



CURRICULUM VITAE

Michelle Grunauer, M.D., MSc., PhD

PERSONAL:

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CITIZENSHIP:

Ecuador

EDUCATION:

- M.D. Universidad Central del Ecuador, School of Medicine, Ecuador 1992
- Specialist in Pulmonology, University of Sao Paulo, School of Medicine, Brazil 1995.
- Specialist in Critical Care Medicine, University of Sao Paulo, School of Medicine, Brazil 1997.
- PhD., Research line: Respiratory Mechanics and Mechanical Ventilation, University of Sao Paulo, School of Medicine, Brazil 1999.
- Certification in Cognitive Behavioral Therapy, Beck Institute, USA 2006.
- MSc, Child and Family Mental Health, University of Birmingham, UK, 2008
- Postgraduate Diploma in Palliative Medicine, University of Cape Town 2016

LANGUAGES:

Spanish: Native speaker
English: Fluent
Portuguese: Fluent

POSITIONS, EMPLOYMENT, & PROFESSIONAL ACTIVITIES:

- Dean School of Medicine: first female dean of medicine in the history of Ecuador, Universidad San Francisco de Quito—2012-Present
- Director of Critical Care Areas, Universidad San Francisco de Quito, School of Medicine—1999-Present
- Fulltime Professor at the Universidad San Francisco de Quito, School of Medicine—1999-Present
- Attending and Academic Director, Pediatric Critical Care Unit, Hospital de los Valles, Universidad San Francisco de Quito—2008-Present
- Director of the Mental Health and Palliative Care program at the PICU and NICU Hospital de los Valles—2008-Present
- Founder of the first PICU that uses family-centered and palliative care practices in Ecuador—2011
- Director of medical relief efforts in the coastal disaster zone in Ecuador following the April 2016 earthquake —2016-2017
- Professor (*Visiting Faculty member*) Johns Hopkins University—2013-Present
- EPEC-Latin America. Co-editor of the Spanish material and part of a team of eight Latin-American countries who train in Pediatric Palliative Care. St. Jude's Research Hospital. Memphis, TN, USA. 2014-Present.
- Director of medical relief efforts in the coastal disaster zone in Ecuador following the April 2016 earthquake —2016-2017
- Co-Director of *The Adapt Project*, a global nonprofit that empowers individuals to sustain continued advances in the care of severe child illness with the promise of decreasing of under-five child mortality through the development of efficient access to information and the reinforcement of training, research, and clinical care delivery focused on global equality in the care of life threatening pediatric disease—2011-Present
- Vice Dean of the School of Medicine, Universidad San Francisco de Quito, School of Medicine—2001-2003
- Medical Director of the University Medical Clinic, Universidad San Francisco de Quito—2000-2003
- Representative for the Universidad San Francisco de Quito for the International Initiative of Mental Health Leadership (IMHL) —2007-2012
- Founder and vice president of the non-profit organization Fundación Azulado, whose mission is to educate and train children and adults in order to prevent child abuse—2013-Present
- Director and chief responsible of the first national accreditation of the School of Medicine of Universidad San Francisco de Quito—2015-2016. USFQ's School of Medicine was ranked as the best school of medicine nationally.
- Director of the Mental Health Department at the Universidad San Francisco de Quito, School of Medicine—2000-Present
- Founder and chief of medical development of CNN: MedPal, an autodidactic cellular application that instructs healthcare professionals how to apply pediatric palliative care to children with already diagnosed conditions—2017-present

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HONORS, AWARDS, AND APPOINTMENTS:

- 1992: Salutatorian of Universidad Central's Medical School graduating class of 1992 (class of 467 students)
- 2001: Young researcher award ALAT (Asociación Latinoamericana de Tórax)
- 2009: Appointed as lecturer at the Mental Health Corporations of America
- 2012: Designated as one of the "Three women of the year" by Fucsia magazine
- 2015: Certificate of Award Developing Countries Scholarship AAHPM (American Association of Hospice and Palliative Medicine)
- 2015: Appointed director of the APLS (Advanced Pediatric Life Support) program of Ecuador
- 2013-2016: Founder, director, and in-country coordinator of the Johns Hopkins-Universidad San Francisco de Quito *Pediatric Critical Care Laude* Fellowship Certificate Program
- 2016: Awarded £15,000 grant from the AMA Foundation of Spain to develop a mobile application geared towards health care professionals in low resource settings to teach them how to apply pediatric palliative care (PPC) at primary care.
- 2016: Initiated into the Ecuadorian Academy of Medicine (Academia Ecuatoriana de la Medicina), Ecuador's oldest and most prestigious medical organization in Ecuador; only four female doctors have ever been welcomed into the academy.
- 2017: 2017 Martha Bushore-Fallis APLS Award Winner: Awarded by the Advanced Pediatric Life Support division of the American Academy of Pediatrics, this prestigious award recognizes an individual who has helped to further the goal of early recognition and stabilization of children with life-threatening conditions through the auspices of the APLS program. Recipients of this award have demonstrated an exceptional commitment to and advancement of the goals of APLS through the innovation of a new procedure or equipment, development of a new educational methodology, advancing legislation in support of the life threatened child, and/or teaching APLS in underserved communities (either nationally or internationally).

CURRENT GRANTS

- USFQ Collaboration Grant (10,000 USD -2015): PICU-MIC: Integrated Model of Care in Pediatric Intensive Care Units in Centers around the World.
- AMA Foundation (£15,000 – 2016): Development of a mobile application: CNN: MedPal (in Spanish: "cuidemos nuestros niños" – *let's take care of our children*), intended to provide self-instruction in Pediatric Palliative Care for health providers in primary care.

PROFESSIONAL MEMBERSHIPS:

- Member of the Ecuadorian Academy of Medicine (Academia Ecuatoriana de la Medicina)
- Member of the American Academy of Pediatrics
- Member of the American Academy of Hospice and Palliative Care
- Member of the American Thoracic Society
- Sociedad de Medicina de Cuidados Críticos (Society of Critical Care Medicine)
- Appointed to the Scientific Advisory Committee-Interamerican Institute for Global Change Research, 2013-2016

PERSONAL STATEMENT:

I am currently the Dean of the School of Medicine of Universidad San Francisco de Quito (USFQ), the director of Critical Areas and of the Mental Health Department of USFQ, a full-time professor of Critical Care Medicine and Behavioral Sciences, an attending at the Hospital de los Valle's PICU, and a researcher. My own education has centered on critical care medicine, mental health, palliative care, and pediatric intensive care, and these fields continue to inspire much of my work today. Among other distinctions, I was appointed the first female Dean of the School of Medicine of USFQ and have had the honor to become the first Latin-American to be licensed as an instructor in the program "First Aid in Mental Health", an evidence-based program that focus on inclusion, crisis identification, and recovery for mental illness and I am also de director of the Advanced Pediatric Life Support program in Ecuador. Additionally, I was awarded a prestigious and highly competitive scholarship to attend the AAHPM (American Association of Hospice and Palliative Medicine) conference about palliative care in developing countries. These experiences combined with my continued professional development through partnerships with various academic institutes around the world as well as the local community continue to provide me with enriching opportunities to mobilize my passions for human rights, bioethics, pediatric care, and palliative medicine, with a special focus on medical access among marginalized peoples across the global south.

My diverse professional experiences have also helped me to deepen my expertise in my areas of interest. To begin with, during the last several years I have worked with Fundación Azulado (an NGO that aims to eliminate child abuse), The Adapt Project (a global health equality NGO aimed at reducing under 5 mortality and morbidity), and the International Initiative of Mental Health Leadership; these experiences have provided me with the opportunity to implement prevention programs of community-based mental health in which inclusion and ethics of care have been cornerstones for programmatic success. Similarly, I have integrated palliative medicine and mental health care into the critical care units in which I have worked throughout my career. Combining mental health and palliative attention into an integrated model of care that takes into account the spectrum of dying to recovery for critically ill children has become one of my greatest professional passions; through such models, I seek to provide holistic care in low resource settings around the world. My experiences in palliative care medicine and mental health leadership were essential tools for my success as the director of medical interventions in the coastal disaster zone in Ecuador following the April 2016 earthquake. During this time, I became immersed in the intricacies of emergency medicine and disaster relief. To respond to this tragedy, I designed an interdisciplinary model of integrated care in order to relieve suffering, prevent disease, abuse, and psychological distress, and support the reconstruction of the affected provinces in Ecuador.

Such experiences have inspired much of my current research about integrated models of care and end-of-life decision making in ICU's, global pediatric and palliative care practices and inequalities, the efficacy of health information distribution and cutting-edge health technology, and the effectiveness of child abuse prevention programs. In my work on ICU and PICU's. one of the most important aspects of my work is devoted to studying and implementing culturally-tailored, ethical practices into critical care strategies. Within these and all of my other projects, I work towards advancing global access to palliative care because it is an inalienable human right, although most countries lack the resources to provide such care to its citizens.

Through my diverse training, breadth of research and professional opportunities, I have gained experience and expertise in a variety of medical disciplines as well as bioethics. My ultimate personal, professional, and academic goal is to ensure that the ethical dimensions of medicine and their application to marginalized peoples keep pace with the rapid development of health technology and medical innovations.

CONTRIBUTIONS TO CONTINUING MEDICAL EDUCATION:

-APLS

During the past two years 229 health professionals have been trained, increasing national capacity by almost 600%.

- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, May 2015-Session I
- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, May 2015-Session II
- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, November 2015
- Advanced Pediatric Life Support; Galapagos, Ecuador; Instructor, director, and local program founder, March 2016
- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, October 2016
- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, March 2017
- Advanced Pediatric Life Support; Quito, Ecuador; Instructor, director, and local program founder, February 2018

-Pediatric, Perinatal, and Neonatal Palliative Care

- “*Cuidemos Nuestros Niños*,” programa instruccional en cuidados paliativos neonatales y perinatales; directora, instructora, capacitadora de taller y fundadora del programa; Hospital Gineco Obstétrico de Nueva Aurora Luz Elena Arismendi—personal interdisciplinario de la Unidad de Cuidados Intensivos Neonatales; noviembre 2017
- “*Cuidemos Nuestros Niños*,” programa instruccional en cuidados paliativos neonatales; directora, instructora, capacitadora de taller y fundadora del programa; Universidad San Francisco de Quito/Hospital de los Valles—estudiantes de posgrado de la especialización en neonatología; noviembre 2017
- “*Cuidemos Nuestros Niños*” Instructional program in pediatric palliative care; Director, instructor, lecturer, simulation trainer, and program founder; March 2017
- EPEC (Education in Palliative and End of Life Care (EPEC)- Latin American Pediatrics; 40 hours; instructor—September 2015. Uruguay.
- Introducing Pediatric Palliative Care for Oncology Teams. This course was held at St. Jude Children’s research hospital by the EPEC Latin American team on June 8-9 2017. Invited to train teams who collaborate with St. Jude in Pediatric Palliative Care.

-Pediatric Critical Care, Intensive Care, and Emergency Medicine

- Emergency and Pediatric Intensive Care Program—Laude; Quito, Ecuador; 1,200 hour specialized program; trainer, instructor, and founder—September 2013-August 2014. Hospital de los Valles.
- Emergency and Pediatric Intensive Care Program—Laude; Quito, Ecuador; 1,200 hour specialized program; trainer, instructor, and founder—September 2014-August 2015. Hospital General de las Fuerzas Armadas and the Hospital Metropolitano.
- Emergency Response in Pediatrics at the first and second level of care. Yaruquí Area 2015.
- II International course on the pediatric airway; Quito, Ecuador; 32 hour specialized course; Director and instructor; May 2013-January 2014

- Congreso XIX Ecuatoriano de Pediatría-Sociedad Ecuatoriana de Pediatría de Pichincha (XIX Ecuadorian Congress of Pediatrics-Ecuadorian Society of Pediatrics of Pichincha); Speaker and conference attendee; Conference title: “*Building Partnerships*,” March 2017

-E-Learning

- International Association of Medical Science Educators-1 hour, online presentation in the Fall 2017 IAMSE Web Seminar Series: Evolution and Revolution in Medical Education—Global Challenges and Solution in Health Professions Education: “*Lessons from the Design and Implementation of a Pediatric Critical Care and Emergency Medicine Training Program in a Low Resource Country*”—October 2017
- E-Learning workshop and clinical simulation to reinforce health teams’ competency in the management of pediatric respiratory infections and management of pediatric total pain; Quito, Ecuador; 128 hour specialized course; Instructor—August 2016-December 2016
- E-Learning workshop and clinical simulation to reinforce health teams’ competency in the management of pediatric respiratory infections, and management of pediatric total pain; Quito, Ecuador; 128 hour specialized course; Instructor—May 2016-August 2016
- EPEC-Latam. Training in End of Life and Pediatric Palliative Care for Latin America, co-editor, 2015.

-Medical Pedagogical Capacity Building

- Basic pedagogical training program of instructors in medical simulation; Quito, Ecuador; 40 hour specialized course; Instructor—September 2013-November 2013
- Simulation basics course; Quito, Ecuador; 18 hour specialized course; Instructor; September 2016
- Advanced pedagogical training program of instructors in medical simulation; Quito, Ecuador; 40 hour specialized course; Instructor—February 2014-May 2014
- Universidad San Francisco de Quito medical curriculum design; Quito, Ecuador; 80 hour workshop; Director and Instructor. November 2014-May 2015
- II International course on the pediatric airway; Quito, Ecuador; 32 hour specialized course; instructor; May 2013-January 2014
- Level I Training Mediation Intervention for Sensitizing Caregivers; Tampa, USA; 32 hour specialized program; participant; January 2016

ONGOING RESEARCH PROJECTS:

- I. Grunauer, M., Eguez, D., Amery, J., Meiring, M., & Mikesell, C. (2017). *Development of a Mobile Phone Platform Oriented towards Health Care Professionals and Care Takers of Children with Special Palliative Care Needs*. Ongoing project.
 - Awarded £15,000 grant from the AMA Foundation of Spain to develop a mobile application geared towards health care professionals in low resource settings to teach them how to apply pediatric palliative care (PPC) to children with conditions that fit into the Association of Children’s Palliative Care (ACT) categories for children requiring PPC. Consistent with decades of literature, this application has a holistic focus on relieving patients’ “Total Pain” and therefore has functions which focus on teaching health care professionals how to relieve the physical, psychological, social, cultural, and spiritual suffering associated with their conditions. Responding to the needs of professionals in such contexts, the application also teaches doctors how to properly dose, convert, and prescribe medications that are essential to PPC like morphine and other opioids.

2. Grunauer, M., Cordero-Reyes, A., Mikesell, C. (2016). *Model of Integrated Care in Pediatric Intensive Care Units in Centers Around the World-PICU-MIC*. Ongoing project.
 - PICU MIC seeks to perform a global analysis of the models of care utilized in an international consortium of PICUs of different socio-economic settings from four continents. These findings will reveal the international differences between PICU models of care, gaps in PICU resources, and the degree to which different centers have already integrated elements of pediatric palliative care into their units. The multi-institutional group formed through PICU MIC will continue to study practices guiding PICUs around the world after the conclusion of this initial study.

3. Grunauer, M., Endara, P., Jervis, L., Mikesell, C., & Mikesell, C. (2016). *Efficiency and efficacy differences in methodologies for health information dissemination in an earthquake disaster zone in Ecuador*. Ongoing project.
 - The 7.9 magnitude earthquake that struck Ecuador's coast in April 2016 left nearly 700 people dead, injured 30,000 more, and caused billions of dollars in damages. A few months after the earthquake, 10,000 earthquake refugees continued to reside in shelters administered by the Ecuadorian government. This study sought to discover the most effective methodology for disseminating health information to affected populations in order to maximize the responsible use of resources dedicated to health promotion and prevention in the disaster zone.

4. Grunauer, M., Mikesell, C. (2016). *The Spectrum of Practices, Resources, Goals, and Challenges in Palliative Medicine across the Global South: A Qualitative Study*. Ongoing project.
 - This qualitative analysis of electronic communications between a group of palliative care specialists from under-resourced countries focuses on understanding the unique self-care practices and needs of doctors across the global south.

5. Grunauer, M., Terán, E., Endara, P., Quishpe, E., Bahamonde, M., Zia, A., Scarpino, S.V., McLaughlin, M, Finette B (2016). *Evaluation, impact and implementation of the MEDSINC platform in Ecuador*. Ongoing project.
 - We tested MEDSINC, a mobile application that screens and guides the intervention of the most common illness encountered at the emergency rooms or health centers in children less than 5 years of age. We have tested MEDSINC in four provinces of Ecuador. We continue analyzing the data of those studies.

6. Grunauer, M., Mikesell, C., & Guillemot, J. (2017). *Dying in Ecuador Today – An Academic Research Project*. Ongoing project.
 - This multidisciplinary, multi-departmental, multiyear project seeks to understand the qualitative experiences of death of Ecuadorians, from birth to old age. The first year of this project involves a series of qualitative studies in order to investigate 1.) how the pressures to comply with the WHO's Millennium Development Goals may influence and shape the quality and experience of life and death for young children in Ecuador, 2.) how Ecuadorian families understand, react to, and cope with the death of their children under different circumstances (i.e. accidental death, short-term illness, long-term illness, etc.), and 3.) how Ecuadorian families develop resilience in the face of child death. It is the desire of the researchers to use this information to identify service gaps and dysfunction, develop pertinent local clinical guidelines, and inform public health policy in order to

support the achievement of the Millennium Development Goals while simultaneously improving the quality of life and death for Ecuadorian children.

7. Grunauer, M., Mikesell, C., & Cisneros-Heredia, D. *Brief Report: A case study of the impact of Ascaris lumbricoides on local and global health*. Ongoing project.
 - Ascariasis results from infection by *Ascaris lumbricoides*, the largest and most common Soil-Transmitted Helminth that infects humans. This report describes two cases of Ascariasis in the Hospital de los Valle's PICU and describes the implications of Ascariasis infections on global health initiatives in areas endemic to *A. lumbricoides*.

PUBLISHED RESEARCH:

1. Grunauer, M., Takagaki, T.Y., & Carvalho, C.R.R. (1994). *Monoclonal antibody CA 72-4 as a tumor marker in lung carcinoma* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1994; (149); (Suppl): (A178).
2. Amato, M.B.P., Barbas, C.S.V., Meyer, E.C., Grunauer, M., Magaldi, R.B., & Carvalho, C.R.R. (1995). *Limitations of the P-V Curve in Detecting Alveolar Hyperinflation during Mechanical Ventilation in ARDS* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1995; (151) (Suppl.); (A432).
3. Amato, M.B.P., Barbas, C.S.V., Meyer, E.C., Grunauer, M., Magaldi, R.B., Carvalho, C.R.R. (1995). *Setting the "Best PEEP" in ARDS: Limitations of Choosing the PEEP according to the "Best Compliance"* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1995; (151) (Suppl.); (A550).
4. Barbas, C.S.V., Amato, M.B.P., Grunauer, M., Hoeltz, C., Medeiros, D., Saldiva, P.H.N., & Zin, W.A. (1995). *Changes in Static Compliance produced by Increasing Inflation Volumes Can Reveal Insufficient PEEP in ARDS* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1995; (151); (Suppl.): (A550).
5. Carvalho, C.R.R., Grunauer, M., Capelozzi, V.L., Kairalla, R.A., Deheinzelin, D., Amato, M.B.P., & Saldiva, P.H.N. (1995). *Correlation between Physiological Measurements and Morphometry in Lung Biopsy of Patients with Idiopathic Pulmonary Fibrosis* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1995; (151); (Suppl): (A693).
6. Oliveira-Vianna, E.S., Grunauer, M., Cukier, A., & Barbas, C.S.V. (1995). *Acupuncture in the treatment of chronic asthma* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1995; (151); (Suppl): (A382).
7. Boueri, F.M.V., Kairalla, R.A., Deheinzelin, D., Grunauer, M., & Carvalho, C.R.R. (1995). *HRCT in sarcoidosis: Inflammation versus fibrosis and response to treatment* [Abstract]. *World Association of Sarcoidosis and Other Granulomatous Disorders and British Society for Allergy and Clinical Immunology*: 1995, 147.
8. Amato, M.B.P., Barbas, C.S.V., Pastore, L., Grunauer, M., Magaldi, R.B., & Carvalho, C.R.R. (1996). *Minimizing Barotrauma in ARDS: Protective Effects of PEEP and the Hazards of Driving and Plateau Pressures* [Abstract]. *American Journal of Respiratory and Critical Care Medicine*: 1996; (153); (Suppl): (A375).

9. Grunauer M., Barbas, C.S.V., Amato, M.B.P., Barbas Filho, J.V., & Carvalho, C.R.R. (1996). *Dynamic P-V Loop Can Reveal Tidal Volume Over-Distention when "Optimal PEEP" is applied in ARDS Patients.* [Abstract]. American Journal of Respiratory and Critical Care Medicine 1996; (153); (Suppl): (A531).
10. Barbas, C.S.V., Amato, M.B.P., Grunauer, M., Meyer, E.C., & Carvalho, C.R.R. (1996). *Effects of Optimal PEEP on Respiratory Mechanics in ARDS Patients: Recruitment versus Overdistension* [Abstract]. American Journal of Respiratory and Critical Care Medicine: 1996; (153); (Suppl): (A375).
11. Grunauer M., Amato, M.B.P., Barbas, C.S.V., Capelozzi, V.L., Kubo, S.K., Poggetti, R.S., Dolhnikoff, M., & Carvalho, C.R.R. (1997). *The lower Inflection Point of the Static P-V Curve (Pflex) may not predict Complete Alveolar Opening in Normal Lungs* [Abstract]. American Journal of Respiratory and Critical Care Medicine: 1997; (155); (Suppl): (A505).
12. Meyer, E.C., Barbas, C.S.V.; Grunauer, M., Caramenz, M.P., Souza, R., Carvalho, C.R.R., & Amato, M.B.P. (1998). *PEEP at P Flex Cannot Guarantee a Fully Open Lung After A High-Pressure Recruiting Maneuver In ARDS Patients.* [Abstract]. American Journal of Respiratory and Critical Care Medicine: 1998; 157; (Suppl.): (A694).
13. Carvalho, C.R.R., Grunauer, M., & Schettino, G.P.P. (1998). *Lung disease induced by parasites.* [Review Article]. Clinical Pulmonary Medicine: 5 (2): 93-103.
14. Meyer, E.C., Gaudencio, A.M.A.S., Salge, J.M., Grunauer, M., Carvalho, C.R.R., Amato M.B.P., & Barbas, C.S.V. (1999). *Pressure-volume curves in ARDS: Comparison of two methods* [Abstract]. American Journal of Respiratory and Critical Care Medicine: 1999, (159); (Suppl.): (A75).
15. Meyer, E.C., Barbas, C.S.V., Grunauer, M., Caramenz, M.P., Souza, R., Carvalho, C.R.R., & Amato, M.B.P. (1999). *Finding the Best PEEP in ARDS patients: Influence of Tidal Volume and lung recruitment in the estimation of the best compliance* [Abstract]. American Journal of Respiratory and Critical Care Medicine: 1999, (159); (Suppl.): (A76).
16. Grunauer M., Barbas, C.S.V., Meyer, E.C., Alzugaray, P.F., Carvalho, C.R.R., & Amato, M.B.P. (1999). *Tidal recruitment misinterpreted as viscoelastic dissipation in ARDS patients.* American Journal of Respiratory and Critical Care Medicine: 1999, (159); (Suppl.): (A76).
17. Briones Claudett, K.H., Reck C., De la Cerna Pérez, Briones, M., Romero A., Esquinas, A., & Grunauer, M. (2003). *Ventilación Mecánica No invasiva en pacientes con cáncer e insuficiencia respiratoria aguda.* Rev.Iberoamérica VMNI 2003; 1(35), (41).
18. Briones Claudett, K.H., Grunauer Andrade, M., & Briones Claudett, M.H. (2006). *Insuficiencia Respiratoria Aguda en el Paciente Oncológico. Tratado de Ventilación Mecánica No Invasiva. Práctica Clínica y Metodología* (498-500). Madrid, Spain: Aula Médica.
19. Briones Claudett, K.H., Grunauer Andrade, M., & Briones Claudett, M.H. (2006). *Ventilación Mecánica No Invasiva al final de la Vida. Tratado de Ventilación Mecánica No Invasiva. Práctica Clínica y Metodología* (498-500). Madrid, Spain: Aula Médica.
20. Briones Claudett, M.H., Chung, S., Wong, M., Grunauer Andrade, M., Cruz, C., Esquinas, A., González Díaz, G. (2008). *Noninvasive mechanical ventilation in patients with chronic obstructive pulmonary*

disease and severe hypercapnic neurological deterioration in the emergency room. *European Journal of Emergency Medicine*:15 (3), (127-133).

21. Briones Claudett KH, Ramirez P, Contreras J, Camacho F, Wollmann P and Grunauer M. (2010). *Preliminary experience of the clinical and tomographic characteristics of patients with non-refractory acute respiratory insufficiency caused by H1N1 influenza, virus infection and disease intervention.* *Journal of Clinical Medicine and Research*: 2(7), 103-109. <http://www.academicjournals.org/jcmr>
22. Briones Claudett, K.H., Briones Claudett, M.H., Sang, C., Wong, M., Alajo, H., Grunauer Andrade, M., Cruz, C., Esquinas, A., & Gonzalez Diaz, G. (2010). *Noninvasive ventilation in relapse of acute respiratory failure outside ICU.* *Journal of Clinical Medicine and Research*, 2010; 2(3): 026-034. doi: 10.5897/JCMR12.024
23. Briones Claudett, K.H., Briones Claudett, M.H., Sang, C., Wong, M., Alajo, H., Grunauer Andrade, M., Cruz, C., Esquinas, A., & Gonzalez Diaz, G. (2010). *Noninvasive ventilation in relapse of acute respiratory failure outside ICU.* *The Internet Journal of Pulmonary Medicine*: 2(3), 026-034. http://www.ispub.com/journal/the_internet_journal_of_pulmonary_medicine/volume
24. Llano, M., Suárez Jaramillo, A., del Pozo, G., & Grunauer, M. (2011). PD2iCA as prognostic score of mortality in the critical care unit [Abstract]. *Critical Care Medicine*, 39 (12), 138. doi: 10.1097/01.ccm.0000408627.24229.88
25. Briones Claudett K., Del Castillo Lemos, C., Briones Claudett, M., & Grunauer Andrade, M. (2012). Ventilación Mecánica No Invasiva en Encefalopatía Hipercapnica (Coma Hipercapnico). *Principios de Ventilación Mecánica No invasiva en Medicina Crítica* (259-261). Madrid, Spain: BiblioMedica.
26. Briones Claudett K, Mantilla M, Llanos M, & Grunauer A. (2012). Ventilación Mecánica No Invasiva en Infección por Influenza A H1N1. *Principios de Ventilación Mecánica No invasiva en Medicina Crítica* (337-342). Madrid, Spain: BiblioMedica. Edición ISBN 978-9974-8279-9-9.
27. Briones Claudett, K.H., Briones Claudett, M.H., Chung Sang, A., Nuques, A., Soto, R., Grunauer Andrade, M., Córdova, M., Esquinas, A., & Gonzalez Diaz, G. (2013). *Non-invasive mechanical ventilation with average volume assured pressure support (AVAPS) in patients with chronic obstructive pulmonary disease and hypercapnic encephalopathy: prospective interventional match-controlled study.* *BMP Medicine*, 13(12), 1-7.
28. Grunauer, M., Schrock, D., Fabara, E., Jimenez, G., Miller, A., Lai, Z., Kilbourne, A., & McInnis, M.G. (2014). *Tablet-Based Screening of Depressive Symptoms in Quito, Ecuador: Efficiency in Primary Care.* *International Journal of Family Medicine*; 1-7. doi:10.1155/2014/845397.
29. Grunauer, M., Mgelea, E., Fabara, S., Campos Miño, S., & Fussell, M. (2014). Modified Delphi Assessment of Need-Based Learning Priorities for Capacity Building in Pediatric Acute Care in Ecuador: A Comparison with Tanzania [Abstract]. *Pediatric Critical Care Medicine*, 15(4), 636.
30. Karam, O., Demaret, P., Shefler, A., Leteurtre, S., Spinella, P.C., Stanworth, S. J., Tucci, M., Plasma TV nvestigators. (2015). *Indications and effects of plasma transfusions in critically ill children.* *American Journal of Respiratory and Critical Care Medicine*, 2015, 191: (12); 1395-1402.
31. Quiñones, E., Donoso, F., Ugazzi, M., Grunauer, M., & Noviski, N. (2015). *Actualización en Emergencias Pediátricas [Update on Pediatric Emergencies]*. Quito, Ecuador: Imprenta Noción.

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