

# Preventing Medical Error through Patient Education: *A Kidney Donation Case Study*

This project explores the role that graphic design can play in improving patient comprehension during inpatient procedures. It is driven by an advocacy to decrease patient suffering and financial expenditure by both patients and hospitals. It is an inquiry for conversation; a proposal for the possibilities and contributions that the designer can bring to the hospital setting. It focuses on living kidney donation as a case study, but its aim is to provide a framework for a larger scope of procedures.

“As many as 98,000 people die in hospitals each year as a result of errors that could have been prevented, resulting in an estimated annual loss of 58 billion dollars to the healthcare system.”<sup>1</sup> Error is a consequence of accountability—During an average three-day stay as a donor in a kidney transplant program, patients might see as many as twelve different nurses. Add in a list of doctors, surgeons, pharmacists, dieticians, educators and transplant coordinators, and there is a very complicated network of specialists responsible for patient education. With the frequency and variety of exchanges, there is rarely a thorough record of staff-to-patient interactions—forcing staff members to repeat lessons that others have covered, or worse, leave absent.

Airline pilots keep exact, precise checklists of the conditions of their vessels to avoid mid-air catastrophe, yet hospitals rarely verify a patient’s understanding of home care upon discharge. Self-medicating after an inpatient procedure can be more perilous than sitting as a passenger on an airliner—shouldn’t hospitals be making the same precautionary checklists to ensure patient comprehension? Embarrassment can inhibit patients from expressing confusion or from asking questions. When discharged, patients are often left with an unclear view of their visit, and confused about their responsibilities when staff members are no longer present. Current patient education materials for living kidney donors are commonly used as either a pre-cursor to the visit, or as an afterthought.

Patients can leave the hospital unable, and often unwilling, to properly care for themselves when they are no longer under the supervision of a physician—incorrect medication is taken, wounds are improperly cleaned, emergency precautions are not taken, and patients do not communicate well with new physicians during checkups. These errors often result in patient readmission. More than 17 percent of patients discharged from a hospital are readmitted within 30 days, resulting in billions of Medicare dollars spent<sup>2</sup>. The moment patients enter the hospital, they need to begin learning about how to care for themselves at home. Preparing a patient for discharge is the first step of the hospital stay process, not the last.

Living donor education is critically necessary to understand the processes involved in transplant procedures. It is also needed to help support the emotional investment made by the patient. Lack of clear information is potentially life threatening. Education tools must cater to the severity of this investment by providing a vessel for reflection, interaction, and discovery. If

<sup>1</sup>Edlin, Mari. (2004).  
Health Understood, *Managed  
Healthcare Executive*. 14, 32–34.

<sup>2</sup>Barrett, Sharon E. (2006).  
Health Literacy: Improving  
Quality of Care in Primary  
Care Settings, *Journal of  
Health Care for the Poor and  
Underserved*. 17, 690–697.

patients and doctors are able to document and edit the donor's own journey, health literacy is no longer reached merely through diagrams and definitions, but through personal and tangible relationships.

With the hustle and flow of inpatient activity, hospital staff are constantly photocopying documents in order to ensure proper record keeping. But after several generations of replication, text and image often become muddy; jeopardizing the legibility of the document. By making these considerations with graphic and typographic choices, education tools can be modeled to survive the jaws of copier machines with greater integrity.

Vague photography and ambiguous clipart end up doing more to impede the legibility of education tools than improve them. Verbal cues by hospital staff are invaluable, but both text and image are necessary to accompany these cues in order to aide a patient's understanding of their surgery. Too often, low-resolution photography is used, burdened with a heftier responsibility than it can handle.

By graphically reinterpreting these images with simpler, more comprehensible forms called pictograms, complex subjects can become much more manageable. Pictograms are graphic representations of concepts, objects, or processes, and can be used to make long-winded verbal or written cues easier to grasp.

Children can use pictograms to understand new concepts in school, just as passengers in airports can use them to navigate a foreign setting. But contrary to the curiosity of the classroom, or the thrill of flying across the world, the hospital setting provides a foreign experience that yields discomfort and confusion. Pictograms with humanistic qualities are not only recognizable, but also accessible, understandable, and comfortable. A universal picture language will allow non-fluent patients to better understand processes and themes.

Some images notate location rather than instruction. Below, diagrams of the urinary system and the kidney are used to give patients a better understanding of their kidneys, and how they work with the rest of their body. Hospital staff can discuss these images with patients, using them as teaching references to aid verbal explanations. Diagrams can use notational cues—such as arrows or rule lines—to help point out parts of the image.

By taking this communicative role, pictograms must provide enough flexibility to cater to the narrative of the hospital, yet maintain enough rigidity to communicate to diverse cultures and demographics. But, their appearance can often mistakably portray a variety of messages beyond that which the idea or noun actually is. A person is not just a person; is it a man? Is it a woman? Is he/she old? Young? Short? Tall? The responsibilities of the system require an approach that is syntactic, semantic, and above all, humanistic.

Early pioneers of pictographic communication were Otto and Marie Neurath: founders of ISOTYPE (International System of TYpographic Picture Education). Organized under the self-proclaimed title of transformer — the transformer's role was to put information into visual form. Over ISOTYPE's history, thousands of pictograms were developed to explain complex visual processes. Following the death of Otto in 1945, Marie pushed ISOTYPE into third-world settings and illiterate communities<sup>3</sup>. Information was made comprehensible through the development of generalized "characters" that would then be repeated to illustrate specific roles or actions.

ISOTYPE's symbols in use



<sup>3</sup>Kinross, Robin. *The Transformer*. 36. Hyphen Press, 2009.

Current patient-education materials for living kidney donors are used as either a precursor to the visit or as an afterthought. Often in an 8.5 × 11 photocopied format; typographic, editorial, and graphic considerations are not made. Images are unrelated to the text — which is written too technical for the average patient. The document is not discussed with patients, but rather stands alone as a device for personal education. Consequently, patients rarely look after it as property.

Budget is of immediate concern when developing education materials for a hospital system. Patient education is not organized by hospital management, putting each transplant program in charge of developing education materials. This results in an inconsistent array of books, pamphlets, and documents. A design which takes advantage of low-cost production will be most acceptable and beneficial. Since editorial changes are often implemented, it is important to consider a document that is additive and subtractive — a document which will not require a full reprinting when one sentence needs change. But the most difficult question then arises, how might you produce a document that can be universally produced, yet can be personalized?

The proposed format looks at a 3-ring binder as host for the different documents, pamphlets, and forms that are used for patient education. To reduce printing costs, it uses a limited palette of two colors, and standardizes the page size to 8.5 × 11 inches. In doing so, the pages are simple to reproduce, photocopy, and file. Binders have proved their worth for organizing complex information, and can be integrated into nearly all hospital filing systems.

Oftentimes, when patients step into a hospital document, they are lost in a sea of babble that might as well be a foreign language. Hierarchy—the organization and ranking of text elements such as titles, body text, and captions—is rarely considered, forcing readers to reinterpret the document every time they turn the page.

Hierarchy can act as a life-preserver when patients are drowning in confusion. By keeping primary elements (titles, body text) consistently in the forefront, secondary elements (instructions, captions, images) can then be deviant, creating a vibrant interplay of text and image. This approach turns the document into a visual encyclopedia, allowing for a non-linear reading of the text.

Doctors use education tools to answer patient questions, so by framing each subject or topic with a question, such as “How will I recover after my surgery?”, the tool is able to voice the curiosity of the patient, and reinforce the instruction and explanation by the doctor. This becomes a navigational element; guiding patients through their journey, and forming waypoints so that they might stop along the way, or remember where it is that they went. My goal for an improved education tool is to allow patients to create a personal setting for their experience; to allow patients and doctors/nurses to interact with one another regarding their talk; and for patients to document their thoughts and instructions.

The design of this education book allows for questions to be answered both visually and verbally. Some spreads may be more image-based if the material calls for visual explanations, while some may be primarily text-based. The system is rigid enough to stay familiar to users, yet fluid enough to make engaging visual statements.

Each of the four sections in the binder contains editable forms.

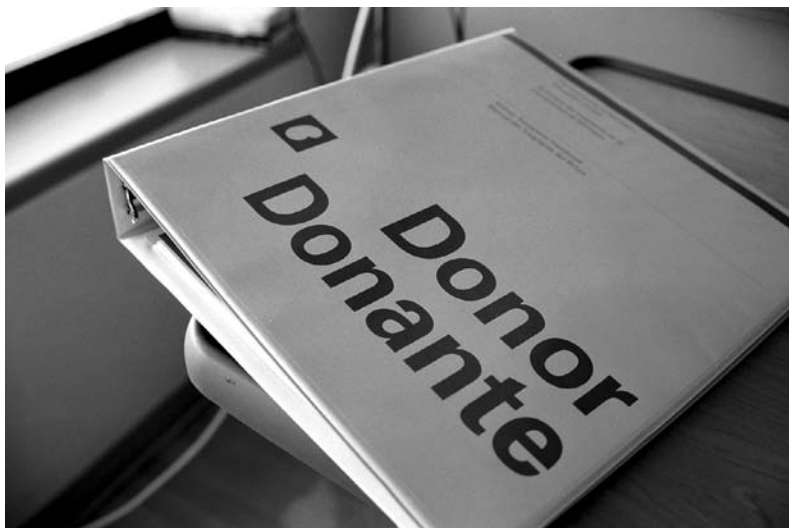
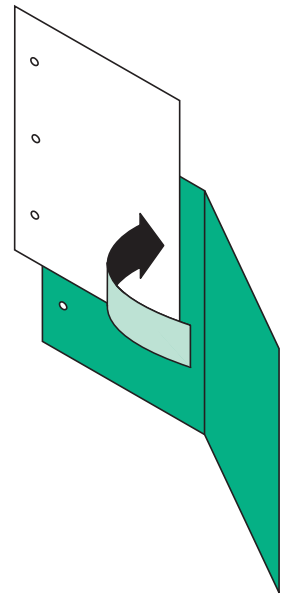
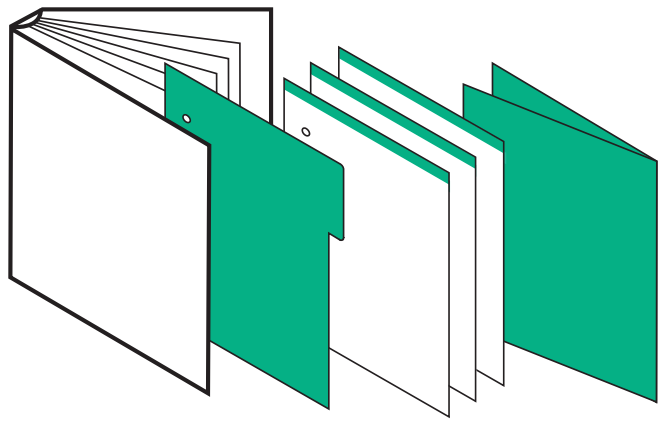
Typical legal documents, and reflective documents more akin to writing in a journal, might be included. Before admission, hospital staff strongly suggest that patients keep a journal. But without providing a venue for note-keeping, patients will rarely do so. By integrating such items into education books, patients will be more obliged to ask, discuss, and observe their transplant experience. Staff are encouraged to write on these forms as well, allowing them to connect with patients on a more personal level, and to provide additional notations that will be helpful after they've been discharged.

If patients and staff are constantly editing the donor book together, it becomes a keepsake of their journey. Patients will then be much more likely to use it and take care of it. The book will stand as a record of their experience, and can be referenced when patients return for check-ups.

The inside of the fold-over document in the binder (shown below) contains visual references and explanations on the right side, and a form to fill out on the left side. Organizing this information side-by-side helps patients to comfortably fill out the forms without having to ask for continual help from a staff member. For the non-legal document below, patients can keep track of conversations that they have with staff members, and can reference what roles each of those members actually play in their transplant experience.

Additional 3-hole-punched black and white  $8.5 \times 11$  forms are housed in this  $11 \times 17$  folded document. After documents have been filled in, signed, and edited, staff can photocopy these notes and file accordingly. This leaves both the patient and hospital a record of each step in the surgery process. Forms can be removed and replaced with ease.

Health literacy is a stronger predictor of health than age, income, employment, education, or racial/ethnic groups. The role of the graphic designer in the healthcare setting is to restructure patient education so that health literacy might make predictions of good health more often. There is a wealth of research available, and a great amount of action that can be taken, to further this conversation. Investing in health literacy to discuss, organize, and build new tools for patient education could significantly diminish patient readmission. If patients are given the tools to make educated and safe decisions after being discharged from hospitals, they will lessen their chances of making medical errors. By reducing patient readmissions, hospitals can save money, manpower, resources, and precious time to focus on what they do best—saving lives.



*Above.* Diagram and image of proposed education binder.



## How Will I Recover After My Surgery? ¿Cómo a Recuperar Después de Mi Cirugía?

### 1 Monitoring Your Condition: Supervisión de Su Condición:



In the PACU, the patient may wear certain devices to automatically monitor their vital signs. These devices include:

- Blood Pressure Cuff:** device wrapped around your upper arm, used to measure blood pressure.
- Oximeter:** attached to your index finger, measures the oxygen saturation of your blood.
- EKG Leads:** an electrocardiographic lead is a recording electrode or a pair of recording electrodes that measure your heart's electric activity.
- Urinary Catheter:** collects urine to help the nurse monitor kidney function and hydration after your surgery. *Example is male.*



En el PACU, el paciente puede usar ciertos dispositivos supervisa automáticamente sus muestras vitales. Estos dispositivos incluyen:

- 1 Puntos de la Presión Arterial:** dispositivo usado para medir la presión arterial.
- 2 Oxímetro:** un aparato médico eso mide la saturación del oxígeno de su sangre.
- 3 Plomos de EKG:** Un electrocardiográfico el primer es un electrodo de la grabación o un par de electrodos de la grabación que midan su actividad eléctrica de los corazones.
- 4 Cateéter Urinario Recoge:** la orina para ayudar al riñón del monitor de la enfermera para funcionar y a la hidratación después de su cirugía.



Your vital signs, measurements of the body's most basic functions **1,2,3,4**, are taken to insure your health and safety.

Sus muestras vitales, medidas del body's la mayoría de las funciones básicas **1,2,3,4**, será tomado para asegurar su salud y seguridad.

### English

Recovery after your surgery starts in the *Post-Anesthesia Care Unit (PACU)*. This unit is dedicated to meeting your needs in order to minimize dangers to your health after surgery.

Although it may have only taken moments to fall asleep under **anesthesia**, waking up takes time. While sleeping, your muscles and fat absorbed some of the anesthesia, which helped to keep you unconscious during your surgery.

It takes time for anesthesia to be eliminated from the body's **tissues**. Many factors affect the amount of time a patient may spend in the PACU. These factors include the **medication**, the type of anesthetic, and the length of time an anesthetic was **administered** during your surgery. Every few minutes, a nurse will monitor your condition. In addition, the nurse will place warm blankets around your body to make sure that your body temperature does not get too low.

### Español

Después de su cirugía, la recuperación empieza en el **departamento de recuperación postanestesia**. Este departamento está dedicado a satisfacer sus necesidades para minimizar los peligros a su salud después de la cirugía.

Aunque sólo voy a pasar pocos momentos para dormirme mientras su está en la inducción de la **anestesia**, pasa tiempo para despertarse. Mientras se duerme, los músculos y la grasa absorben el **ganano** de la anestesia, que ayudó a mantener que su estaba inconsciente durante la cirugía.

Se necesita tiempo para eliminar la anestesia de los **tejidos** del cuerpo. Muchos factores afectan cuanto tiempo un paciente podría pasar en el departamento de recuperación postanestesia. Estos factores incluyen la **medicación**, el tipo de anestesia y la duración que usted se estaba anestesiado. Cada pocos minutos, una enfermera supervisará su estado. Además, la enfermera le pondrá mantas calientes alrededor de su cuerpo para asegurarse de que la temperatura de su cuerpo.



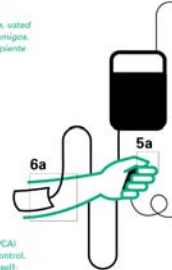
After a successful surgery, you will be greeted by your family and friends. You may speak to the recipient of your kidney shortly after.

Después de una cirugía exitosa, usted será recibido por su familia y amigos. Usted puede hablar con el recipiente de su riñón poco después.

### Pain Management: Manejo de Dolor:

**Patient Controlled Analgesia (PCA)** is used after surgery for pain control. This device allows a patient to self-dose pain relieving medication at the push of a button **(5)**. PCA is a computerized pump programmed to dispense small doses of pain medication through your intravenous line (IV). **(6)**

Postoperatorio se utiliza analgesia controlada por el paciente para controlar el dolor. Este método permite a un paciente controlar el dosis de medicamento para aliviar el dolor con sólo pulsar un botón **(5)**. Analgesia controlada por el paciente es una bomba computarizada que está programada para dispensar pequeñas dosis de medicamentos para el dolor por su línea intravenosa (IV). **(6)**



### Key Terms: Términos Importantes:

**Administered:** dispense, give, or deal out.  
**Anesthesia:** a state in which someone does not feel pain, usually because of drugs they have been given.  
**PACU:** an area, normally attached to operating theatre suites, designed to provide care for patients recovering from anesthesia.  
The essential care includes:  
-Monitoring vital signs (heart rate, blood pressure, temperature and respiratory rate)  
-Managing post-operative pain  
-Monitoring surgical sites for excessive bleeding, discharge, swelling, hematoma, redness, etc.  
**Medication:** a medicine, or a set of medicines or drugs used to improve a particular condition or illness.  
**Tissues:** a group of connected cells in an animal or plant that are similar to each other, have the same purpose and form the stated part of the animal or the body. The organs and tissues of the body.

**Administrado:** dar o dispensar.  
**Anestesia:** la anestesia es un acto médico controlado en el que usan fármacos para bloquear la sensibilidad táctil y dolorosa de un paciente.  
**Departamento de Recuperación:**  
**Medicación:** la medicina, o un grupo de medicinas o drogas que están utilizadas para mejorar una condición particular o enfermedad.  
**Postoperatorio:** Un espacio que normalmente se encuentra adyacente a los quirófanos, diseñado para suministrar asistencia a sus pacientes que están recuperándose de la anestesia.  
La asistencia esencial:  
-Controlar los signos vitales (frecuencia cardíaca, presión sanguínea, temperatura y frecuencia respiratoria)  
-Controlar el dolor postoperatorio.  
-A controlar los sitios de cirugía para hemorragia excesiva, supuración, hinchazón, hematoma, rojura, etcétera.  
**Tejidos:** un conjunto organizado de células en un animal o planta que son similares, tiene la misma finalidad y forma la parte declarada del animal o vegetal.



## How Should I Take Care of My Wound? ¿Cómo Yo Debo Cuidar de Mi Herida?

### 1 Cleaning Your Wound: Limpiar Su Herida:



In order to defend infection or around your incision, it is important to keep your wound as clean as possible. Use these steps 1-to-2 times a day:

- 1 Cloth:** grab a large amount of paper towel, tissue, or soft cloth.
- 2 Soak:** dampen or soak your cloth under or in warm water—be sure to wring the towel, as it should be barely wet.
- 3 Soap:** rub or pour anti-bacterial soap onto your cloth.
- 4 Wash:** gently wash the suture and the area around the suture, being careful not to snag or pull the suture with the washcloth. Wash your incision in circular patterns.
- 5 Dry:** gently pat a dry cloth or towel around your incision. The area should be completely dry. If water is left on or around your incision, infection can occur.



Para proteger su herida de una infección, es importante mantenerla su herida tan limpia que es posible. Usa estos pasos dos o tres veces cada día:

- 1 Tela:** agarra una gran cantidad de papel toalla, pañuelo, o un paño suave.
- 2 Remojar:** humedezca o remoje un paño en agua caliente—agorras la toalla, porque la debe estar apenas mojada.
- 3 Jabón:** Ponga el jabón anti-bacterial en su tela.
- 4 Lavar:** Lave suavemente la sutura y el área alrededor de las suturas. Tenga cuidado de no enganchar ni tirar las suturas con la toalla. Lave su herida en el movimiento circular.
- 5 Secar:** Suavemente seque con una toalla seca. El sitio debe estar completamente seco. Si agua se queda en o alrededor de la incisión, una infección puede ocurrir.

### English

After a successful surgery, hospital staff will ensure that your wound is **healing**, and that you are well on your way to a full recovery. But after you have been discharged, you and your caregiver(s) will be responsible for keeping your **incision** clean and your body healthy. The most important step in avoiding **infection** is to make sure that your wound is always clean.

Cleaning your incision is simple, and can be done with just soap and water. You can clean your incision in the shower, or you can do it at the sink. As you keep your incision clean, it is important to make routine checks for signs of infection, and to monitor any concerning issues that are happening with your wound, such as: **drainage** of blood or **pus**, **rashes**, or an opening in your stitches. Be sure to take notes if anything looks or feels wrong, as you may need to explain this to your physician at your **checkup**.

### Español

Después de una cirugía exitosa, el personal del hospital se asegurará de que la herida está **curando** y que todo bien en su camino a una recuperación completa. Pero después de usted está dando de alta, usted y su cuidador(es) serán responsables mantener la **incisión** limpia y el cuerpo saludable. El paso más importante para evitar una **infección** es asegurarse de que la herida siempre está limpia.

Limpiar la herida es fácil y usted puede limpiar la herida con agua y jabón. Puede limpiar la herida cuando está duchando o en el lavabo. Mientras se mantiene su herida limpia, es importante asegurar que la herida no está infectada y vigilar que cualquier problemas posibles que pueden ocurrir no está ocurriendo, como: el **drenaje** de sangre o **pus**, **sarpullidos**, o una abertura en los puntos de sutura. Asegúrese de hacer notar en todos los casos que se ve o se siente mal, porque es posible que usted necesitará explicar esto a su médico inmediatamente durante su **examen físico**.

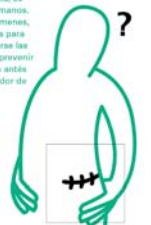
### Wash Your Hands! ¡Limpie Las Manos!

As you touch people, surfaces and objects throughout the day, you accumulate germs on your hands. In turn, you can infect yourself with these germs, which can be very harmful to the condition of your wound. Hand washing is an easy way to prevent infection—be sure to do so anytime you might touch on or around your wound.

Cuando se toca a la gente, las superficies y los objetos durante del día, se acumulan los gérmenes en sus manos. Puede infectarse con estos gérmenes, que pueden ser muy peligrosos para la condición de su herida. Lavarse las manos es una manera fácil de prevenir una infección—limpie las manos antes de usted va a tocar en o alrededor de el sitio de su herida.

### Wound Concerns: Preocupaciones de Su Herida:

- 6 Leaking Fluid:** Gently use a soft cloth or paper towel to soak up any fluid. Call your physician if your wound is leaking large amounts of fluid.
- 7 Sutures Opening:** Call your physician immediately.
- 8 Rash:** Make notes, and call your physician for further guidance. It is likely not a concern.
- 6 Salida de Fluidos:** Suavemente use una toalla para absorber el fluido. Llame a su médico, si su herida está saliendo mucho fluido.
- 7 Aberturas de Sutures:** Llame a su médico inmediatamente.
- 8 Sarpullidos:** Haga apuntes y llame a su médico por más información. No es probable que es una preocupación.




### Key Terms: Términos Importantes:

**Checkup:** a medical examination you will periodically have after your surgery in order to test your general health and the condition of your wound.  
**Drainage:** the removal or leaking of liquid away from its source. Blood or pus may leak from your incision. *No drained water out of a cup.*  
**Healing:** to become well, or improve in health.  
**Incision:** the opening that was made in your body to remove your kidney. This opening in your body will be sealed with sutures.  
**Infection:** A disease in a part of your body that is caused by bacteria or a virus.  
**Pus:** thick yellowish liquid that forms in, and comes from, an infected cut or injury in your body.  
**Rashes:** a skin condition; several small red spots on your skin.











**Curar:** cuando usted mejorará en su salud.  
**Drenaje:** remover o fuga de fluido de su nacimiento. La sangre o el pus puede salir de su incisión. *El vacío el agua de una taza.*  
**Examen Físico:** un examen físico que usted tendrá periódicamente después de la cirugía para vigilar su estado de salud y la condición de su herida.  
**Incisión:** una abertura que fue hecho en el cuerpo para remover el riñón. La abertura en el cuerpo va a estar cerrada con las suturas.  
**Infección:** una enfermedad en el cuerpo que es causado por bacterias o un virus.  
**Pus:** líquido amarillo y espeso que forma y sale de una incisión o herida del cuerpo.  
**Sarpullido:** una condición de la piel; varios pequeños granos rojos en la piel.

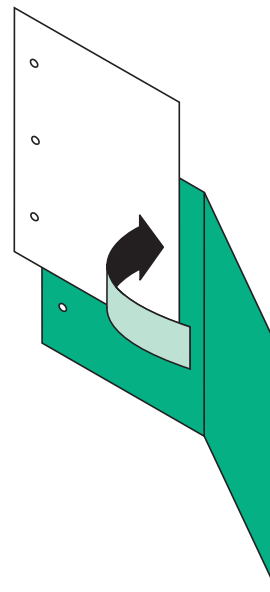
Above: layout examples for proposed document.

3 Conversations with My Transplant Team  
 Conversaciones con Mi Equipo del Trasplante

Nurse / Enfermera	
Name — Nombre	Additional Notes — Notas adicionales
 Nurse Smith	Usually in between 1pm and 4pm
Date — Fecha	We talked about — Nos hablamos de
3.6.10	Nurse Smith instructed me on what kind of physical activity is safe and healthy once I get home - walk regularly, no strenuous activity (contact sports, heavy lifting, etc.)
3.7.10	This morning, she went over the proper way to clean my wound (pg. 34) - do not soak wound! I should not take a bath until my wound is completely healed - only showers.

3 What Does My Transplant Team Do?  
 ¿Qué Hace Mi Equipo de Trasplante?

	<b>Transplant Coordinator:</b> Your transplant coordinator can carry many roles, but typically acts as the "coordinator" of your transplant experience, ensuring that all elements and staff members of your evaluation and post-operative recovery are in order.		<b>Coordinador de trasplante:</b> Su coordinador de trasplante puede asumir e muchos papeles, pero normalmente actúa como el "coordinador" de la experiencia del trasplante. El garantiza que todos los elementos y el personal de su evaluación y la recuperación postoperación están en orden.
	<b>Transplant Surgeon:</b> Your transplant surgeon will be the one who physically removes your kidney. He/she may also care for you prior to and after your transplant.		<b>Cirujano de trasplante:</b> El cirujano de trasplante será el que físicamente remova el riñón. Él o ella también puede cuidar para usted antes de o después del trasplante.
	<b>Nurse:</b> Your nurses will provide the most care to you before and after your surgery. They primarily oversee direct care—monitoring your vital signs, IV, and answering any questions you may have.		<b>Enfermera:</b> Sus enfermeras ofrecen el mayor cuidado para usted antes de y después de la cirugía. Ellos supervisan el cuidado principal de usted. Ellos ve a vigilar su signos vitales, su terapia intravenosa, y responder a cualquieras preguntas que usted pueda tener.
	<b>Nephrologist:</b> A nephrologist is a physician trained in kidney care, kidney transplants, and the diagnosis and treatment of kidney disease.		<b>Nefrólogo:</b> Un nefrólogo es un médico educado en el cuidado de los riñones, los trasplantes de los riñones y el tratamiento de las enfermedades de los riñones.
	<b>Social Worker:</b> A social worker will work directly with you and your family to help you with such things as: counseling, finances, insurance, or temporary housing.		<b>Trabajador Social:</b> Un trabajador social trabajará directamente con usted y su familia para ayudarle con cosas como: apoyo psicológico, las finanzas, los seguros, o vivienda provisional.



Above: editable form design and fold-over system.

## Bibliography

- Aicher, Otl. *Analogous and Digital*. Inge Aicher-School, 1994.
- Barrett, Sharon E. (2006). Health Literacy: Improving Quality of Care in Primary Care Settings, *Journal of Health Care for the Poor and Underserved*. 17, 690–697.
- Foster, Jeremy J. (1990). Standardizing Public Information Symbols: Proposals for a Simpler Procedure, *Information Design Journal*. 25, 9.
- Edlin, Mari. (2004). Health Understood, *Managed Healthcare Executive*. 14, 32–34.
- Kinross, Robin. *The Transformer*. 36. Hyphen Press, 2009.
- Kinross, Robin. *Unjustified Texts*. 313–318. Hyphen Press, 2002.
- Prounis, Charlene. (2005). Doctor-Patient Communication, *Pharmaceutical Executive*. 25, 9.
- Remington, Roger R., Fripp, Robert S.P. *Design and Science: The Life and Work of Will Burtin*. Lund Humphries, 2007.
- Sudore, Rebecca L. (2009). Unraveling the Relationship Between Literacy, Language Proficiency, and Patient-Physician Communication, *Patient Education and Counseling*. 74, 398–402.
- Taylor, Mark. (2008). The Billion Dollar U-Turn, *HnH Mag*. 8, 31–35.
- Tufte, Edward. *Visual Explanations*. Graphics Press, 1997.