







## CARE TRANSITION FOR LIVER TRANSPLANTED PATIENTS DURING THE COVID-19 PANDEMIC

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### ABSTRACT

**Objective:** to submit the experience lived in the care transition for hospital discharge of patients undergoing liver transplantation due to the COVID-19 pandemic.

**Method:** an experience report on hospital discharge planning and care transition for patients undergoing liver transplantation at a teaching hospital.

**Results:** after COVID-19 pandemic has been declared, several technological means were used to support self-care strategies at the time of the hospital-home transition, as well as remote care for patients focusing on doubts about the routine of care and treatments. In addition, new counterreferral strategies were structured, prioritizing safety and social isolation.

**Conclusion:** the adjustments in care transition with the support of the technologies provided transplanted patients access to all the information that guides self-care. Likewise, they regulated the flow of the support network and the health network, decreasing the possibility for COVID-19 spread, infection and development.

**DESCRIPTORS:** Continuity of patient care. Coronavirus infections. Hepatic transplant. Nursing. Patient discharge.

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## TRANSIÇÃO DO CUIDADO DE PACIENTES SUBMETIDOS AO TRANSPLANTE HEPÁTICO DURANTE A PANDEMIA DA COVID-19

### RESUMO

**Objetivo:** apresentar a experiência vivenciada na transição do cuidado para alta hospitalar de pacientes submetidos ao transplante hepático em razão da pandemia da COVID-19.

**Método:** relato de experiência sobre planejamento da alta hospitalar e transição do cuidado de pacientes submetidos ao transplante hepático em um hospital-escola.

**Resultados:** após a declaração da pandemia da COVID-19 foram utilizados diversos meios tecnológicos para apoiar as estratégias de autocuidado no momento da transição entre hospital e domicílio. Assim como, atendimento remoto aos pacientes com foco em dúvidas acerca da rotina de cuidados e tratamentos. Além disso, novas estratégias de contrarreferência foram estruturadas, priorizando a segurança e o isolamento social.

**Conclusão:** os ajustes na transição de cuidado com apoio das tecnologias oportunizaram acesso aos pacientes transplantados a todas as informações que orientam o autocuidado. Igualmente, regularam o fluxo da rede de apoio e rede de saúde, diminuindo a possibilidade de propagação, infecção e desenvolvimento da COVID-19.

**DESCRITORES:** Continuidade da assistência ao paciente. Infecções por coronavírus. Transplante hepático. Enfermagem. Alta do paciente.

## TRANSICIÓN DEL CUIDADO DE PACIENTES SOMETIDOS A TRANSPLANTE HEPÁTICO DURANTE LA PANDEMIA DEL COVID-19

### RESUMEN

**Objetivo:** presentar la experiencia en la transición del cuidado para el alta hospitalaria de pacientes sometidos a trasplante hepático en vistas de la pandemia del COVID-19.

**Método:** informe de experiencia sobre la planificación del alta hospitalaria y la transición del cuidado de pacientes sometidos a trasplante hepático en un hospital escuela.

**Resultados:** después de declarada la pandemia del COVID-19 se utilizaron diversos medios tecnológicos para respaldar las estrategias de autocuidado al momento de la transición entre el hospital y el domicilio, al igual que la asistencia remota a los pacientes enfocada en dudas acerca de la rutina de cuidados y tratamientos. También se estructuraron nuevas estrategias de contra-derivación, priorizando la seguridad y el aislamiento social.

**Conclusión:** los ajustes en la transición del cuidado con el respaldo de las tecnologías viabilizaron el acceso de los pacientes trasplantados a todas las informaciones que guían el autocuidado. De igual manera, regularon el flujo de la red de apoyo y de la red de salud, reduciendo así la posibilidad de propagación, infección y desarrollo del COVID-19.

**DESCRIPTORES:** Continuidad de la atención al paciente. Infecciones por coronavirus. Trasplante hepático. Enfermería. Alta del paciente.

## INTRODUCTION

After COVID-19 pandemic has been declared, a period of fear, concerns and uncertainties prevailed about the virus pathogenic potential, transmission, treatment, prevention and ways for mitigation. Health teams, government officials and society began to experience an unprecedented reality: an invisible enemy, with rapid transmissibility, reaching the population in a devastating manner. Despite great efforts on the part of the World Health Organization (WHO) and the specific public policies of each country, there is still no effectiveness in curbing the virus transmission.<sup>1</sup>

As a global response, researchers aimed their efforts at resolving the issues imposed by COVID-19. However, there are no satisfactory and promising results in view of all the social and health needs, especially in the care provided to transplanted patients. The impact of this disease on the transplant recipients is still unknown.<sup>2</sup>

In this setting the patient undergoing the transplant is found, which has unfavorable characteristics, since, during the surgical procedure, doses of corticosteroids are being administered, followed by high doses of immunosuppressants, resulting in a significant decrease in immunity.<sup>2-3</sup>

A study carried out in China points out that liver transplant recipients, due to the immunosuppressive effects, can be more susceptible to infection with SARS-CoV-2, the virus that causes COVID-19 and have a worse prognosis for the evolution of the disease than the population, in general.<sup>2-3</sup> In Italy, another study shows that organ transplant recipients, compared to normal hosts, demonstrate greater susceptibility to respiratory virus infection, faster progression to pneumonia and greater disease severity.<sup>4</sup> Still, a study produced in France shows that patients undergoing liver transplantation appear to have a rapid increase in viral replication when infected, due to the use of immunosuppressants.<sup>5</sup>

Considering the reality pointed out by the WHO that human coronaviruses can remain on surfaces for up to 9 days, and that the virus that caused COVID-19 was detected after 72 hours in experimental conditions, the risks for contagion are enormous.<sup>6</sup> Observing the reality and information from other countries that have already experienced the pandemic and the WHO data, there is an urgent need to settle guidelines for preventing, diagnosing and treating COVID-19 in liver transplant recipients.<sup>3</sup>

Thus, considering the urgency to settle adjustments in the care for patients undergoing transplants, in face of the COVID-19 pandemic, this research will display adaptations in the hospital discharge plan for the transition from hospital care to home care for patients undergoing liver transplantation (LT) at a teaching hospital in the South of the country.

Care transition for these patients is developed through the extension project entitled: "Planning Nursing Care for Hospital Discharge of Liver Transplanted Patients" since 2017. This project is linked to another research project entitled: "Live transplantation: Characterization and management of care to improve the care process".

The extension project is based on the Self-Care Theory, which, in essence, argues that nurses and users must identify the deficits in fulfilling self-care needs. In this context, the nurse is the professional who identifies the difficulties and enables the resolution through guidelines and empowerment of the individual. Care transition in this setting takes place when care is no longer the entire responsibility of the hospital team and becomes the responsibility of the transplanted individual and of the support network.<sup>7</sup>

For such, strategies are developed for care transition, that is, through visits and guidelines while still in the hospital; the team participating in the project uses resources that aim to enable the self-care of this patient at home. The actions are related to the following: care with hygiene, food, medication use, verification of vital signs and blood glucose, temperature and diuresis control and insulin administration.

This team is also in charge of the counter-reference and monitoring of the patient after hospital discharge and return home. In summary, the team that conducts the extension project goes to the hospital and performs orientation activities with transplanted patients before hospital discharge. Then, with patient data and medical records, they perform the counter-reference. Before the pandemic emerged, all these activities were carried out face-to-face. However, after COVID-19 outbreak, it was necessary to restructure the care transition plan, aiming to reduce contact with the patient, increase their social isolation, minimize the movement of professionals in the room, in addition to promoting social isolation of the scholarship fellows and project proponents.

Given the challenge imposed, there was a need to make adjustments in the care actions and in the discharge plan for care transition, using technological care tools, in addition to changing the flow of referrals of the counter-reference, since the project team was no longer present at the hospital. In this perspective, despite great efforts by the World Health Organization (WHO) and the specific public policies of each country, there is still no effectiveness in curbing this virus transmission.

## METHOD

This is an experience report that describes the performance of students and teachers in planning discharge for care transition between hospitalization and patients undergoing LT returning home, in face of COVID-19 pandemic. According to the aforementioned proposal, this activity is carried out through an extension project linked to a research project.

It is noteworthy that the study is based on Dorothea Elizabeth Orem's theory, which exposes the self-care theory. Self-care includes several actions performed in daily life: lifestyle, hygiene, food, socioeconomic and environmental conditions, among others.<sup>8-9</sup>

This research has been developed with all liver transplanted patients since 2017, who participated in the discharge planning for care transition at a teaching hospital, reference in liver transplantation, located in the southern region of Brazil. Participants' exclusion occurs when they are hospitalized only for clinical treatment, without being transplanted at this institution.

The care tools that will be mentioned were developed by the project team during activities execution. Discharge planning stages for care transition from hospital care to the home environment are described below:

First stage: every two days a search of patients undergoing LT is made in the Intensive Care Unit (ICU) and surgical clinic, in order to identify new hospitalizations.

Second stage: to know patient's reality, identifying social specificities and personal aspects that involve doubts about the post-transplant period. Also, to know the clinical conditions with the multidisciplinary team. Then, the project team discusses which strategies will be developed for care transition, according to the patient's individual needs.

Third stage: development of care transition: 1<sup>st</sup> step - the project team conducts the nursing consultation with the patient and family to assess the clinical conditions, identify doubts and present the home care guide and folder. At that moment, the reading and viewing of the material is stimulated and they are asked to write down the doubts to solve them at a later meeting. 2<sup>nd</sup> step - the project team returns to clarify doubts and insecurities regarding the provided materials, reinforcing the most important points. 3<sup>rd</sup> step - it starts with the stimulation of self-care, instructing the patient and family on how to proceed with each care action to be performed at home (blood glucose control three times a day, insulin application, weight checking, blood pressure measurement, temperature and diuresis control, use of various medications, ability to identify possible signs of rejection and infection, in addition to other precautions). This stage lasts a mean of two to three days and can be extended, depending on the characteristics of each patient, such as: degree of understanding, clinical condition, emotional situation and others, which may arise. After the patients have been prepared to develop

their care actions, they initiate them, still in the hospital environment so that they may be monitored, assessed and, if necessary, propose adjustments.

Fourth stage: contact is established with the support network, promoting necessary referrals with the health, social and pharmaceutical care network.

Fifth stage: contact is made with the primary care team, requesting information about the home visit, in addition to making contact with the patient, seeking to identify how the adaptation to the new reality is progressing.

Sixth stage: conducting a meeting with the multidisciplinary LT team, proposing adjustments in planning care transition.

In the face of COVID-19 pandemic, all these stages and flows needed adjustments and adaptations. However, as transplants continue to happen, in addition to the demand for support for patients who are already at their homes, it is necessary for the project team to seek strategies for internal adjustments during hospitalization and preparation for discharge.

Information collection was carried out to adjust care transition given the COVID-19 pandemic, such as: online meetings with the project team, seeking to identify how it would be possible to continue the planning; searches in the literature for information to support these adjustments; conversations with patients and relatives to understand their needs and doubts, considering the reality of returning home with the pandemic.

After obtaining the information from the team, searching the literature and, finally, with patients and family members, the information was grouped and adjusted in the stages for planning care transition, observing the following: care with the patient, taking into account the risk of contamination and development of COVID-19, care with the caregiver and adjustments in the flow of referrals with the health care network.

## **RESULTS OF THE EXPERIENCE OF THE PROJECT'S TEAM IN FACE OF THE COVID-19 PANDEMIC**

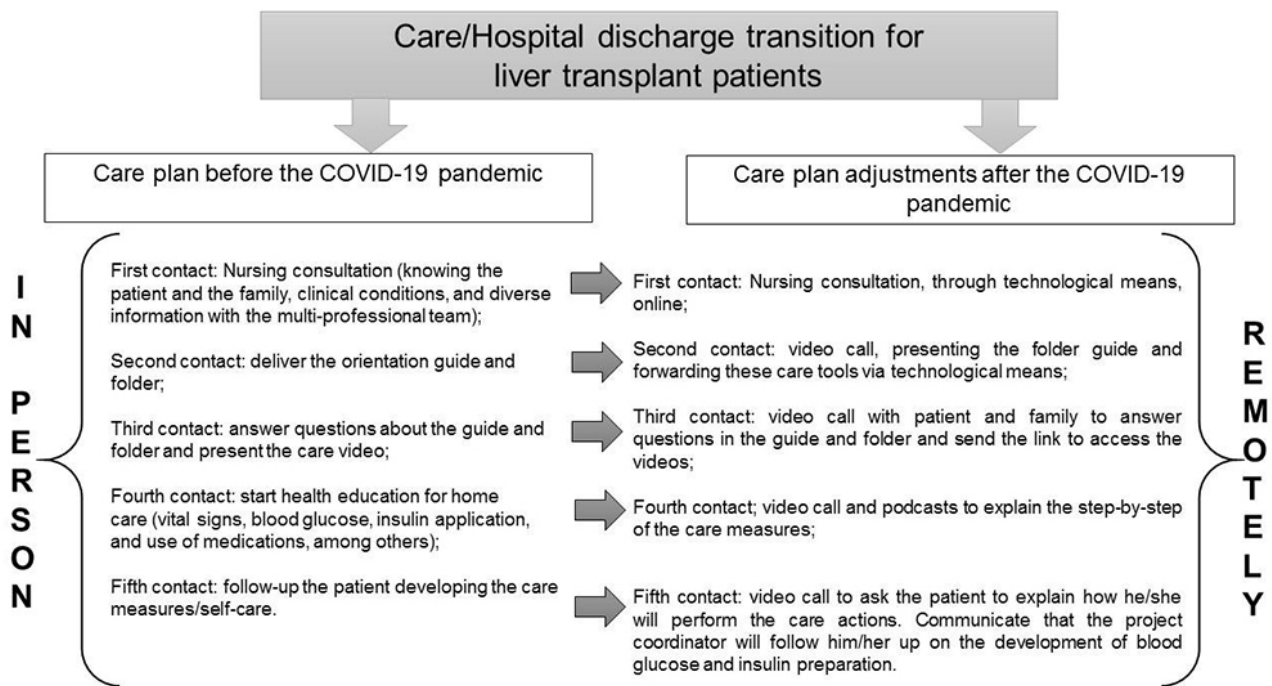
For better understanding, changes in the care's transition plan will be showed by means of figures, comparing the before and after COVID-19 pandemic.

In Figure 1, the before and after adjustments of the care actions with the patient and family are shown. It is observed that before the pandemic, all the activities of the project team were in person. After the pandemic, only the monitoring of glycaemia verification and insulin application were performed in person, by a nurse at the transplant outpatient clinic.

As can be seen, after the COVID-19 pandemic, several technological means were used to support care strategies, such as: online nursing consultation; videos; podcasts; among others. The online nursing consultation sought to know the patient's clinical situation, interaction and recognition of the patient's real situation, which is carried out before the project team initiates the orientation actions for home self-care. A video was prepared by the team, showing the step by step of how the patient should proceed to check vital signs, check blood glucose, take medications, medication care, insulin application, food care, personal and home hygiene. In addition, videos were shared with the patient, prepared by the team from another extension project, guiding insulin preparation.

Another video was also made available, created only with guidelines and care regarding COVID-19 prevention for transplanted patients, due to their immunosuppression. In this second video, there are specific guidelines regarding the following: Social isolation; Health care and temperature control for the caregiver; Hygiene and care with the caregiver and their going out to purchase supplies.

Regarding the podcasts (audio messages), these had to last a maximum of three minutes each one, and had the proposal to encourage and introduce the patient to the importance of handling the guide and entering the links to the guiding videos.



**Figure 1** – Care transition: actions together with the patient and the family before and after the pandemic. Florianópolis, SC, Brazil, 2020.

In the figure above, it can be seen there was a need for insertion and frequent use of technological means in the project's activities, which were of utmost importance for the project team to be able to interact with the multi-professional LT team, patients and family members.

Figure 2 shows the counter-reference before and after the pandemic. It is noted that, due to the restriction of professionals in the health units to avoid contamination by COVID-19, care services were restricted in this environment. Thus, it was necessary to forward the requests for supplies to perform care in the home environment via *WhatsApp*® and schedule the pick-up time. As for home visits, due to the patient's social isolation and restricted team movement, this activity is not being carried out during the pandemic. In this sense, the project team follows the patient up from a distance, monitoring and advising on the emerging demands, through video calls.

Considering Figure 2, it is observed that the project team started to monitor the patient, also, at home by technological means, due to new flows introduced by primary care and, mainly, to avoid personal contact of these professionals during home visits; thus maintaining the social isolation of the transplanted patients. However, as they need home support for self-care, this contact is being made online.

The current context proposes challenges to all areas of health, making professionals from various segments adapt themselves to the experienced reality. In face of the pandemic, telehealth/teleconsultation, that is, professional contact through technological means, has stood out as an instrument to replace face-to-face meetings, reducing physical contact and promoting social isolation.<sup>10</sup> A number of studies indicate that teleconsultation in cardiac rehabilitation is highly effective in supporting the self-management of care through phone calls, videoconferences and mobile applications.<sup>11</sup>

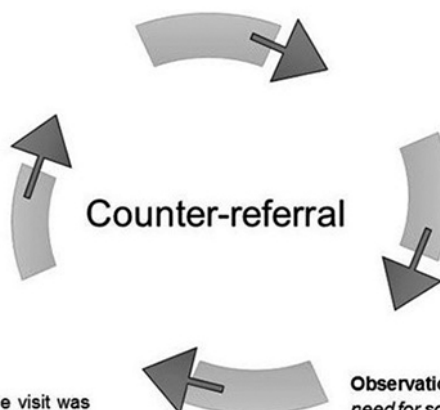
## Care/Hospital discharge transition for liver transplant patients

### Before COVID-19

First contact: contact with the patient's referral unit, passing all the information on the patient's clinical situation and requesting to ask for:

- > Medications; Supplies; and Disposable materials;
- > Scheduling of return for the family member to fetch the products;
- > Scheduling home visits at the patient's home by the health unit team.

Second contact: identified how the home visit was and if there is any doubt from the team regarding patient support.



### After COVID-19

First contact: the project team contacts the patient's reference unit, passing on all the information on the patient's clinical situation and proceeds with:

- > Forwarding of the prescriptions via technological means;
- > Request for the materials to be separated;
- > Communication that a family member or friend will fetch;
- > Scheduling time to fetch the materials and medications.

**Observation:** Due to the restriction of the services and the need for social isolation, no team visit is being scheduled. The project team makes video calls for home follow-up of the patient.

**Figure 2** – Care transition and Counter-reference: actions together with the primary health care team. Florianópolis, SC, Brazil, 2020.

Also, the educational Web tools for counseling have supported surgeons in home post-operative treatment, in addition to supporting the use of medications and treatments, maintaining social isolation and minimizing the risk of contamination by COVID-19.<sup>12-13</sup> A recent study on physician-patient communication in the surgical practice during the pandemic reveals that communication via WhatsApp® resolves patients' doubts and shares information about the treatment, including drug treatment. In addition, the patients can describe the symptoms they are presenting, allowing the physician to check whether there is a need for a face-to-face consultation, which limits the spread of the SARS-CoV-2 virus.<sup>14</sup>

In view of the pandemic setting, it is essential to develop strategies to reduce the exposure of patients who are part of the risk group, favoring and stimulating social distancing.<sup>15</sup> Minimizing the risk for transmission and reducing the impact of this pandemic depend on the collaborative effort of government, families and citizens.<sup>16</sup> As liver transplant recipients are more susceptible to COVID-19 infection, due to the long-term oral immunosuppressive effects, and because there is no possibility of reducing the use of these medications as it would lead to acute rejection, educational strategies for expanding the isolation are of utmost importance, especially with the health team, considering that these professionals circulate in different hospital environments.<sup>3</sup>

Through a technical note, the Brazilian Organ Transplant Association (*Associação Brasileira de Transplantes de Órgãos*, ABTO) through the Transplant Infection Commission and the General Coordination of the National Transplant System (*Sistema Nacional de Transplantes*, SNT) highlights the need to reduce as much as possible the flow of people in the environment where patients who have undergone a transplant are hospitalized. The restriction is also included on visits, the number of companions, in addition to limiting contact with the health team to the maximum. Patients that have been transplanted less than one year ago should reduce their circulation in health care facilities. Whenever possible, care for these patients should be through teleconsultation or flexible appointment times, scheduling exams, when there is less flow and avoiding as much as possible that this patient circulates in crowded environments, when face-to-face care is essential.<sup>17-18</sup>

Given the recommendations for using technological means in the literature, as well as the ABTO and the SNT recommendations for the care of transplanted patients, this experience report reveals that these technological tools provide nursing consultations, conversations, guidelines, education in health, support for patient doubts and effective communication among the multiprofessional team, primary care and the extension project team.

Considering that this patient has difficulties and health needs regarding glycemic control, insulin application, identification of warning signs for complications and use of various medications, it is of fundamental importance that there is thorough preparation regarding home care actions, in addition to solving doubts that can arise at home.<sup>19</sup> And, in this way, the use of technological tools, such as podcasts, video calls, instructional videos and even phone calls allowed recently transplanted patients to have safe access to care, even during the pandemic.

Thus, in order to decrease the circulation of this patient and meet the care needs, the adjustments in care transition from the hospital to the home with the support of technologies were certainly relevant to minimize the risks for COVID-19 contamination and development for this patient.<sup>19</sup>

The care transition carried out in this experience report made it possible to get closer to the scholarship fellows, patient and family, in addition to enabling safety. Since that, through the technologies, there is no concern with the exposure time, that is, the team can guide, inform, question, listen and solve doubts, without worrying about the fact that it offers any risk to the patient due to contamination. It was also possible to perceive greater tranquility in them to access videos and podcasts anytime they wanted to.

## **CONCLUSION**

The care transition from the hospital to the post-liver transplant patient's home was performed remotely, using technological resources. With this experience, it was possible to identify that, even in a pandemic setting, the transplanted patient received care, as well as guidelines to assist in the promotion of self-care.

These were essential tools, as they ensured greater articulation for issues not only of an individual nature, which include solving doubts, but also in relation to the counterreferral that also underwent changes. It was possible to establish communication between the support network and the health network, prioritizing safety, social distancing and carrying out the necessary activities, with due precautions.

Despite the difficulties faced due to the scarcity of studies related to home care during settings similar to those of the COVID-19 pandemic, it is believed that the adjustments made in the discharge plan for the care transition from the hospital to the liver transplanted patient's home provided greater restriction for the circulation of health professionals with these patients. By means of the applied adjustments, it is expected that the actions developed by the team will be successful, meeting the patients' current demands.



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## NOTES

### ORIGIN OF THE ARTICLE

Extracted from the extension project - Planning Nursing Care for Hospital Discharge of Liver Transplanted Patients, linked to the research project - Live transplantation: Characterization and management of care to improve the care process. The extension project has been developed since 2017 and is currently linked to the 2019/2020 Pro-Scholarship Program of the Dean of Extension Office of the Universidade Federal de Santa Catarina.

### CONTRIBUTION OF AUTHORITY

Study design: Knihs NS.

Data collection: Sens S, Silva AM.

Data analysis and interpretation: Knihs NS, Sens S, Silva AM, Wachholz LF.

Discussion of the results: Knihs NS, Sens S, Silva AM, Wachholz LF, Paim SMS.

Writing and/or critical review of content: Knihs NS, Sens S, Silva AM, Wachholz LF, Magalhães ALP.

Review and final approval of the final version: Knihs NS, Magalhães ALP.

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### APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beings of the Universidade Federal de Santa Catarina, N.1,575,457. Certificate of Presentation for Ethical Appreciation (CAAE): 54900716.8.0000.0121

### CONFLICT OF INTEREST

There is no conflict of interest.

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