



LETTER TO THE EDITOR

Can we use national registries to predict discharge reports?: An example with the ENVIN and RETRAUCI registries



¿Podemos utilizar los registros nacionales para predecir el informe de alta?: ejemplo con los registros ENVIN y RETRAUCI

The fundamental idea of this paper is to provide an alternative for reducing the time dedicated to the tedious process of writing clinical reports while simultaneously generating added value.

Time is the most valuable asset we have, as it cannot be recovered. Therefore, it is essential to invest time in the best possible way. In modern medicine, with a heavy care burden, we spend a significant part of our time writing clinical reports and filling in databases.

However, we know that clinical reports per se do not harbor much value, and our 'administrative' work is filled with inefficiencies by entering the same parameters multiple times (e.g., patient admission dates in their medical history, RETRAUCI,¹ and ENVIN²). However, records generate value since we manage to group the information, facilitate statistical analysis, and consequently generate knowledge.

If the previous observation is correct, we should spend more time (being a scarce and finite good) on what brings more value, the registries. However, this would leave us with no time for clinical reports.

Currently, there are natural language models based on artificial intelligence (MLN). These models could help us save time in writing discharge reports, allowing us to spend time creating quality records in registries. Medical knowledge plays a significant role in the quality of the records as it serves as a verifier of the information entered in difficult-to-classify patients.

The fundamental idea is to introduce copious and quality information into the national registries, export a structured report from national registries, and from there 'predict' the discharge report through artificial intelligence using MLN.

What is proposed here is an inversion of medical activity. We propose that medical information shift its priorities and gradually prioritize filling out records - since this is where we condense the value - and from these records, we export a structured text on which we can apply natural language models to 'predict' the clinical report.

MLNs work with input information (structured report generated from registries), a determined algorithm, 'prompt' (which somehow establishes the prediction orders, exposed in supplementary data), to finally obtain a result, 'output' (in our case, the clinical report).

To optimize this process, we should work on the following aspects:

- A relatively stable and quality 'input': requires structured texts derived from registries. The quality would come from verifying the medical data entered and more granular records that better capture the medical reality. In this regard, work should be done on the 'integration' of large national records to enhance efficiency in data entry that allows a better linkage of data to the patient. Interoperability between registries would be a desirable goal.
- If we have a stable structured text, we can iteratively improve our 'prompt' (algorithm), so we would get an 'output' that was increasingly similar to the sought clinical report.

In this regard, we propose different examples in the supplementary data hybridizing information from RETRAUCI and ENVIN (supplementary data). This approach currently presents limitations that we present in supplementary data.

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Conflicts of interest

The authors declare that none have conflicts of interest.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.medine.2023.07.008>.

References

- Chico-Fernández M, Llopart-Pou JA, Guerrero-López F, Sánchez-Casado M, García-Sáez I, Mayor-García MD, et al. Epidemiology of severe trauma in Spain. Registry of trauma in the ICU (RETRAUCI). Pilot phase. Epidemiología del trauma grave en España. REgistro de TRAuma en UCI (RETRAUCI). Fase piloto. *Med Intensiva*. 2016;40(6):327–47, <http://dx.doi.org/10.1016/j.medin.2015.07.011>.
- Olaechea PM, Álvarez-Lerma F, Palomar M, Gimeno R, Gracia MP, Mas N, et al. Characteristics and outcomes of patients admitted to Spanish ICU: a prospective observational study from the ENVIN-HELICS registry (2006-2011). *Med Intensiva*. 2016;40(4):216–29, <http://dx.doi.org/10.1016/j.medin.2015.07.003>.

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The Patient Blood Management Coordinator, shall we position ourselves?



La figura del Coordinador de Patient Blood Management, ¿nos posicionamos?

Dear Editor:

Patient blood management (PBM), translated into Spanish as Gestión de la Sangre del Paciente (GSP), is a multidisciplinary strategy to preserve and optimize a patient's red blood cell mass, avoid unnecessary transfusions, and use the medical and surgical interventions available rationally according to the best available evidence. Therefore, PBM focuses on 3 pillars with over 100 procedures described: comprehensive management of anemia (detection and treatment), minimization of unnecessary or iatrogenic blood loss (medical-surgical hemostasis and blood conservation strategies), and optimization of physiological tolerance to anemia and rational transfusion practices (restrictive transfusion thresholds, optimization of hemodynamics, and oxygen consumption/transport).^{1,2}

The implementation of PBM is cost-effective and associated with a reduction of blood transfusions up to 39%, along with a lower mortality rate, and transfusion-related complications (length of stay, readmissions, rates of infection, and renal failure, among others).^{1,3,4} The advantages of PBM programs are so significant that the World Health Organization (WHO) and the Council of Europe recommend their implementation. However, the reality is that the adoption of these recommendations is very heterogeneous in our country.³ Additionally, blood components and blood products are becoming increasingly limited resources, and their inappropriate use goes against the altruistic spirit that surrounds blood donation in Spain.

Therefore, we believe that the creation of the role of PBM Coordinator in each hospital is a matter of civil and professional responsibility, similar to the already existing and functioning roles of coordinator of Antimicrobial Stewardship Programs (ASP) or the transplant coordinator, which is consistent with the existing national program of the Maturity Assessment Model in PBM (MAPBM).

In essence, this role would work on 2 fronts: providing training and clinical advice on PBM at hospital level.

It would involve a complex task including multiple medical and surgical specialties working together to optimize and rationalize the use of blood components and blood products in hospitalized patients, whether in hospital wards, emergency areas, and especially in critical care units, as we saw in a study published in *Medicina Intensiva* on transfusion practices being highly heterogeneous and subject to optimization, especially in chronic critically ill patients.⁵

Having this role taken over by an intensivist is a matter of attitude and commitment. Shall we position ourselves?

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References

- Althoff FC, Neb H, Herrmann E, Trentino KM, Vernich L, Füllnbach C, et al. Multimodal Patient Blood Management program based on a three-pillar strategy: A systematic review and meta-analysis. *Ann Surg*. 2019;269:794–804, <http://dx.doi.org/10.1097/SLA.0000000000003095>.
- Shander A, Hardy JF, Ozawa S, Farmer SL, Hofmann A, Frank SM, et al. A global definition of Patient Blood Management. *Anesth Analg*. 2022;135:476–88, <http://dx.doi.org/10.1213/ANE.0000000000005873>.
- Ripollés-Melchor J, Jericó-Alba C, Quintana-Díaz M, García-Erce JA. From blood saving programs to patient blood management and beyond. *Med Clin (Barc)*. 2018;151:368–73, <http://dx.doi.org/10.1016/j.medcli.2018.02.027>.
- Hof L, Choorapoikayil S, Meybohm P, Zacharowski K. Is a Patient Blood Management programme economically reasonable? *Curr Opin Anaesthesiol*. 2023;36:228–33, <http://dx.doi.org/10.1097/ACO.0000000000001230>.
- Quintana-Díaz M, Nanwani-Nanwani K, Marcos-Neira P, Serrano-Lázaro A, Juárez-Vela R, Andrés-Esteban EM. Epidemiología de la transfusión sanguínea en los Servicios de Medicina Intensiva en España: «Transfusion Day». *Med Intensiva*. 2022;46:123–9131, <http://dx.doi.org/10.1016/j.medin.2020.08.015>.

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