



Journal Club - Aggiornamenti in Geriatria

14 Dicembre 2018

Responsabilità sociale dell'organizzazione sanitaria in una società che cambia

Marco Trabucchi



- **Lo scenario del cambiamento e le grandi sfide**
- **Cosa può fare l'organizzazione sanitaria per costruire una collettività più coesa**
- **Cosa può fare l'organizzazione sanitaria per difendersi**
- **Politica e organizzazione sanitaria**



**Ruolo incerto del sistema sanitario:
fino a dove si deve spingere il compito di sostituzione
delle inadeguatezze della società civile?
No alla chiusura, si alla capacità di adeguamento.**



**"Autorizzati a pensare.
Visione e ragione per il bene comune"**

(Mons. Mario Delpini)



Lo scenario del cambiamento

- **un sistema educativo debole o assente**
- **la fine (temporanea?) della grandi ideologie**
- **uno vale uno**
- **antiscientismo sbandierato (terra piatta, scie chimiche e, inoltre, omeopatia, vaccini, stamina, Xylella...)**
- **un progresso troppo veloce per le capacità di elaborazione del singolo, al quale risponde con lo scetticismo (o la negazione radicale).**



Alcune sfide nelle quali si valorizza il ruolo del sistema sanitario rispetto alla collettività (Amazon, intelligenza artificiale, crisi demografica, crisi scientifica, solitudine...).

1/11/2018 6:30AM

Is Amazon Going to Rule the World?

Amazon wants to deliver everything you want to your doorstep, anywhere in the world. But the e-commerce giant faces several challenges in its pursuit of a global empire. WSJ's Karan Deep Singh breaks down the basics with the help of an Amazon delivery box.



12 Dec 2018

The New York Times International Edition

Nona Willis Aronowitz



My sister Kim faces this irony, too. Last year, just before her 60th birthday, she found out she had breast cancer. The chemo wreaked havoc on her immune system, and she took a seven-month leave from work. Afraid of making her health worse during a historic flu season, she barely left the house and started ordering the most prosaic products on Amazon Prime in bulk: tissues, a fleece jacket, a lemon squeezer, dinner forks, deodorant. As her cancer treatment ramped up, the red badges signaled other items: wig caps, pill organizer, the Book of Common Prayer, a St. Peregrine patron saint of cancer medal. When her chemo resulted in a raging case of hemorrhoids, she was grateful not to have to ask our brother, who was caring for her, to fetch her sitz bath salts and witch hazel pads. After her reduced disability pay began to catch up with her, she used Amazon for the discounts. She once ordered 27 rolls of toilet paper for just \$16.97.



... oppure la desertificazione delle città indotta da Amazon avrà conseguenze rilevanti sulla salute fisica e psichica dei più fragili?

The
Economist

5/12/2018
Naval gazing—Russia eyeballs Ukraine

Edit genes, but not like this

Technology Quarterly: Zero carbon

Our books of the year

DECEMBER 1ST–7TH 2018



Chip wars

America, China and silicon supremacy



1/19120



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Albania.....ALL900 Croatia.....HRK48 France.....€7.50 Ireland.....€7.50 Latvia.....€7.50 Netherlands.....€7.50 Romania.....RON29 Spain.....€7.50
Australia.....€7.50 Cyprus.....€7.50 Germany.....€7.50 Israel.....NIS42.60 Lebanon.....LC13,900 Nigeria.....Nairi1,700 Saudi Arabia.....Rials50 Sweden.....SKR65
Bahamas.....Dm-rs4.50 Czech Rep.....CZK199 Gibraltar.....GIPs.99 Italy.....€7.50 Lithuania.....€7.50 Norway.....Nkr66 Serbia.....RSD720 Switzerland.....CHF10
Belgium.....€7.50 Denmark.....DKr53 Greece.....€7.50 Kazakhstan.....KZT2,800 Luxembourg.....€7.50 Poland.....PLN29 Slovakia.....€7.50 Turkey.....TL18
Bosnia.....BAM16 Belarus.....€7.50 Hungary.....HUF1,170 Korea.....KSh190 Malta.....€7.50 Portugal CONT.....€7.50 Slovenia.....€7.50 USA.....Dollars45
Bulgaria.....BGN13 Finland.....€7.50 Iceland.....Krc660 Kuwait.....Dinars3.60 Montenegro.....€7.50 Qatar.....Rials45 South Africa.....R70.00 UK.....£5.99

La grande rivista medica inglese BMJ ha pubblicato in questi giorni un dibattito del titolo: "L'intelligenza artificiale renderà obsoleto il mestiere del medico?".

Alcune osservazioni schematiche:

- 1. i problemi sociali corrono con una velocità impensabile; chi avrebbe potuto ipotizzare questo interrogativo solo un anno fa?**
- 2. la tecnologia occupa spazi sempre più rilevanti: per difendersi occorre pensare e progettare, non criticare con logiche passatiste;**
- 3. la medicina è forse l'area del sociale che vedrà più direttamente le conseguenze del progresso che si proiettano sulla vita di tutti i giorni. Il medico e il suo ruolo saranno discussi senza pietà;**
- 4. nel dibattito si è sostenuto che i pazienti avranno sempre bisogno dell'empatia del medico e di sentirsi compresi da una persona competente; è stato però risposto che le macchine saranno presto in grado di rispondere anche a questi bisogni;**
- 5. quando una macchina dovrà comunicare ad un umano che sta morendo, come potrà farlo in modo adeguato se non sa cosa significa il morire?**

Humanizing Artificial Intelligence

Humans in need want the best of what science and medicine have to offer. Particularly, in the setting of serious and chronic illnesses, patients in need want their physicians to be human beings who care, communicate clearly, and are compassionate and express empathy. As Peabody famously observed long ago, “One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient.”⁸ Bettering the ability of physicians to truly care for and express caring is the challenge for colleagues in computer science and medical informatics. Systems that augment the diagnostic and scientific task of treating disease are exciting and wonderful, but is it possible to invent and discover applications that can enhance the human abilities in clinicians to better engage in caring for the patient? This possibility would be a significant breakthrough. Many people are hopeful that it is just the sort of breakthrough that intelligent humans can achieve.

(S.T. Israni, A. Verghese, JAMA Published online December 10, 2018)

Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs

Varun Gulshan, PhD; Lily Peng, MD, PhD; Marc Coram, PhD; Martin C. Stumpe, PhD; Derek Wu, BS; Arunachalam Narayanaswamy, PhD; Subhashini Venugopalan, MS; Kasumi Widner, MS; Tom Madams, MEng; Jorge Cuadros, OD, PhD; Ramasamy Kim, OD, DNB; Rajiv Raman, MS, DNB; Philip C. Nelson, BS; Jessica L. Mega, MD, MPH; Dale R. Webster, PhD

IMPORTANCE Deep learning is a family of computational methods that allow an algorithm to program itself by learning from a large set of examples that demonstrate the desired behavior, removing the need to specify rules explicitly. Application of these methods to medical imaging requires further assessment and validation.

OBJECTIVE To apply deep learning to create an algorithm for automated detection of diabetic retinopathy and diabetic macular edema in retinal fundus photographs.

DESIGN AND SETTING A specific type of neural network optimized for image classification called a deep convolutional neural network was trained using a retrospective development data set of 128 175 retinal images, which were graded 3 to 7 times for diabetic retinopathy, diabetic macular edema, and image gradability by a panel of 54 US licensed ophthalmologists and ophthalmology senior residents between May and December 2015. The resultant algorithm was validated in January and February 2016 using 2 separate data sets, both graded by at least 7 US board-certified ophthalmologists with high intragrader consistency.

EXPOSURE Deep learning-trained algorithm.

MAIN OUTCOMES AND MEASURES The sensitivity and specificity of the algorithm for detecting referable diabetic retinopathy (RDR), defined as moderate and worse diabetic retinopathy, referable diabetic macular edema, or both, were generated based on the reference standard of the majority decision of the ophthalmologist panel. The algorithm was evaluated at 2 operating points selected from the development set, one selected for high specificity and another for high sensitivity.

JAMA. 2016;316(22):2402-2410. doi:10.1001/jama.2016.17216

Segue...

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RESULTS The EyePACS-1 data set consisted of 9963 images from 4997 patients (mean age, 54.4 years; 62.2% women; prevalence of RDR, 683/8878 fully gradable images [7.8%]); the Messidor-2 data set had 1748 images from 874 patients (mean age, 57.6 years; 42.6% women; prevalence of RDR, 254/1745 fully gradable images [14.6%]). For detecting RDR, the algorithm had an area under the receiver operating curve of 0.991 (95% CI, 0.988-0.993) for EyePACS-1 and 0.990 (95% CI, 0.986-0.995) for Messidor-2. Using the first operating cut point with high specificity, for EyePACS-1, the sensitivity was 90.3% (95% CI, 87.5%-92.7%) and the specificity was 98.1% (95% CI, 97.8%-98.5%). For Messidor-2, the sensitivity was 87.0% (95% CI, 81.1%-91.0%) and the specificity was 98.5% (95% CI, 97.7%-99.1%). Using a second operating point with high sensitivity in the development set, for EyePACS-1 the sensitivity was 97.5% and specificity was 93.4% and for Messidor-2 the sensitivity was 96.1% and specificity was 93.9%.

CONCLUSIONS AND RELEVANCE In this evaluation of retinal fundus photographs from adults with diabetes, an algorithm based on deep machine learning had high sensitivity and specificity for detecting referable diabetic retinopathy. Further research is necessary to determine the feasibility of applying this algorithm in the clinical setting and to determine whether use of the algorithm could lead to improved care and outcomes compared with current ophthalmologic assessment.

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Published online November 29, 2016. Corrected on December 13, 2016.



**Nel campo dell'IA la medicina potrà
dire molto al resto della società.
Un compito davvero difficile...**



The Washington Post
Democracy Dies in Darkness

Health & Science

U.S. life expectancy declines again, a dismal trend not seen since World War I

By Lenny Bernstein
November 29, 2018



**Cosa può fare la medicina, come sapere
e come prassi, per combattere la crisi
demografica?**

The New York Times

11 THINGS WE'D REALLY LIKE TO KNOW

Will We Ever Cure Alzheimer's?

Few drugs have been approved for treatment of this dementia, and none works very well. It has become one of the most intractable problems in medicine.

By Pam Belluck
November 19, 2018



Combating Chronic Disease through the Social Determinants of Health

Reducing the impact of chronic diseases will require payers and providers to get to the root causes of long-term illness, many of which are attributable to the social determinants of health.



By Jennifer Bresnick
November 30, 2018



**Nemica solitudine: un futuro che ci attende?
da "Hikikomori" a "Kodokushi":
l'esempio drammatico del Giappone.**

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The most wonderful time of the year

The Lancet Psychiatry

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The holiday season is almost upon us: a time of year that, for most people, brings happiness. Worries forgotten, many curl up in front of the TV to watch *It's a Wonderful Life* (or the arguably superior *Muppet Christmas Carol*), surround themselves with family and food, and head out for fireworks to see in the New Year. However, for others, the holiday season can be the loneliest—rather than the most wonderful—time of year, amplified by societal expectations of happiness and company.



Disturbo da Accumulo o sindrome di Diogene

I materiali accumulati apparentemente senza senso rappresentano un sostituto della compagnia di altre persone (Norberg e Grisham, 2018).

La medicina deve essere neutrale nei riguardi del singolo paziente, ma deve prendere posizione con determinazione sulle grandi tematiche

- **ruolo della vita sociale rispetto alla salute**
- **ruolo delle scelte individuali e responsabilità educative**
- **ruolo dei servizi sanitari**



**"La competenza salverà il mondo" vs l'antiintellettualismo.
Ma il sistema sanitario ha un'adeguata credibilità?
La cultura e la prassi clinica sono vissute come tirannie
perpetrate da una classe privilegiata, che soffoca i diritti e
va biasimata perchè corrotta.
Come cambiare questo trend gravemente dannoso per
l'organizzazione sociale?**



Nel 1885, 100.000 persone scesero in piazza a Leicester per protestare contro l'obbligatorietà del vaccino contro il vaiolo.

La cultura no vax fu assorbita dalla classe operaia inglese di allora come protesta di classe contro i padroni.



**Come invertire questa visione che sembra
diffondersi anche nel nostro tempo?
Aspettare che passi la "nottata" o impegnarsi
con coraggio e cultura?**

Come proteggere la scienza ai tempi dei social media e della fake news?

- **provenienza**
- **engagement**
- **trasparenza**
- **narrativa**
- **reputation**

Addressing Health-Related Misinformation on Social Media

The ubiquitous social media landscape has created an information ecosystem populated by a cacophony of opinion, true and false information, and an unprecedented quantity of data on many topics. Policy makers and the social media industry grapple with the challenge of curbing fake news, disinformation, and hate speech; and the field of medicine is similarly confronted with the spread of false, inaccurate, or incomplete health information.¹

Wen-Ying Sylvia Chou, April Oh, William M. P. Klein.

JAMA Published online November 14, 2018



Anche la politica (la collettività) può impegnarsi per migliorare la condizione dei servizi sanitari.

Politics and Health Care

Donald M. Berwick, MD, MPP

JAMA October 9, 2018 Volume 320, Number 14 **1437**

- **money**
- **doctrine**
- **science and institutions**
- **solidarity**

un ruolo innegabile, che deve essere valorizzato dal sistema sanitario, senza l'illusione di poterne fare a meno.



Physicians who want politics out of health care are going to be disappointed. If they value the principles to which they pledged as healers, then they ignore politics at their peril and their patients'. The sidelines are safe places for neither.

Donald M. Berwick, MD, MPP

JAMA October 9, 2018 Volume 320, Number 14 **1437**



Il ruolo di GRG e AIP come esempio di impegno per una medicina del nostro tempo.



La scienza diverrà una prosecuzione della politica con altri mezzi?