileptologists and nine child neurologists


CENTRO
VIGILANCIA
DE
NEUROEPIDEMIOLOGIA
POSTGRADO DE NEUROLOGIA
HONDURAS, C.A.


PASO 1: Objetivos
Determinar cuál es el perfil clínico-epidemiológico de la Enfermedad Cerebrovascular en los pacientes ingresados al Hospital Escuela en el período comprendido entre el año 2005-2007
Establecer la implementación de un algoritmo diagnóstico y terapéutico debidamente estandarizado a nivel hospitalario que permita asegurar el manejo adecuado de los pacientes ingresados por enfermedad cerebrovascular.

Background: Epidemiological Studies in Honduras

- A 1999-2000 National Population based epilepsy prevalence study of 135,035 inhabitants
- Mean National Epilepsy Prevalence of 6.63/1000.Incidence 104 x 100.000
- Range: 1 to 23.3/1000



P464

PREVALENCE OF EPILEPSY IN HONDURAS: A NATIONAL POPULATION BASED-STUDY

MT MEDINA[1], L MOLINA[1], R DURON[1], H HESSE[1], H SU[1], A ZELAYA[1], F RAMIREZ[2,3], M. D. SOCIAL-SERVICE 1999-2002[1,3]

[1] Neurology Training Program, National Autonomous University of Honduras, Tegucigalpa, Honduras
[2] School of Medical Sciences, UNAH
[3] Secretary of Health

PURPOSE

To determine the epidemiology of epilepsy in Honduras through a national population-based study.

METHODS

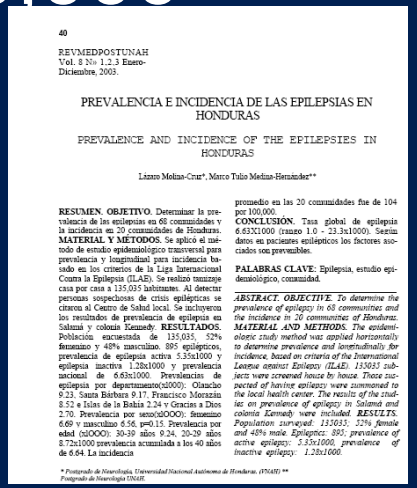
70 medical doctors accomplishing their social service and previously trained in epilepsy performed a house-to-house survey in 50 communities from the 18 counties of Honduras. Diagnoses were based on the criteria of the International League Against Epilepsy and were validated by one epileptologist and five neurologists. All patients gave written consent for the study.

RESULTS

Total population screened: 135,138
52% female and 48% male
Epileptic seizures sometime in life: 10.4/1000 (n=1,411)
National overall epilepsy prevalence: 6.41/1000 (range 1-27/1000)

CONCLUSION

"This the first national population-based study reported in Central America.
"The overall prevalence for Honduras is similar to that of industrialized countries and lower than reported from local studies in underveloped countries, even though foci of high and low prevalences were found.



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REVMEDPOSTUNAH
Vol. 8 N° 1,2,3 Enero-Diciembre, 2003.

PREVALENCIA E INCIDENCIA DE LAS EPILEPSIAS EN HONDURAS

PREVALENCE AND INCIDENCE OF THE EPILEPSIES IN HONDURAS

Lázaro Molina-Cruz*, Marco Tulio Medina-Hernández**

RESUMEN. OBJETIVO. Determinar la prevalencia de las epilepsias en 68 comunidades y la incidencia en 20 comunidades de Honduras. **MATERIAL Y METODOS**. Se aplico el método de estudio epidemiológico transversal para prevalencia y longitudinal para incidencia basado en los criterios de la Liga Internacional Contra la Epilepsia (ILAE). Se realizó tamizaje casa por casa a 135,035 habitantes. Al detectar personas sospechosas de crisis epilépticas se citaron al Centro de Salud local. Se incluyeron los resultados de prevalencia de epilepsia en Salama y colonia Kennedy. **RESULTADOS**. Población encuestada de 135,035, 52% femenino y 48% masculino. 895 epilepticos, prevalencia de epilepsia activa 5.35x1000 y epilepsia inactiva 1.28x1000 y prevalencia nacional de 6.63x1000. Prevalencias de epilepsia por departamento(x1000): Olancho 9.23, Santa Bárbara 9.17, Francisco Morazán 8.52 e Islas de la Bahía 2.24 y Gracias a Dios 2.70. Prevalencia por sexo(xlOOO): femenino 6.69 y masculino 6.56. p=0.15. Prevalencia por edad (xlOOO): 30-39 años 9.24, 20-29 años 8.72x1000 prevalencia acumulada a los 40 años de 6.64. La incidencia promedio en las 20 comunidades fue de 104 por 100,000.
CONCLUSIÓN. Tasa global de epilepsia 6.63X1000 (rango 1.0 - 23.3x1000). Según datos en pacientes epilépticos los factores asociados son prevenibles.

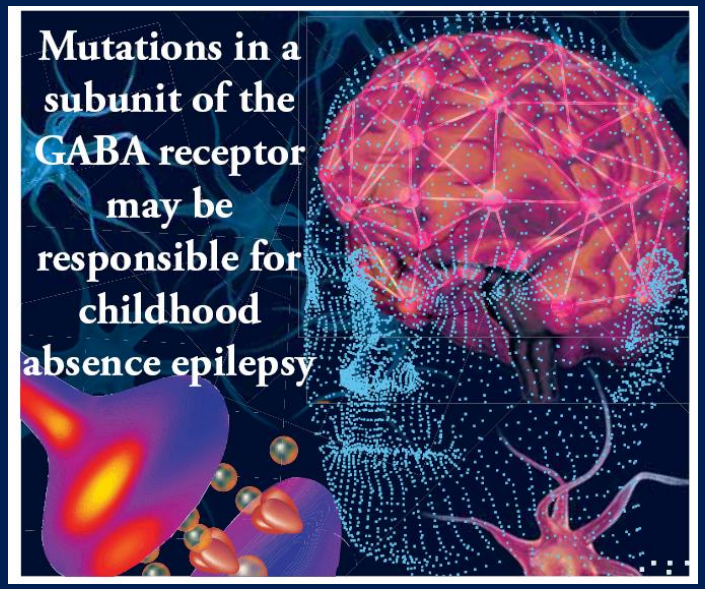
PALABRAS CLAVE: Epilepsia, estudio epidemiológico, comunidad.

ABSTRACT. OBJECTIVE. *To determine the prevalence of epilepsy in 68 communities and the incidence in 20 communities of Honduras.* ***MATERIAL AND METHODS.*** *The epidemiologic study method was applied horizontally to determine prevalence and longitudinally for incidence, based on criteria of the International League against Epilepsy (ILAE). 135035 subjects were screened house by house. These suspected of having epilepsy were summoned to the local health center. The results of the studies on prevalence of epilepsy in Salama and colonia Kennedy were included.* ***RESULTS.*** *Population surveyed: 135035; 52% female and 48% male. Epileptics: 895; prevalence of active epilepsy: 5.35x1000, prevalence of inactive epilepsy: 1.28x1000.*

* Postgrado de Neurología, Universidad Nacional Autónoma de Honduras, (UNAH) **
Postgrado de Neurología UNAH.

- **Molina L, Medina MT. Prevalencia e Incidencia de la Epilepsia en Honduras. Rev Postgrado UNAH 2003.**
- **Medina MT**, Molina L, Durón R, et al. Prevalence of the Epilepsies in Honduras.A National Population-Based Study. **Epilepsia** 2003;44(Suppl.8):155. International Epilepsy Conference , Lisbon, 2003

Basic Research/Genetic Epidemiology on Childhood Absence Epilepsy and Juvenile Myoclonic epilepsy genes (NIH Supported)



Please cite this article in press as: Tanaka et al., Hyperglycosylation and Reduced GABA Currents of Mutated *GABRB3* Polypeptide in Remitting Childhood Absence..., The American Journal of Human Genetics (2008), doi:10.1016/j.ajhg.2008.04.020

ARTICLE

Hyperglycosylation and Reduced GABA Currents of Mutated *GABRB3* Polypeptide in Remitting Childhood Absence Epilepsy

Miyabi Tanaka,[1,2,14] Richard W. Olsen,[1,14] Marco T. Medina,[4] Emily Schwartz,[5] Maria Elisa Alonso,[6] Reyna M. Duron,[2,4] Ramon Castro-Ortega,[7] Iris E. Martinez-Juarez,[2,6] Ignacio Pascual-Castroviejo,[8] Jesus Machado-Salas,[2] Rene Silva,[9] Julia N. Bailey,[2,10] Dongsheng Bai,[2] Adriana Ochoa,[6] Aurelio Jara-Prado,[6] Gregorio Pineda,[2] Robert L. Macdonald,[11,12,13] and Antonio V. Delgado-Escueta[2,3,*]

Childhood absence epilepsy (CAE) accounts for 10% to 12% of epilepsy in children under 16 years of age. We screened for mutations in the $GABA_A$ receptor (GABAR) β3 subunit gene (*GABRB3*) in 48 probands and families with remitting CAE. We found that four out of 48 families (8%) had mutations in *GABRB3*. One heterozygous missense mutation (P11S) in exon 1a segregated with four CAE-affected persons in one multiplex, two-generation Mexican family. P11S was also found in a singleton from Mexico. Another heterozygous missense mutation (S15F) was present in a singleton from Honduras. An exon 2 heterozygous missense mutation (G32R) was present in two CAE-affected persons and two persons affected with EEG-recorded spike and/or sharp wave in a two-generation Honduran family. All mutations were absent in 630 controls. We studied functions and possible pathogenicity by expressing mutations in HeLa cells with the use of

Novel mutations in *Myoclonin1/EFHC1* in sporadic and familial juvenile myoclonic epilepsy

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R.M. Duron, MD
I.E. Martinez-Juarez, MD
J.N. Bailey, PhD
D. Bai, MD
Y. Inoue, MD
I. Yoshimura, MD
S. Kaneko, MD
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A. Ochoa, MSc
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Y. Ueda, MD
M. Osawa, PhD
H. Oguni, PhD
F. Rubio-Donnadieu, MD
K. Yamakawa, PhD
A.V. Delgado-Escueta, MD

ABSTRACT

Background: Juvenile myoclonic epilepsy (JME) accounts for 3 to 12% of all epilepsies. In 2004, the GENESS Consortium demonstrated four missense mutations in *Myoclonin1/EFHC1* of chromosome 6p12.2-1 segregating in 20% of Hispanic familiaswith JME.

Objective: To examine what percentage of consecutive JME clinic cases have mutations in *Myoclonin1/EFHC1*.

Methods: We screened 44 consecutive patients from Mexico and Honduras and 67 patients from Japan using heteroduplex analysis and direct sequencing.

Results: We found five novel mutations in transcripts A and B of *Myoclonin1/EFHC1*. Two novel heterozygous missense mutations (c.755C>A and c.1523C>G) in transcript A occurred in both a singleton from Mexico and another singleton from Japan. A deletion/frameshift (C.789del AV264fsx280) in transcript B was present in a mother and daughter from Mexico. A nonsense mutation (c.823C>T) in transcript B segregated in four clinically and seven epileptiform-EEG affected members of a large Honduran family. The same nonsense mutation (c.823C>T) occurred as a de novo mutation in a sporadic case. Finally, we found a three-base deletion (−264*−262del.GAT) in the promoter region in a family from Japan.

Conclusions: Nine percent of consecutive juvenilemyoclonic epilepsy cases from Mexico and Honduras clinics and 3% of clinic patients from Japan carry mutations in*Myoclonin1/EFCH1*. These results represent the highest number and percentage of mutations found for a juvenile myoclonic epilepsy causing gene of any population group. Neurology® 2008;70:2137–2144

GLOSSARY

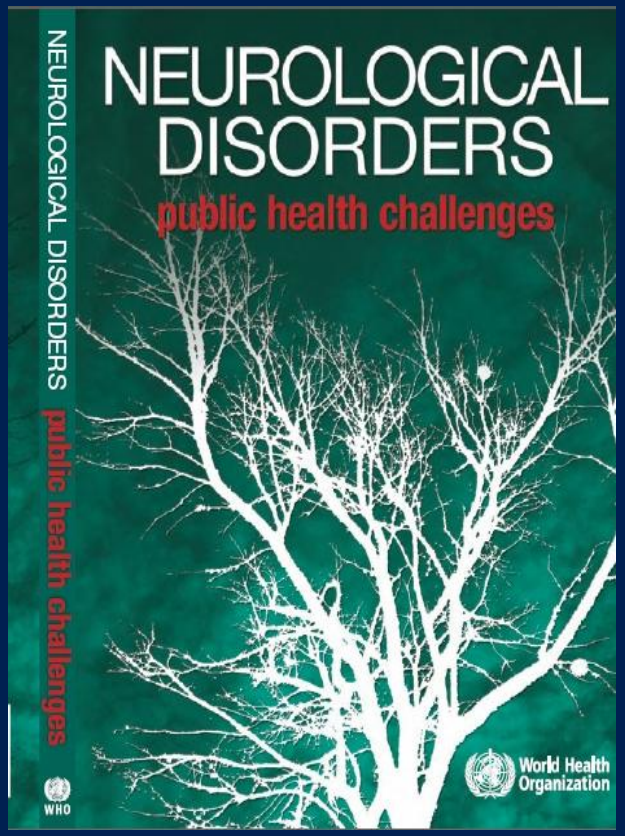
CAE = childhood absence epilepsy; FS = febrile seizures in infancy/childhood; GM = grand mal tonic clonic seizure; JME = Juvenile myoclonic epilepsy; PSW = 3–4 Hz polyspike and slow wave complex; SW = single spike and slow wave complex.

Juvenile myoclonic epilepsy (JME) is the most common cause of primary grand mal seizures.[1,2] It is responsible for 6 to 12% up to 30% of all epilepsies in hospitals/clinics[3] and for 3% according to a door-to-door population study.[4] The JME phenotype is characterized by adolescent onset and lifelong grand mal (clonic-tonic-clonic), myoclonic, and absence seizures and EEG diffuse 3.5–6 Hz polyspike waves.[2,5,6]

Three mutation-harboring genes have been identified for JME. One is the gamma-aminobutyric acid receptor alpha-1 (*GABRA1*) gene on chromosome 5q34-q35, found to

- Tanaka M, Olsen RW, Medina MT, et al Am J Hum Genet. 2008
- Suzuki et al Nature Genetics 2004
- Medina et al Neurology 2008

The Neurology Training Program has collaborated with the WHO and PAHO on Neuroinfections, the ICD-11 and PAHO Strategy and Plan of Action



Epilepsia, 53(Suppl. 2):3–5, 2012
doi: 10.1111/j.1528-1167.2012.03550.x

CLASSIFICATION REVISITED

Revising the ICD-10 codes for epilepsy and seizures

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*Rush University, Chicago, Illinois, U.S.A.; †'Mario Negri' Institute for Pharmacological Research, Milano, Italy; and ‡National Autonomous University of Honduras, Tegucigalpa, Honduras

SUMMARY

The World Health Organization is currently revising the International Classification of Disease, 10th Revision (ICD-10). A Neurology Task Force Advisory Group [TAG] has been charged with producing a revision that reflects scientific advances and new concepts of pathophysiology since 1992. The ICD codes are used globally to report mortality and morbidity statistics, and they play a vital role in health care planning, training, and allocation of health care resources in many countries. Although used by physicians and hospitals at all levels, the primary users of the ICD codes are primary health care providers, which, particularly in low income countries, include nurses, clinical assistants, and health officers. The TAG, which consists of representatives of major international subspecialty groups such as the International League Against Epilepsy (ILAE), has published draft codes that are available online for public comment.

KEY WORDS: International classification of diseases, Epilepsy classification, Seizure classification.

The International Classification of Diseases (ICD) codes are written and promulgated by the World Health Organization (WHO). Although an internationally accepted diagnostic coding system was first devised in the mid-nineteenth century, it was in 1948 that the newly formed WHO was charged with keeping the system up to date and maintaining its credibility and usefulness for its member states.

Today the ICD codes are the main epidemiologic instrument used by many countries for gathering national health statistics for internal use, and for reporting annual morbidity and mortality data to WHO. Major users of the codes include health officers, nurses, physicians, and professional coders. Information generated by the ICD codes is summarized in WHO's annual World Health Report, and is a major source of health information used by ministries of health, health care planners, nongovernmental organizations, and others involved in allocation of resources for health care, training programs, and research. The codes are also used by health care organizations for data management and reimbursement purposes. They are translated into the WHO's "official" languages: English, Spanish, French, Chinese, Russian, and Arabic, and 36 other languages (http://www.who.int/classifications/icd/ICD-10%20languages.pdf, accessed January 22, 2012).

In 2009 the WHO began the revision of ICD-10 Chapter on Diseases of the Nervous System, including the appointment of a Task Force Advisory Group (TAG) for Neurology, which was charged with assembling a comprehensive list of neurologic and neurosurgical disorders into one coding group or "block." The Neurology TAG consists of representatives of the major international neurological subspecialty organizations, including the International League Against Epilepsy (ILAE), as well as neuroscientists and clinical neurologists from every continent and from low, middle, and high income countries. The initial charge to the group was to compose a classification system that is (1) scientifically plausible and up to date; (2) epide-

Neuroinfections: Neurocysticercosis is one of the most common neurological problem worldwide

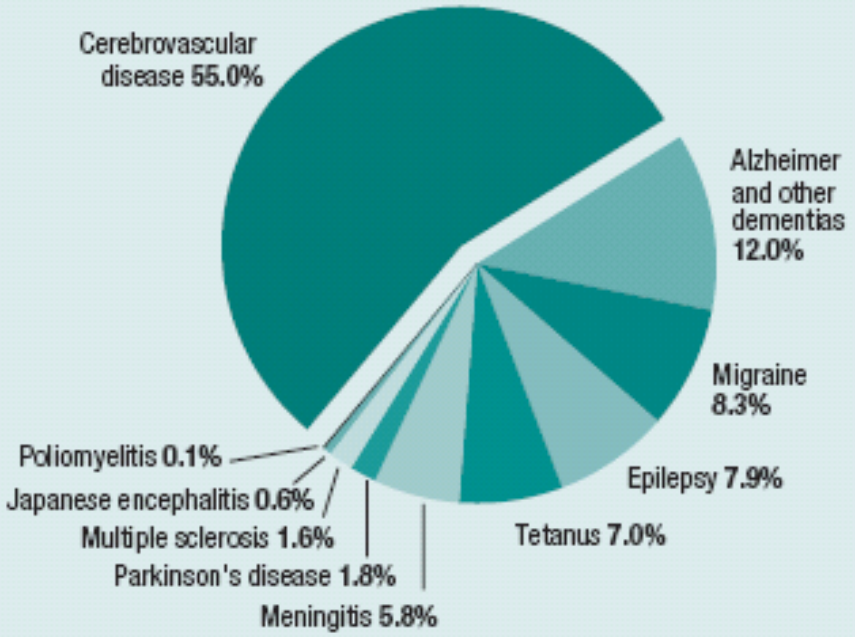
3.5 Neuroinfections

Infectious diseases that involve the nervous system affect millions of people around the world. They constitute the sixth cause of neurological consultation in primary care services and are reported globally by a quarter of WHO's Member States and by half the countries in some parts of Africa and South-East Asia. Neuroinfections are of major importance since ancient times and, even with the advent of effective antibiotics and vaccines, still remain a major challenge in many parts of the world, especially in developing nations.

3.5 Neuroinfections

Reyna M. Duron, Hector Hugo Garcia, Ashraf Kurdi, Marco T. Medina (chair), Luis C. Rodriguez

Figure 2.2 DALYs for individual neurological disorders as percentage of total neurological disorders



WHO 2007

Salama Study: Active epilepsy prevalence (15.4), incidence (92.7), and Etiologies.

Epilepsia, **46**(1):124–131, 2005
Blackwell Publishing, Inc.

Prevalence, Incidence, and Etiology of Epilepsies in Rural Honduras: The Salamá Study

*Marco T. Medina, *Reyna M. Durón, †Lisandro Martínez, †Juan Ramón Osorio, †Ana L. Estrada, †Concepción Zúniga, †Dora Cartagena, ‡Julianne S. Collins, and ‡§Kenton R. Holden

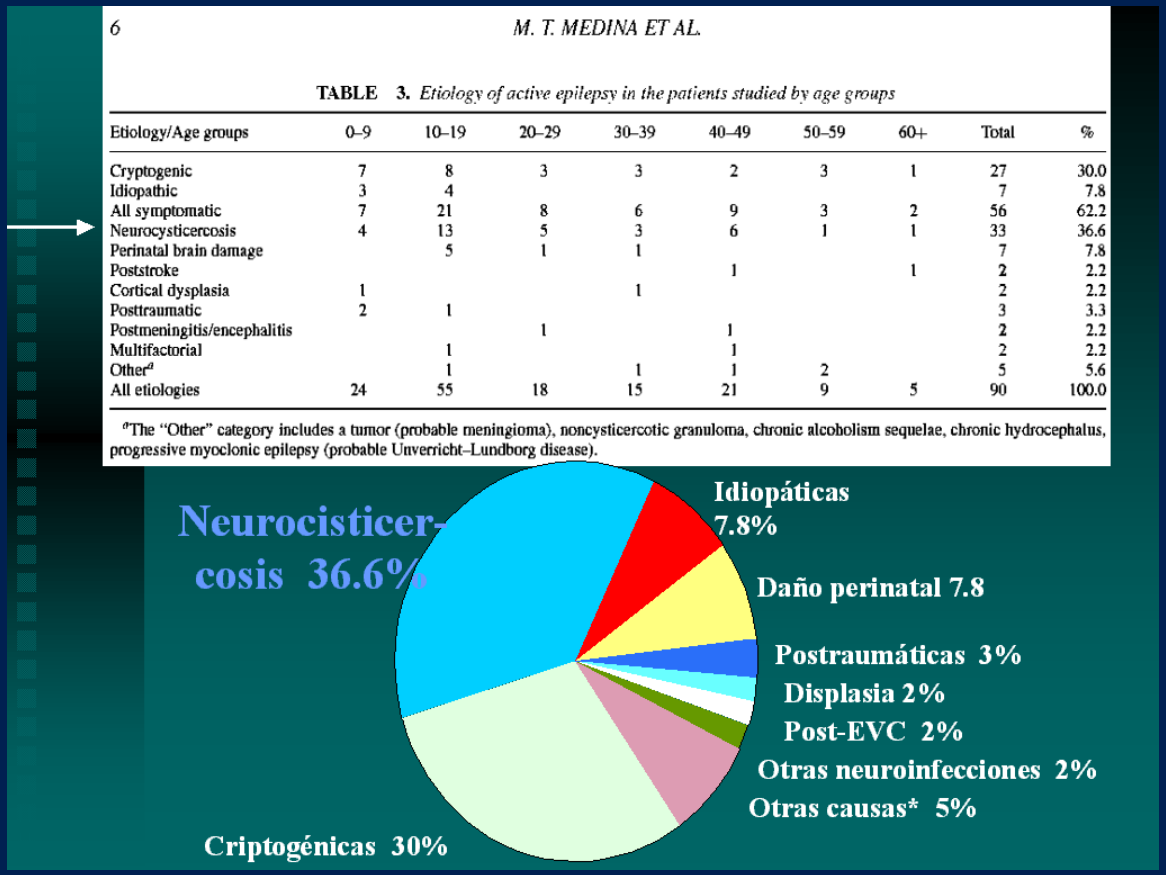
**Neurology Training Program, Postgraduate Direction, National Autonomous University of Honduras; †Secretary of Health, Tegucigalpa, Honduras; ‡Greenwood Genetic Center, Greenwood, South Carolina; and §Department of Neurology, Medical University of South Carolina, Charleston, South Carolina, U.S.A.*

Etiologies: Neurocysticercosis (36.6%), Perinatal brain damage (7.8%), Idiopathic (7.8%), etc

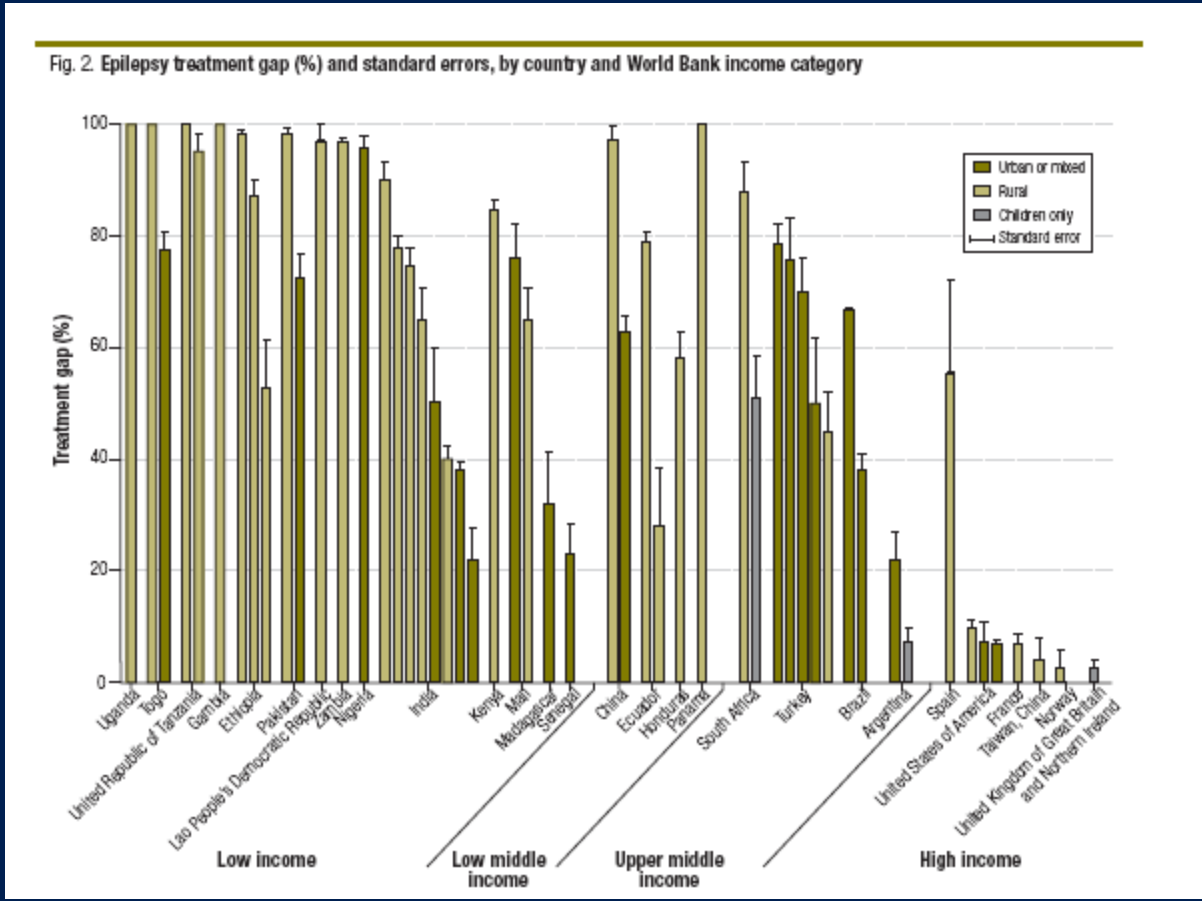
TABLE 3. *Etiology of active epilepsy in the patients studied by age groups*

Etiology/Age groups	0–9	10–19	20–29	30–39	40–49	50–59	60+	Total	%
Cryptogenic	7	8	3	3	2	3	1	27	30.0
Idiopathic	3	4						7	7.8
All symptomatic	7	21	8	6	9	3	2	56	62.2
Neurocysticercosis	4	13	5	3	6	1	1	33	36.6
Perinatal brain damage		5	1	1				7	7.8
Poststroke					1		1	2	2.2
Cortical dysplasia	1			1				2	2.2
Posttraumatic	2	1						3	3.3
Postmeningitis/encephalitis			1		1			2	2.2
Multifactorial		1			1			2	2.2
Other[a]		1		1	1	2		5	5.6
All etiologies	24	55	18	15	21	9	5	90	100.0

[a]The "Other" category includes a tumor (probable meningioma), noncysticercotic granuloma, chronic alcoholism sequelae, chronic hydrocephalus, progressive myoclonic epilepsy (probable Unverricht–Lundborg disease).



Previous Treatment Gap in the Salama Study was 58%



- Meyer et al Bull World Health Org 2010;88:260-68

Neurology Training Program and Honduras Community Intervention

Epilepsia, **(*):1–9, 2011
doi: 10.1111/j.1528-1167.2010.02945.x

FULL-LENGTH ORIGINAL RESEARCH

Reduction in rate of epilepsy from neurocysticercosis by community interventions: The Salamá, Honduras Study

*Marco T. Medina, *Rafael L. Aguilar-Estrada, *Allan Alvarez, *Reyna M. Durón, †Lizandro Martínez, *Sofia Dubón, ‡Ana L. Estrada, ‡Concepción Zúniga, †Dora Cartagena, *Arnold Thompson, *Eunice Ramirez, †Lenín Banegas, †Juan R. Osorio, §Antonio V. Delgado-Escueta, ¶Julianne S. Collins, and ¶#Kenton R. Holden

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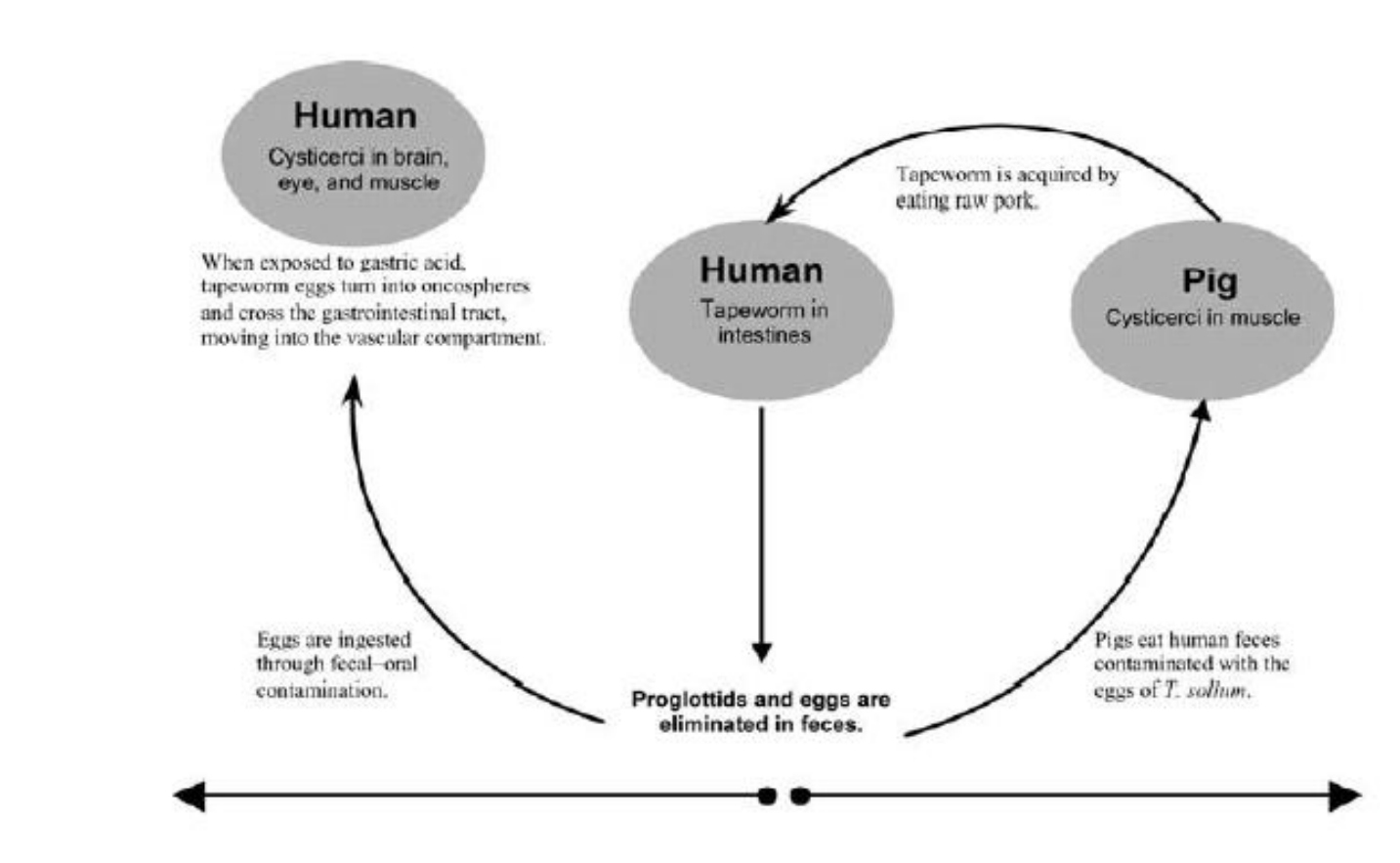
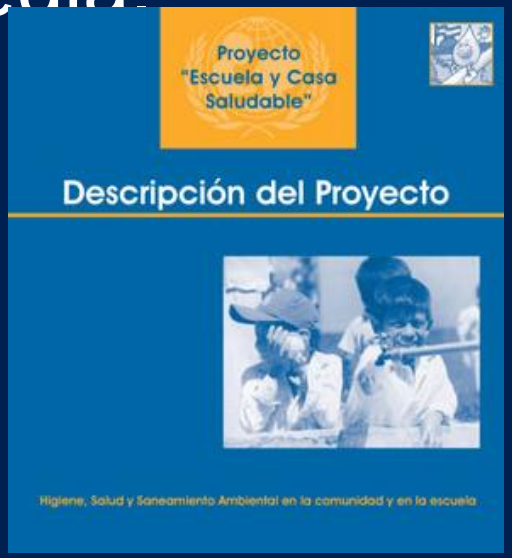
Interventions strategies



Interventions

1) Education on nutrition and sanitation primarily targeting healthcare providers and community leaders as well as the local citizens by means of brochures, posters, public meetings/conferences, and public communication media.



Intervention (2)

- 2) Ongoing education along with deparasitization and stool analyses surveillance for Taenia solium in more than 12,000 toddlers and school-aged children over the 8 years in the Salamá municipalities.

Intervention (3)

- 3) Improving access to potable water primarily by improving contaminated water and waste disposal infrastructure in the highest risk communities based on the initial prevalence studies.

Intervention (4)

- 4) Construction and equipping of a county maternal-fetal health clinic and obstetric delivery suite supplied with an ambulance for transportation of emergencies to secondary or tertiary hospitals.

Intervention (5)

- 5) Education on animal husbandry for county farmers, primarily pig farmers, was instituted by the Department of Agriculture and follow-up inspections made by local authorities for compliance to these established animal-related health codes.

Epidemiological Surveillance

- On site epidemiological surveillance. An epidemiologist living in the area was appointed.

- The Neurology Training Program was founded, and one of its main aim has been to provide the neurological care and supervision (locally and at the University Hospital in the capital city)

Incidence

Table 1. Incidence rates (×100,000) for new active epilepsy and neurocysticercosis cases over 8 years following implementation of public health treatment measures in 1997 in Salamá County

Year	Total population	Epilepsy cases[a]	Overall incidence of epilepsy (per 100,000)	Epilepsy due to NCC cases[b]	Incidence of epilepsy due to NCC (per 100,000)
1998	6365	5	78.6	0	0.0
1999	6257	2	32.0	1	16.0
2000	6149	5	81.3	1	16.3
2001	6041	5	82.8	2	33.1
2002	5933	7	118.0	0	0.0
2003	5825	6	103.0	1	17.2
2004	5717	4	70.0	0	0.0
2005	5609	2	35.7	0	0.0

[a]There were a total of 36 new cases in the 8-year period of the follow-up, with a mean of 4.5 new cases per year, and mean annual incidence of 75.2/100,000 for the period.

[b]Note the decreasing symptomatic epilepsy secondary to neurocysticercosis (NCC) over the last 4 years of the study period along with the decreasing incidence during the same time.

- Medina MT, Aguilar-Estrada RL, Alvarez A, Durón RM, Martínez L, Dubón S, et al Reduction in rate of epilepsy from neurocysticercosis by community interventions: the Salamá, Honduras study. Epilepsia. 2011 Jun;52(6):1177-85

Etiologies

Table 3. Etiologies of the 36 active epilepsy cases studied with new onset of disease post-1997 in Salamá County

Epilepsy etiology	1998	1999	2000	2001	2002	2003	2004	2005	Total n (%)	n (%)in 1997	p-Value
Cryptogenic	3		3	3	1	1	2		13 (36.1)	27 (30.0)	NS
Idiopathic	1					1			2 (5.6)	7 (7.8)	NS
Symptomatic	1	2	2	2	6	4	2	2	21 (58.3)	56 (62.2)	NS
Neurocysticercosis		1	1	2		1			5 (13.9)	33 (36.7)	0.02
Perinatal brain damage		1	1		1		1		4 (11.1)	7 (7.8)	NS
Poststroke					1				1 (2.8)	2 (2.2)	NS
Cortical dysplasia	1							1	2 (5.6)	2 (2.2)	NS
Posttraumatic (head)						1	1		2 (5.6)	3 (3.3)	NS
Postmeningitis/encephalitis								1	1 (2.8)	2 (2.2)	NS
Multifactorial[a]					2	1			3 (8.3)	2 (2.2)	NS
"Other"[b,c]					2	1			3[b] (8.4)	5[c] (5.6)	NS
Total	5	2	5	5	7	6	4	2	36	90 (100)	

[a]Combined etiology was considered when simultaneous presence of more than one proven condition correlated with seizure type and time of onset of epilepsy, without criteria to exclude one or the other as a cause.
[b]Mesial temporal sclerosis (2), nonspecific white matter lesion (1)
[c]tumor (1), alcoholism (1), progressive myoclonic epilepsy (1), chronic hydrocephalus (1), nonneurocysticercosis granuloma (1)

- Medina MT, Aguilar-Estrada RL, Alvarez A, Durón RM,Dubon SA et al . Reduction in rate of epilepsy from neurocysticercosis by community interventions: the Salamá, Honduras study. Epilepsia. 2011 Jun;52(6):1177-85

Conclusion

- Community Interventions can reduce rate of preventable Epilepsy from Neurocysticercosis

Promoting patient advocacy groups

- Honduras Epilepsy Foundation (IBE Chapter)
-

Patients at the first conference of the Epilepsy Foundation.

UNAH: New Imaging (i.e.,3 Tesla MRI), Rehabilitation and Research Center (i.e., molecular biology) at the UNAH (2013)

Estudios sobre Medicina complementaria y alternativa

Epilepsy & Behavior 14 (2009) 645–650

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Epilepsy & Behavior

journal homepage: www.elsevier.com/locate/yebeh

Adherence and complementary and alternative medicine use among Honduran people with epilepsy

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Cohorte sobre status Epilepticus

G Model
YSEIZ-1608; No. of Pages 5

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Short communication

Adult convulsive status epilepticus in the developing country of Honduras

Holly J. Skinner [a,b,1,*], Sofia A. Dubon-Murcia [b], Arnold R. Thompson [b], Marco T. Medina [b], Jonathan C. Edwards [a], Joyce S. Nicholas [c], Kenton R. Holden [a,b]

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Background

- In August 20th to 22nd 2008 a Regional Workshop in Tegucigalpa, suggested a Demonstrative Treatment Gap Study in Honduras

Pan American Health Organization

Regional Office of the World Health Organization

MENTAL HEALTH, DISABILITIES AND REHABILITATION BULLETIN

August 2008

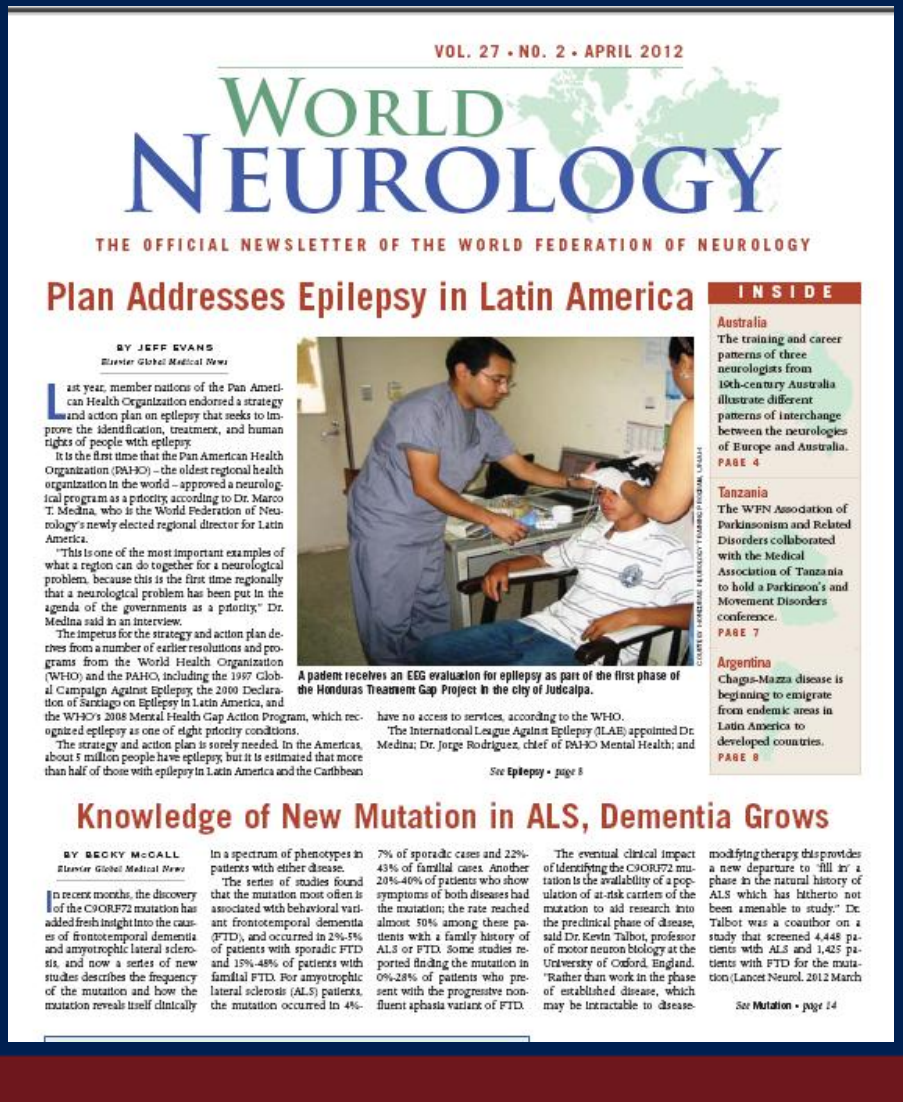
Regional Workshop sponsored by PAHO/WHO: The Current Situation of epilepsy in Latin America and the Caribbean, Challenges and Prospects

A regional workshop on epilepsy cosponsored by the Pan American Health Organization (PAHO), the Department of Mental Health and Substance Abuse of the World Health Organization (WHO), the International League Against Epilepsy (ILA) and the International Bureau for Epilepsy (IBE) took place in Tegucigalpa, Honduras from 20- 22 August 2008.

Those in attendance at the opening session included Dr. Lilian Reneau-Vernon, representative of PAHO/WHO in Honduras, Dr. Jorge Rodriguez, Project Coordinator of Mental Health PAHO/WHO headquarters in Washington, D. C. and other officials from the Ministry of Public Health of Honduras.

Participants worked for three days discussing regional issues and experiences and the best strategies suited to dealing with epilepsy.

Epilepsy Treatment Gap Project



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WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

Plan Addresses Epilepsy in Latin America

BY JEFF EVANS
Elsevier Global Medical News

Last year, member nations of the Pan American Health Organization endorsed a strategy and action plan on epilepsy that seeks to improve the identification, treatment, and human rights of people with epilepsy.

It is the first time that the Pan American Health Organization (PAHO) – the oldest regional health organization in the world – approved a neurological program as a priority, according to Dr. Marco T. Medina, who is the World Federation of Neurology's newly elected regional director for Latin America.

"This is one of the most important examples of what a region can do together for a neurological problem, because this is the first time regionally that a neurological problem has been put in the agenda of the governments as a priority," Dr. Medina said in an interview.

The impetus for the strategy and action plan derives from a number of earlier resolutions and programs from the World Health Organization (WHO) and the PAHO, including the 1997 Global Campaign Against Epilepsy, the 2000 Declaration of Santiago on Epilepsy in Latin America, and the WHO's 2008 Mental Health Gap Action Program, which recognized epilepsy as one of eight priority conditions.

The strategy and action plan is sorely needed. In the Americas, about 5 million people have epilepsy, but it is estimated that more than half of those with epilepsy in Latin America and the Caribbean have no access to services, according to the WHO.

The International League Against Epilepsy (ILAE) appointed Dr. Medina; Dr. Jorge Rodriguez, chief of PAHO Mental Health; and

See **Epilepsy** • *page 8*

A patient receives an EEG evaluation for epilepsy as part of the first phase of the Honduras Treatment Gap Project in the city of Judcalpa.

COURTESY HONDURAS NEUROLOGY TRAINING PROGRAM, UNAH

INSIDE

Knowledge of New Mutation in ALS, Dementia Grows

BY BECKY McCALL
Elsevier Global Medical News

In recent months, the discovery of the C9ORF72 mutation has added fresh insight into the causes of frontotemporal dementia and amyotrophic lateral sclerosis, and now a series of new studies describes the frequency of the mutation and how the mutation reveals itself clinically in a spectrum of phenotypes in patients with either disease.

The series of studies found that the mutation most often is associated with behavioral variant frontotemporal dementia (FTD), and occurred in 2%-5% of patients with sporadic FTD and 15%-48% of patients with familial FTD. For amyotrophic lateral sclerosis (ALS) patients, the mutation occurred in 4%-7% of sporadic cases and 22%-43% of familial cases. Another 20%-40% of patients who show symptoms of both diseases had the mutation; the rate reached almost 50% among these patients with a family history of ALS or FTD. Some studies reported finding the mutation in 0%-28% of patients who present with the progressive nonfluent aphasia variant of FTD.

The eventual clinical impact of identifying the C9ORF72 mutation is the availability of a population of at-risk carriers of the mutation to aid research into the preclinical phase of disease, said Dr. Kevin Talbot, professor of motor neuron biology at the University of Oxford, England. "Rather than work in the phase of established disease, which may be intractable to disease-modifying therapy, this provides a new departure to 'fill in' a phase in the natural history of ALS which has hitherto not been amenable to study." Dr. Talbot was a coauthor on a study that screened 4,448 patients with ALS and 1,425 patients with FTD for the mutation (Lancet Neurol. 2012 March

See **Mutation** • *page 14*