Pertinence of Telehealth in a Rush Conversion to Virtual Allergy Practice during the COVID-19 Outbreak

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Telephone consultation is one of the most basic forms of telehealth [1], which uses a wider range of information and communication technologies, enabling external companies and institutions to reach a multitude of users, paving the way to data collection and management interventions [2,3]. The Covid-19 pandemic has set forward an unexpected transition from in-person care to telehealth involving not only primary care but also medical specialties. In Spain, one of the hardest-hit countries in the world recorded cases of COVID-19, specialist care is provided predominantly by public hospitals via outpatient clinics [4]. Hence, we describe our experiences facing the challenging task to "turn into virtual" at the Allergy Department in a tertiary care referral hospital and a peripheral Outpatient facility in Tenerife, Spain, serving an area of 430,021 inhabitants.

Our daily routine electronic consultations -in use from April 2012- are text-based asynchronous, and store-and-forward bidirectionally, between a referring clinician and a specialist, allowing the prioritization of in-person visits according to the provided medical information [5], when unexpectedly, changes that would typically require months of planning ahead, have been condensed to go fully virtual in less than 48 hours from Saturday March 14th, when the national emergency and mandatory quarantine was declared in Spain. In expeditiously adopting telehealth, the *Servicio Canario de Salud* as the main local stakeholder, granted access through the Virtual Private Network (VPN) to the specialist medical staff to optimize the number of patients coming in [6]. The number of clinicians who physically staff the office has been sharply minimized (one physician and two nurses per day), while the

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rest of staff provide telehealth from their home. Also, the in-person care was limited to deal only with imperative proceedings (i.e. drug desensitization, administration of biologics and venom immunotherapy). A specific healthcare in-person protection circuit was developed -only one patient per waiting room- for patients to receive care while reducing the risk of exposure.

As time was our main concern, our telehealth practice was almost exclusively based in telephone visits and less than 5% of the patients were reached by WhatsApp, e-Mail and/or owned website. Concerning telephone consultations, clinicians went through scheduled appointments, taking triage decisions for face-to-face visits, and making a distinction among first-time referred users and those with a second in-patient visits. All telephone medical visits were immediately transcribed by the attending physician to the user´s electronic record. Although daily routine procedures have been drastically reduced (i.e. cutaneous and pulmonary function tests), the use of protocols including a problem-oriented medical diagnosis according to national guidelines and a corresponding electronic prescription allows deferred in-person visits for several weeks, lowering the risk of exposure [7]. To physicians´ surprise, telehealth accounting as a single medical intervention with patients remaining at home, has prevented in just five working days, 278 users (91.14%) from coming in (Figure 1). Likewise, telephone consultation succeeded in the prompt management of 56.25% (corresponding to 144 subjects) of previously scheduled second-visits -with 27.7% of them discharged from the Allergy Office- through a Consultant´s clinical follow up including the interpretation of lab test results to patients and the use of electronic prescription service, sending prescriptions and inspection visa forms to pharmacies before patients can be effectively reimbursed. Moreover, almost 37% of ordinary consultations on adverse drug reactions were virtually concluded or scheduled to subsequent *in vivo* proceedings -skin testing and/or drug challenging- within the following 3 months, transforming telehealth as the mainstay to plan further drug-allergy first-consultations in our practice.

The patient response in general terms has been of both relief and surprise, as they were scared to come into the Allergy office and unaware that telehealth assistance was available at this stage. The majority of users expressed their gratitude for being called 48 hours ahead the confirmed in-person visit to prevent inessential exposures, while physicians were also satisfied by the extent of care provided remotely.

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Reasons for the slow uptake of telehealth are multifaceted and diverse among countries, such as clinician willingness, financial reimbursement and reorganization of the health system are critically involved [8]. Patients´ barriers including age, socioeconomic status and level of education, should be mentioned as the main limitations we came across, with a proportion (1.96%, 6 out of 305 scheduled in person appointments) of the population not having access to a smartphone and new technology or not reachable due to inaccuracy of the contact details in the corresponding medical records [9]. Time-consuming questions at the start of the virtual consultation -i.e asking for a quiet private space to assess the suitability of consult over the phone- may be overcome by scheduled on-line appointment reminders the day before maintaining current workflows [10].

In our view, the proper use of telemedicine should become part of the curriculum in the training of healthcare professionals to ensure an adequate level of awareness. In addition, telemedicine is notably in use to substitute or supplement face-to-face specialist consultations for a wide range of patient needs, a valuable tool to facilitate healthcare during the enforced national COVID-19 mobility-restriction period, and like other forms of care delivery, ought to be personalized upon the patients and their individual needs.

Conflict of Interests:

All authors declare that there is no conflict of interest regarding the publication of this manuscript.

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Trial registration

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References

1. https://www.who.int/sustainable-development/health-sector/strategies/telehealth/en/ last accessed on 2020, April 9th.
2. Alvarez-Perea A, Cabrera-Freitag P, Fuentes-Aparicio V, Infante S, Zapatero L, Zubeldia J. Social media as a tool for the management of food allergy in children. J Investig Allergol Clin Immunol. 2018;28:233-40.
3. Alvarez-Perea A, Sánchez-García S, Muñoz Cano R, Antolín-Amérigo D, Tsilochristou O, Stukus DR. Impact Of "eHealth" in Allergic Diseases and Allergic Patients. J Investig Allergol Clin Immunol 2019; Vol. 29(2): 94-102.
4. https://covid19.who.int, last accessed 2020, June 4th
5. Sánchez-Machín I, Poza-Guedes P, González Pérez R, Barrios Y, Matheu V. Adapting Waiting-List For Allergy By Health Care On-Line: Coordination Between Providers and Allergist In The Public System. J Allergy Clin Immunol. 2014;133:AB66
6. https://boe.es/boe/dias/2020/03/14/ Last accessed 2020, April 8th.
7. https://www.gemasma.com Last accessed 2020, 2nd June.
8. Smith AC, Emma E, Snoswell CE, Haydon H, Clemensen J, Caffery LJ. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). Journal of Telemedicine and Telecare. 2020;0:1–5.
9. Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS- EU). *Eur J Public Health.* 2015;25:1053-8.
10. Hollander JE, Sites FD. The Transition from Reimagining to Recreating Health Care Is Now. NEJM Catalyst. 2020;8:0.

Figure. Number of visits in transition to Telehealth at the Allergy practice.

*2020, Friday 13th, last working-day before the COVID-19 national emergency was declared in Spain.