AId6. Diabetes self-care based on the social determinants of health – the promotores approach

i. A global epidemic in a global economy

Type 2 diabetes (T2DM) disproportionally impacts minority and low-income people. Even when social determinants of *disease* like poverty, unemployment, and discrimination are widely recognized as barriers to health, medical discourse addressing diabetes identifies its cause within those that suffer the disease (their genes, lifestyles, cultural preferences). Patients themselves accept this discourse and in recent years T2DM has almost become part of the identity of ethnic groups like American Indians and Latinos.

T2DM is a major cause of disability and mortality worldwide. Its incidence increased five-fold between 1985 and 2000, becoming a global epidemic. During the same period and up to now global markets also expanded throughout the world. The more traditional and ecologically integrated the ethnic group was when markets entered their culture, the more diabetes has become a threat to their health.

Promotores' approach to T2DM takes into account this historical process. The disruption of traditional diet and activity patterns has played a significant role, but it is not the only mechanism. Because scarcity is the dynamic principle of the market economy and the experience of scarcity is stressful, a link between the two seems reasonable. As explained by allostatic load[1], wear and tear on the body from chronic mental stress accumulates over time and leads to chronic diseases, including T2DM. Although promotores never contradict what doctors tell their patients about what causes T2DM, they remain critically aware of its relationship with the experience of social distress and integrate this relationship in their approach.

Promotores take a 'social determinants of health' approach to T2DM by identifying and helping reverse the social determinants of disease (stress due to scarcity) and by promoting that which determines health. This is done at the micro-level of the face to face interaction by creating trust through the Nosotros; and at the community and social level, by identifying, promoting, and protecting trust networks. Trust allows people to share information, to explore new opportunities for productivity in society, and to reduce their experience of scarcity.

i. ii. From pathogenesis to salutogenesis using the Nosotros

To focus on the social determinants of health instead of disease in their work with patients that have diabetes, promotores practice "salutogenesis". Salutogenesis, which means "health generation", is a term created by Antonovsky to expand the focus that medicine has on

[1] See protocol "AIa5. Allostasis".

pahogenesis, which means generation of disease. According to Antonovsky, people that are healthy have a "sense of coherence" about their lives. A sense of coherence is acquired by people when their life has three qualities: it is *comprehensible*, *manageable*, and *meaningful*.

Promotores use the Nosotros model as a framework to practice salutogenesis. They use the quadrants of the True Vector (what we want and why we want it) to assess and promote comprehensiveness in the patient's experience; and the quadrants of the Good Vector (what we do and what we get) to assess and promote manageability. When the True and Good vector are linked together from the heart in a Nosotros, the experience can be considered meaningful. In this manner promotores help patients *generate health* in their lives, one Nosotros at a time.

i. iii. Shared meaning as link between historical and biological processes

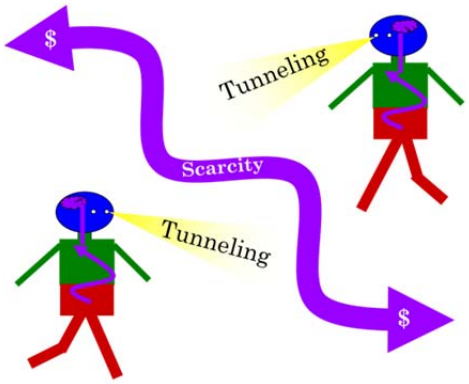
Normal and toxic stress

Promotores call normal stress[2] the difficult and at times painful life experiences that make us learn and mature, making us wiser and more stable. Toxic stress in the other hand comes from negative experiences from which no lesson can be distilled. They remain unresolved, becoming a source of instability that can cause allostatic load. Toxic stress weakens our sense of coherence.

Under scarcity conditions, we have to manage and comprehend our experience within a narrow view. We are at risk and need to get into a better situation soon. Our attention becomes

[2] See promotores definition of health in protocol "AId1. Advanced Primary Care (APC) Promotores en Presencia Viva".

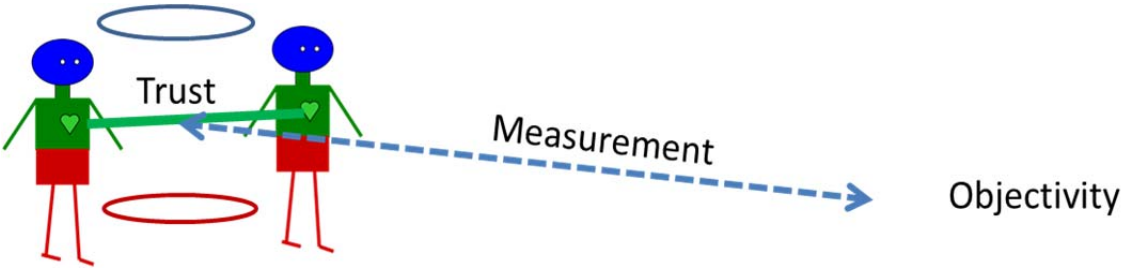
focused and we leave important information out of our radar. The narrow view of the world we take under stress caused by scarcity is called “tunneling”. Tunneling deprives us from information about the lesson of difficult experiences: it makes stress toxic. Furthermore, since scarcity is a “natural” state in a market economy, that there is a lesson is not even considered: scarcity is “the way things are”. The more we live under the belief of scarcity, the harder it is to keep our sense of coherence and therefore, our health. Promotores non-judgmental, empathic listening to patients helps them verbalize their story and reflect on their experiences. Together they explore their meaning and what to do about them. They also promote trust in the patients’ lives. This generates health and helps prevent tunneling and toxic stress.



Walking the patient’s health story

In order to support patients in diabetes self-care, promotores need to understand their experience of having diabetes. They need to listen to their story of dealing with the disease, from the moment of diagnosis, to the time they meet. A Storyboard can be a useful tool to accomplish this. As mentioned above, what causes diabetes is not yet fully understood, but patients have interpretations of their own and it is important that they share them. Regardless of known and unknown causes, the biological damage caused by diabetes must be immediately addressed and carefully treated. Patients are told that they will have diabetes for the rest of their lives and are pressed to manage the disease with vivid descriptions of its late complications.

Even if they themselves do not have diabetes, promotores first objective is to make patients feel understood. They accomplish this by listening to their story of having the disease in a non-judgmental way and asking for clarification as needed to get as close to the patients’ view point as possible. It is in this narration and creation of shared meaning that promotores and patients walk together and the outcomes of the Nosotros (“what we want to happen” and “what we were able to do”) become possible. It is from the platform of a trusting relationship that patients can look at diabetes objectively, make realistic and measurable goals, and put them in action.



Dealing with diabetes biological damage

At diagnosis, patients are referred by their doctors to attend diabetes education sessions. These sessions are often impersonal and not very effective. Patient-focused diabetes education is therefore given at group visits as part of the APC program[3]. In diabetes education, patients learn about how their blood sugar and insulin fail to interact properly to give energy to their cells. They also learn about the two types of diabetes (types 1 and 2) and about the complications that can arise when the small vessels of the eyes, kidneys, heart, and feet are damaged. Promotores make sure patients understand the available explanations of the disease process and how to minimize the harm it can cause to their body.

Components of diabetes education

Besides existing explanations of the disease process, patients need to learn the following:

- Treatment options and optimal use of medication.
- Management of their metabolism: food, physical activity, and sleep.
- Monitoring blood glucose.
- Preventing, detecting, and treating abnormally low and high blood sugars.
- Preventing, detecting and treating chronic complications (damage to eyes, feet, heart, and kidneys).
- Developing personal skills to achieve desired changes in daily routines.
- Developing personal skills to care for emotional and relational needs.

Promotores assess patients' knowledge and skills, provide appropriate information, and ask the nurse case manager to make a referral if they think the patient can benefit from more diabetes education.

The overall goal of diabetes education is to give patients an understanding on *how their food intake, level of activity, dose of medication, and stress levels are connected to each other, to their blood sugars, and to their symptoms (how they feel) in order to achieve self-care.* All these components work together in a unique manner for each person, and each person has to discover his or her own self-care formula. The promotores' objective is to support each patient in this process of discovery, integrating the experience in the patient's mind and heart so

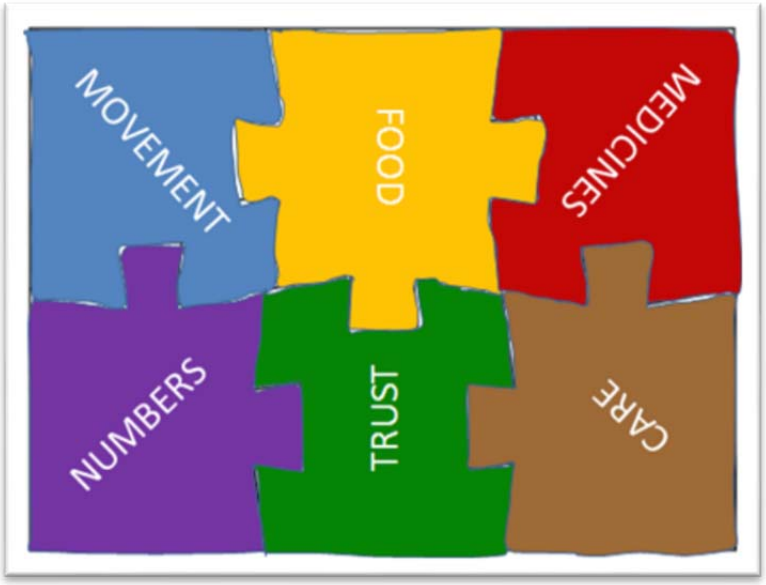
[3] See protocol "AId11. Group visits: health education and multidisciplinary attention to the patient's health story".

diabetes management becomes part of their self-care in continuing their life's story. To organize their complex task, promotores utilize (and continually improve) a tool called the Six Piece Puzzle.

i. iv. The Six Piece Puzzle of self-care for patients that have diabetes

Promotores work with a patient that has diabetes is organized as a puzzle that shows the components of diabetes self-care as interdependent parts of a whole. Each puzzle is unique for each person. The components of the puzzle are:

- Trust
- Food
- Movement
- Care
- Medicines
- Numbers



Each puzzle piece has the following subcomponents:

COMPONENT	SUBCOMPONENTS
TRUST	1. Expresses what is wanted and why, while regulating emotions.
	2. Acts, keeping commitments, to obtain satisfactory results.
	3. Is able to increase trust in Ecomap.
	4. Practices Nuestra Mesa (plans and reflects on a shared meal with loved ones).
	5. Is connected to community trust networks.
FOOD	1. Understands role of food in personal metabolism.
	2. Knows what healthy food can substitute unhealthy food.
	3. Understands stages of change and makes goals to improve nutrition.
	5. Achieves a desired change that improves nutrition.

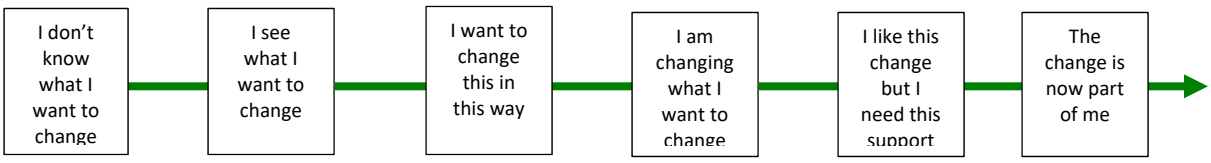
	6. Helps other person make desired nutrition change.
MOVEMENT	1. Understands role of movement in personal metabolism.
	2. Knows what healthy movement patterns can substitute unhealthy ones.
	3. Understands stages of change and makes goals to improve movement.
	4. Achieves a desired change that improves movement.
	5. Helps other person make desired movement change.
CARE	1. Has healthcare coverage to receive medical care.
	2. Has calendar for keeping appointments and arranges transportation to them.
	3. Knows what to do if cannot keep appointments.
	4. Practices zoom-in to detect, name, and address symptoms.
	5. Knows what to do to care for feet, eyes, heart and kidneys.
MEDICINES	1. Knows what medicines are for, what dose to take, and when to take them.
	2. Has money or knows how to access financial aid to pay for medicines.
	3. Has a method to take medicines as prescribed.
	4. Can relate intake of medicines to symptoms and knows who to ask for help if needed.
NUMBERS	1. Knows how to check blood sugar.
	2. Knows when to check blood sugar.
	3. Responds appropriately to abnormally low and high blood sugars.
	4. Knows ABC's (A1C, blood pressure, cholesterol) personal index and the normal range.

Promotores use the puzzle as a visual aid to track and report weekly progress on each of the components.

i. v. Building the Six Piece Puzzle utilizing the six steps of change

Promotores work on their patient's Six Piece Puzzle starting where the patient is at. Becoming aware of what we are currently doing, and *why*, is our "terrain for change". All habits serve a purpose. To create a new habit, a new purpose has to make sense in the context of our story, and project a future we want for the reasons we value. Promotores begin to discover patients' terrain for change by asking them to track for at least three days what, when, and how much they: eat, move and sleep, take their medicines, check their sugar and become aware of their symptoms. Once this information is available, promotores and patients assess what the patient is doing and make sense of it together.

Patients are encouraged to identify current habits and what they obtain from them. Promotores and patients creatively map the terrain of change and identify goals to make patients' habits closer to the goals of the Six Piece Puzzle. They together walk the stages of change (Prochaska's) as trajectories that move patients from impairment to functioning in their diabetes self-care[4].



[4] See the tool: "Method of change for diabetes self-care: building the Six Piece Puzzle".

APC Promotores

Building on their knowledge and skills as state-certified community health workers, APC Promotores scope of work is tailored to function within the primary care environment.

Their goal is to assist in maintaining and increasing trust between patients and their medical home by:

- listening to patients in their life context to understand their needs and nurture their capacities;
- facilitating patients' compliance with clinical treatments;
- promoting patients' overall wellbeing in their homes and neighborhoods;
- educating the clinical team about the social determinants of their patients' health.

APC promotores carry out this function under the following pathways of care:

1. **Urgent Brief Facilitation**. Emergency assignments to attempt a face-to-face contact with a patient in a critical condition. Promotores might arrive to patient's home unannounced or after clinical staff has communicated with patient and explain the urgency of the contact.
2. **Brief Facilitation.** Focused interventions in order to carry out a specific task; obtain information that explains patient's behavior; or provide education to patient and caregivers about the advantages of primary, secondary, or tertiary prevention care/procedures. These home visits might include the presence of a family medicine resident doctor, a behavioral health consultant, or any other member of the clinical team.
3. **Transitions of Care**. Overall support of the post-hospital discharge period, including the first 48 hours at home; a timely face-to-face reconnecting with PCP; and the ability of patient and caregiver to appropriately detect "red flags" in order to prevent ED visits and readmissions.
4. **Chronic Disease Nosotros**. An intervention focused on shared-meaning that nurtures patients' capacity for self-care integrating medical plans of care with relational healing and skills. It is a personalized support for patients covering six competence domains: trust, food, movement, care, medicines and numbers.
5. **Community.** Reactivation of a past relationship between promotores and specific patients that facilitate care delivery under new conditions or circumstances.

Due to the nature of their work APC promotores also:

- Are proactive and creative in responding to fellow promotores need of support and advice.
- Attend required meetings and ongoing trainings as required by their role in the multidisciplinary team.
- Mutually develop critical thinking, self-awareness, and resilience by discussing and problem-solving complex cases in group discussions.
- Function as advocates and join efforts in neighborhoods and other public activities that foster family and population health.

BRIEF FACILITATION - APC

- Date of referral_____

- Task requested

  _____
  _____
  _____

- Time sensitivity _____

- Expected feedback

  _____
  _____
  _____

- Feedback

  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____

- Additional findings

  _____
  _____
  _____
  _____
  _____

- Promotor(a)'s recommendation

  _____
  _____
  _____

- Date of completion_____ Reported to supervisor_____
  Date/time

ADVANCED PRIMARY CARE - PROMOTORES WORK

INFORMATION BETWEEN PROMOTORES AND CLINICAL TEAM

Does patient have a promotor(a)? Who is s/he? Who is the doctor? ¿what are preferences for communication?
Is patient in Latent Period or in Stages of Change? What is the story on the stabilization efforts of the Latent Period? How long does the latent period last?
Which pieces of the puzzle are unstable? Which Are unstable?
If patient is out of Latent Period, what is patient's chosen change? is it wise to have patient make more than one change at a time?
Which Stage of Change is patient in? How can the clinical team support patient as s/he moves from one stage to the next?
Does patient has list of questions or concerns developed with promotor(a) to bring to PCP appointment or Group Visit?
Does doctor have questions or requests for the promotor(a) to bring to the patient?
If there was disengagement due to lack of generativity, what was the reason & what is the lesson from this case to our work? What would reactivate this case?
If there was disengagment after goals were reached, what relationship is maintained with the patient?

A1C>9

Referral to Promotor(a): To find new ways to improve self-care in life context

LATENT PERIOD
Develop relationship
Stabilization of clinical care
Stabilization of social environment

What we want to happen

What we were able to do

Lack of generativity

Disengage

?

12 weeks

Generativity

Discrepancy between what is good for health and what is being done

Likely scenarios made explicit and addressed. Change objectively described

Change is realistic. Accountability to self and others

Better understanding of what the change means in life context

Experience self-care improvement as possible within other-care

STAGE 1
I don't know what I want to change

STAGE 2
I see what I want to change

STAGE 3
I want to change this, in this way

STAGE 4
I am changing what I want to change

STAGE 5
I like this change, and I need this support

STAGE 6
The change is now part of me

Disengage

?

FUNCTIONAL ASSESSMENT
- Learning &applying knowledge
- General tasks and demands
- Mobility
- Domestic life
- Major life areas (work & school)
- Community, social & civic life
- Self-care

Looking after one's health
TRUST (5 competences)
MEDICINES (5 competences)
NUMBERS (5 competences)
FOOD (5 competences)
MOVEMENT (5 competences)
CARE (5 competences)

(Constant improvement of the puzzle by the teams)

3 DAYS AROUND THE CLOCK
(zoom-ins, medicines, numbers, food, activity & interactions)

HEALTH EDUCATION
-According to science this is good for health
-It can be put it in practice in this way

IMAGINE IF…
You were able to endure your change's greatest challenge

MY CHANGE STATEMENT
I want to change this. For this reason. In this way

CHANGE FACILITATORS
Named. Engaged. Activated.

CHANGE BARRIERS
Named. Addressed. In radar.

STORYBOARD "I DID IT"
Lessons. Improve Change Statement

STORYBOARD "I DIDN'T DO IT"
Lessons. Improve Change Statement

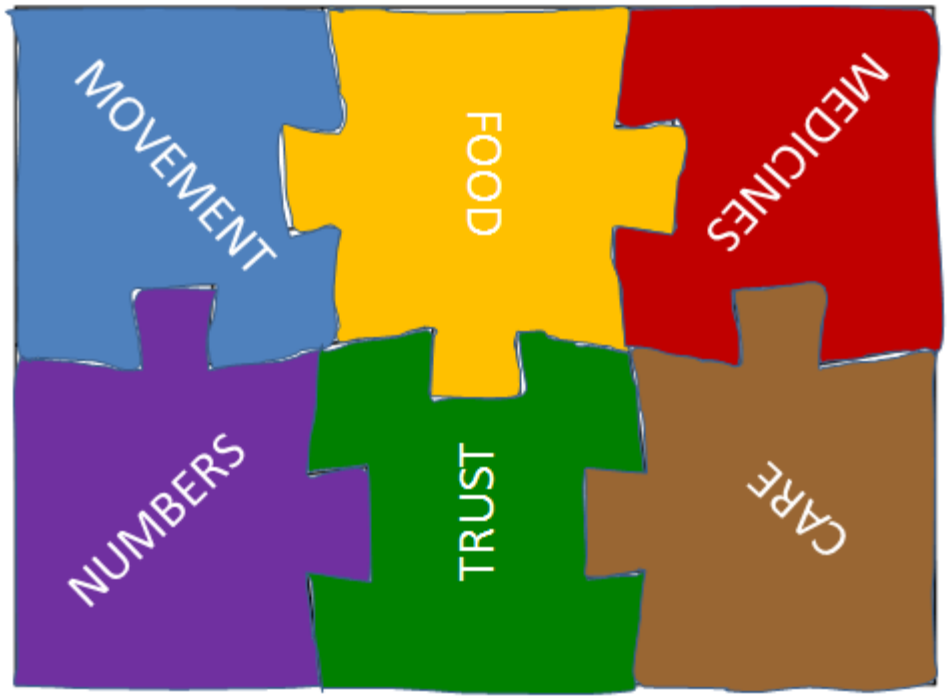
IMAGINE IF…
You keep this change without the presence of the promotor(a)

PATIENT TEACHER
Walk the stages of change with someone you care about

Better self-care

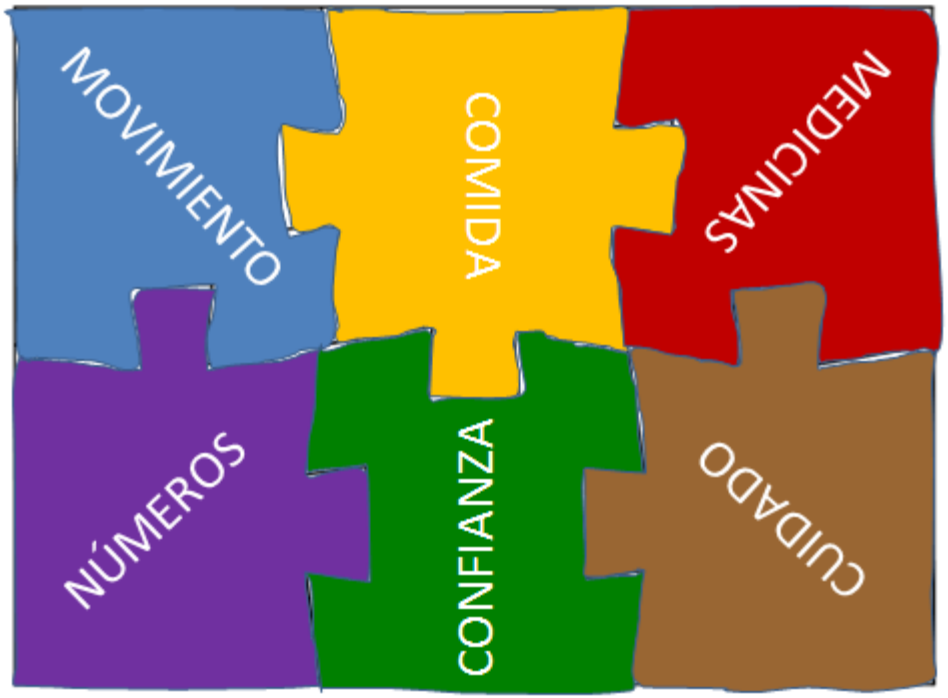
METHOD OF CHANGE FOR DIABETES SELF-CARE

Building the Six Piece Puzzle

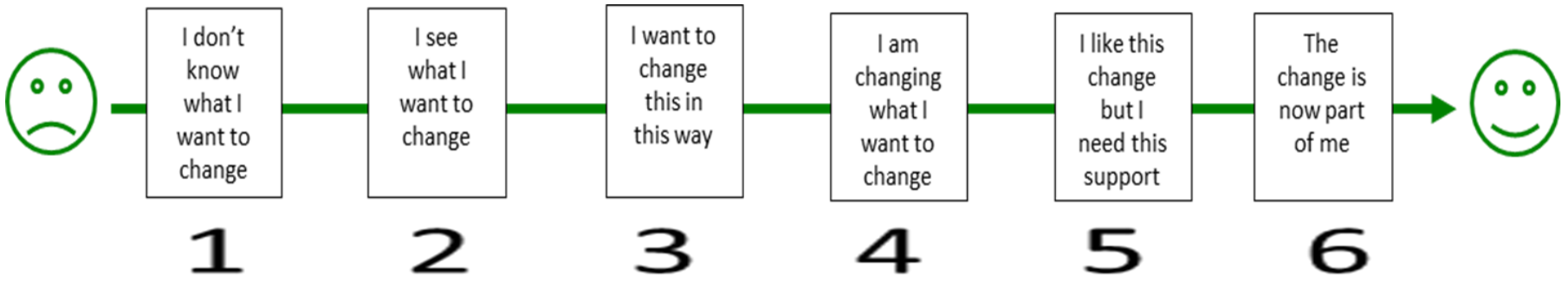


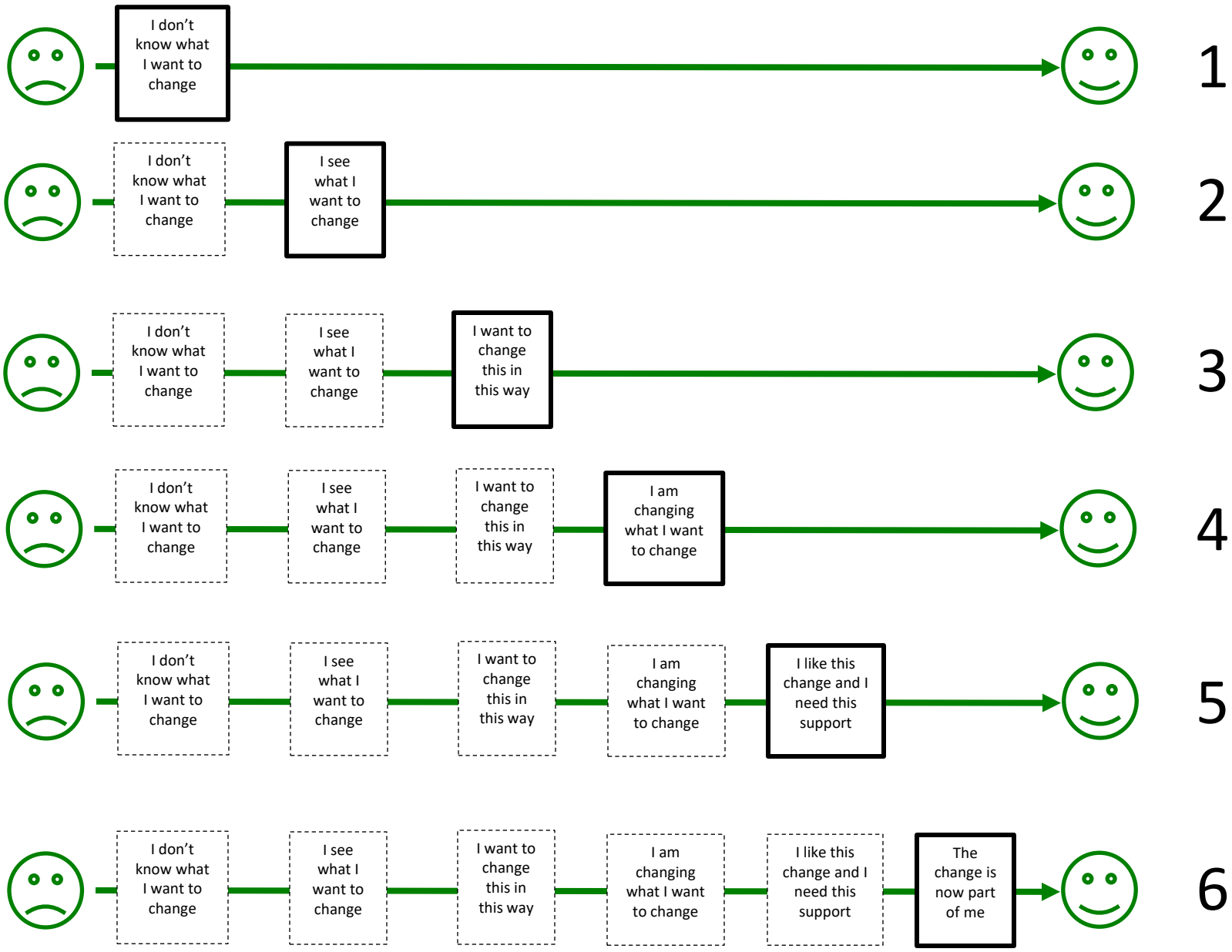
MÉTODO DE CAMBIOS PARA EL AUTOCUIDADO DE LA DIABETES

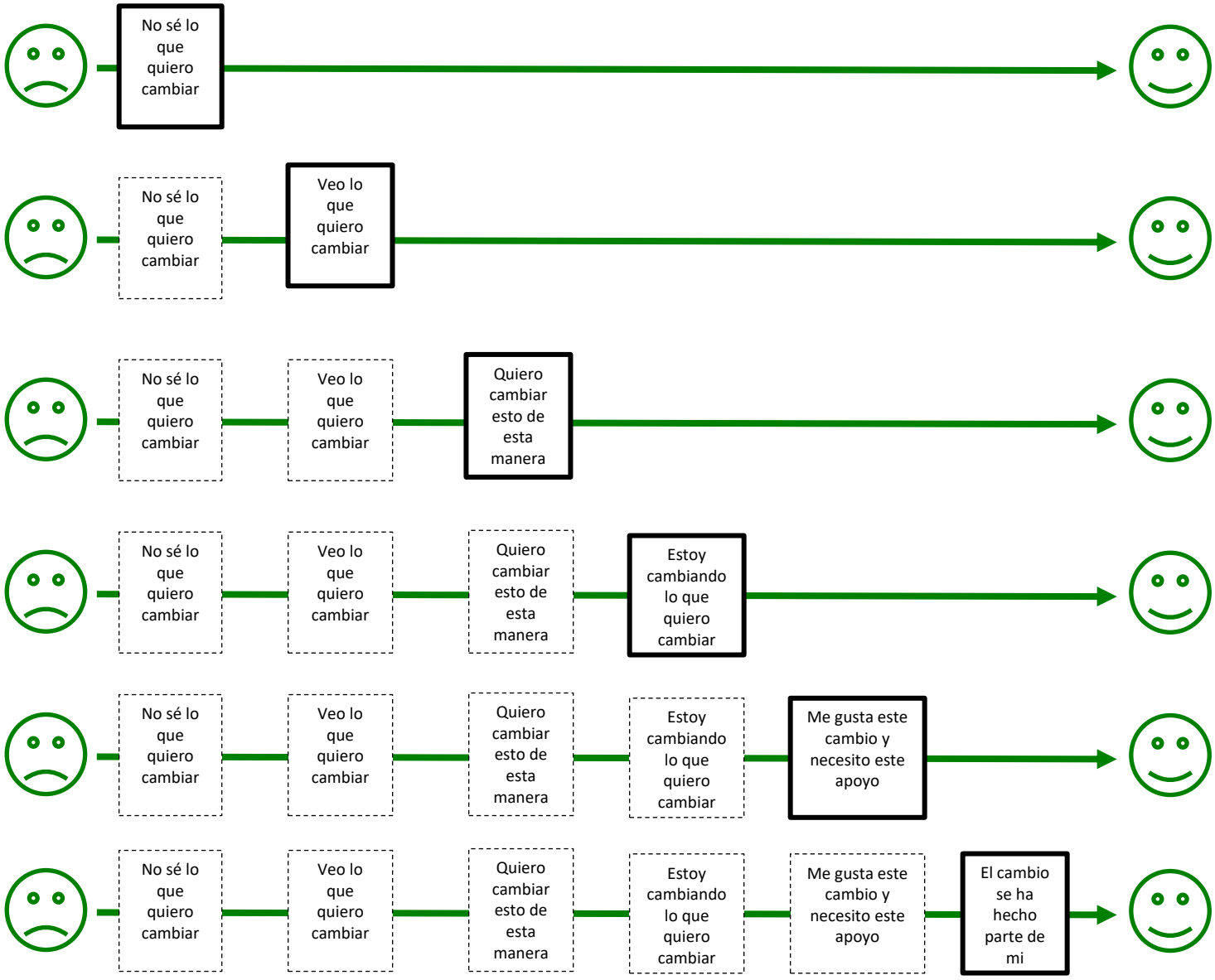
Construyendo el Rompecabezas de Seis Piezas



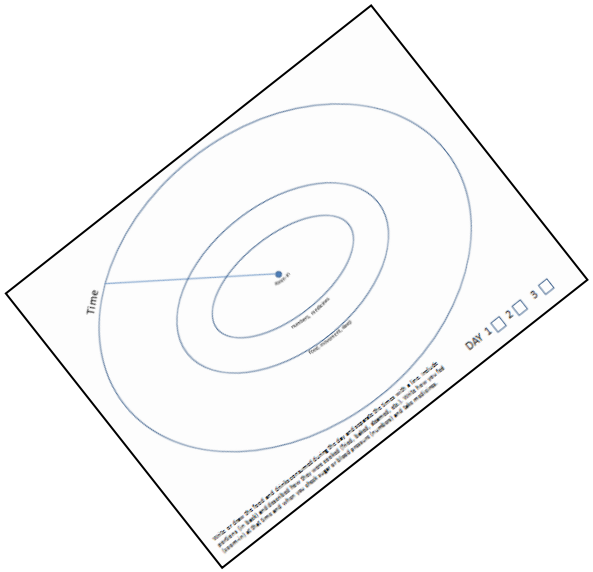
(model for visual tool)

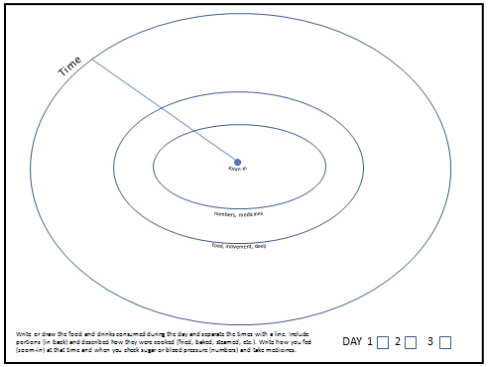


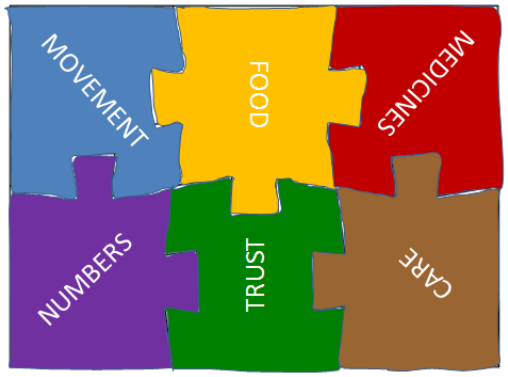

I don't know what I want to change
1
I don't know what I want to change
I see what I want to change
2
I don't know what I want to change
I see what I want to change
I want to change this in this way
3
I don't know what I want to change
I see what I want to change
I want to change this in this way
I am changing what I want to change
4
I don't know what I want to change
I see what I want to change
I want to change this in this way
I am changing what I want to change
I like this change and I need this support
5
I don't know what I want to change
I see what I want to change
I want to change this in this way
I am changing what I want to change
I like this change and I need this support
The change is now part of me
6

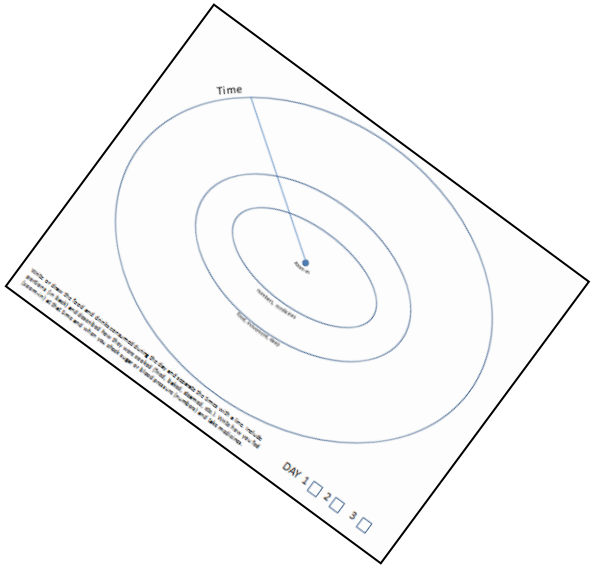

No sé lo que quiero cambiar
No sé lo que quiero cambiar
Veo lo que quiero cambiar
No sé lo que quiero cambiar
Veo lo que quiero cambiar
Quiero cambiar esto de esta manera
No sé lo que quiero cambiar
Veo lo que quiero cambiar
Quiero cambiar esto de esta manera
Estoy cambiando lo que quiero cambiar
No sé lo que quiero cambiar
Veo lo que quiero cambiar
Quiero cambiar esto de esta manera
Estoy cambiando lo que quiero cambiar
Me gusta este cambio y necesito este apoyo
No sé lo que quiero cambiar
Veo lo que quiero cambiar
Quiero cambiar esto de esta manera
Estoy cambiando lo que quiero cambiar
Me gusta este cambio y necesito este apoyo
El cambio se ha hecho parte de mi

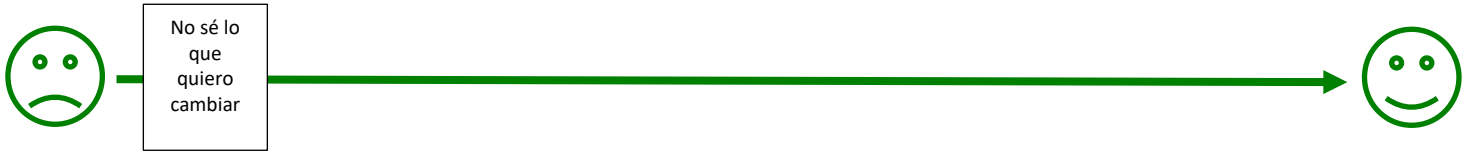
STEP 1: Complete a 3 day log for food, physical activity, sleep, numbers, medicines and zoom-ins to determine patient's "terrain for change". See how what the patient is doing relates to the Six Piece Puzzle (working together addresses the "trust" component).



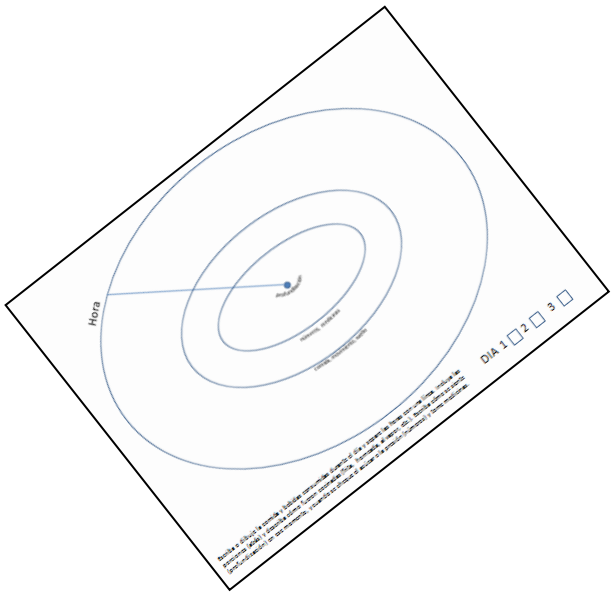


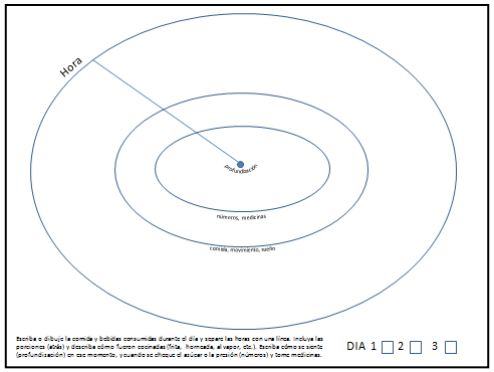


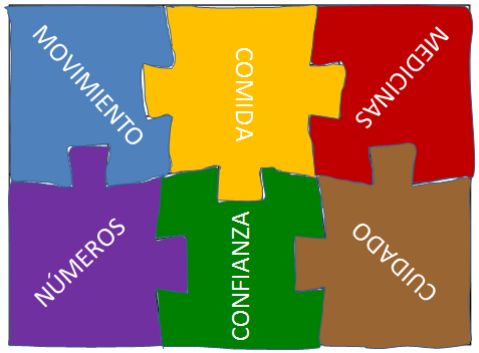


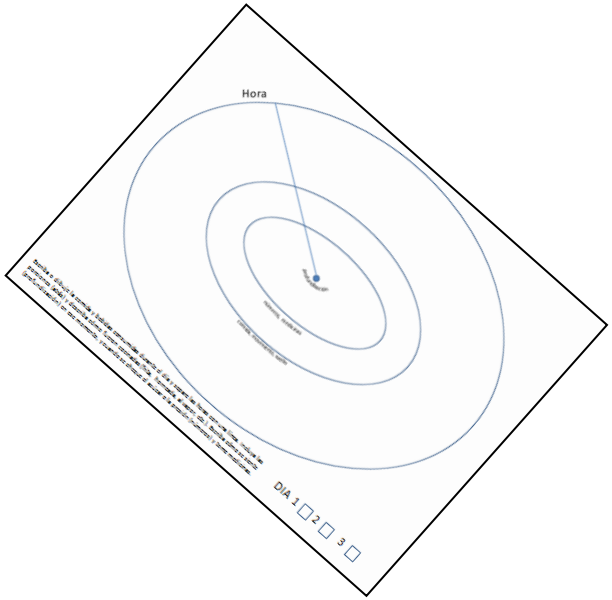


PASO 1: Complete un diario de 3 días de comida, actividad física, sueño, números, medicinas y profundizaciones para determinar cuál es el "terreno de cambio" del paciente. Vea cómo lo que el paciente está haciendo se relaciona con el Rompecabezas de Seis Piezas (el trabajar juntos cubre el componente de "confianza").



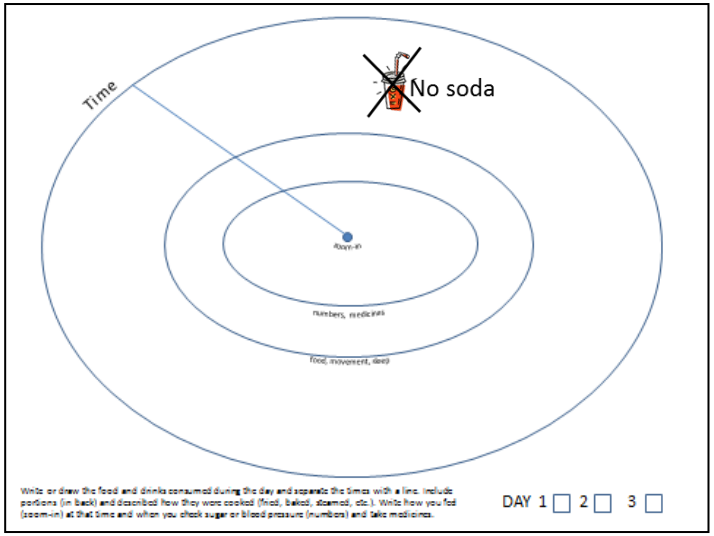


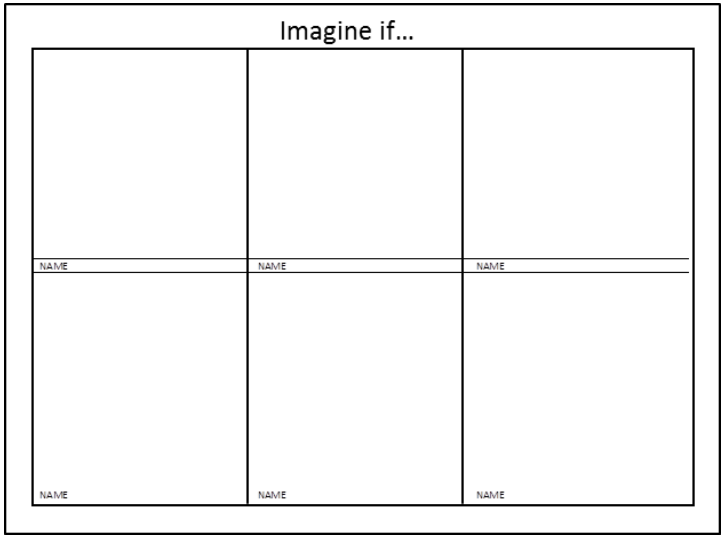




2

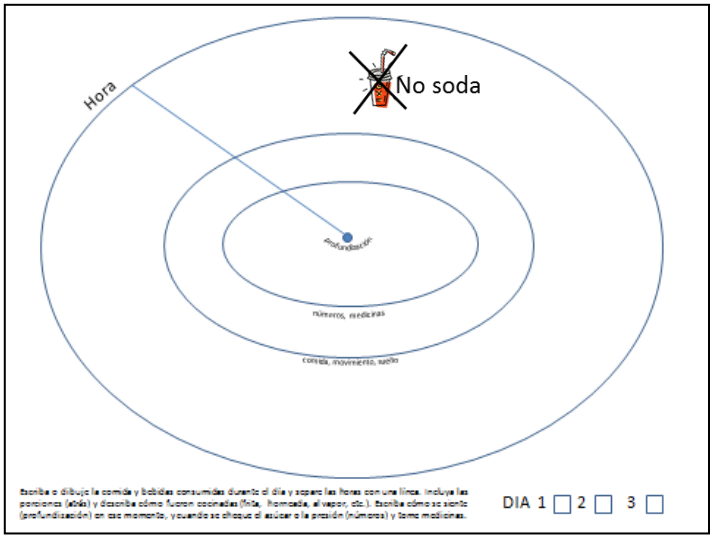
STEP 2: Let the patient observe his or her terrain of change and ask what "jumps" as something that he or she would like to change. Start with a change that is significant for diabetes management but that has a good chance of being successful. Make the desired change very clear and objective: there should be no confusion as to what the patient wants to change and why. Write or draw the desired change in the terrain of change. Imagine with the patient scenarios in which the change might become difficult to implement and identify the resources that exist to face them. Identify the biggest threat to the desired change. Make an "Imagine if…" where the patient succeeds when facing that great threat.

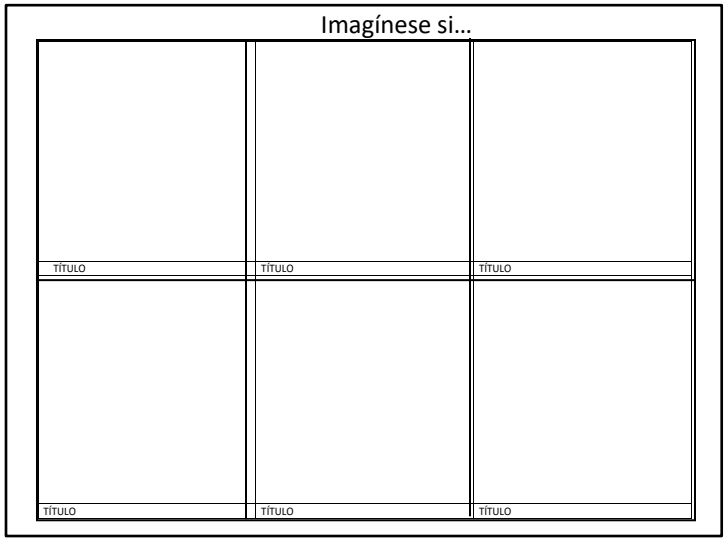


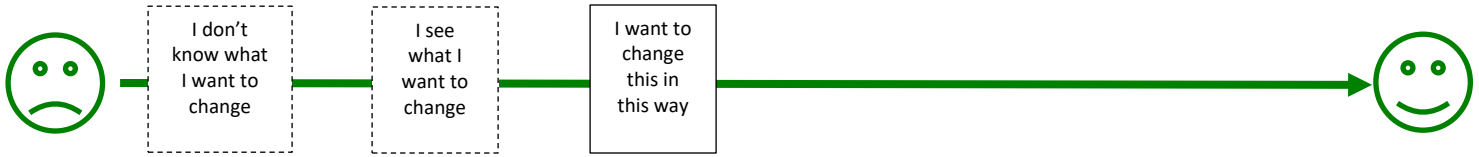


2

PASO 2: Deje que el paciente observe su terreno de cambio y pregúntele qué salta a su vista como algo que quiere cambiar. Empiecen con un cambio que es significativo para el manejo de la diabetes pero que tiene buena probabilidad de éxito. Hagan el cambio deseado muy claro y objetivo: no debe haber confusión sobre qué es lo que el paciente quiere cambiar y por qué. Escriban o dibujen el cambio deseado en el terreno de cambio. Imagine con el paciente escenarios en que el cambio se hace difícil e identifiquen los recursos que existen para enfrentarlos. Identifiquen el reto más grande para el cambio deseado. Hagan un "Imagínese si…" en que el paciente logra enfrentar ese gran reto.







3

STEP 3: From the information that emerged during the Imagine If…, make a statement that reflects the desired change, the challenge, and the resources found to face it. Write the "what", the "why" and the "how" of the change:

I want to make this change in my self-care

_____

_____

I want to make this change because

_____

_____

I want to make this change in this way_____

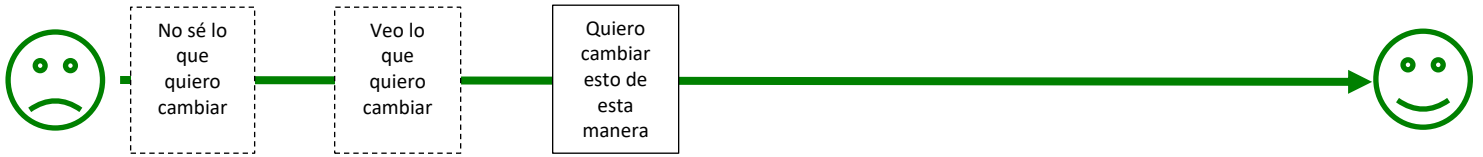
_____

_____

_____

_____

Use creativity to make the statement meaningful and attractive for the patient and place it in an appropriate place to serve as a guide for change.



3

PASO 3: De la información que surgió en el Imagínese si…, hagan una declaración que refleje el cambio deseado, el reto y los recursos encontrados para enfrentarlo. Escriban el "qué", el "por qué", y el "cómo" del cambio:

Quiero cambiar esto en mi auto-cuidado

_____

_____

Quiero hacer este cambio por esta razón

_____

_____

Quiero hacer este cambio de esta manera

_____

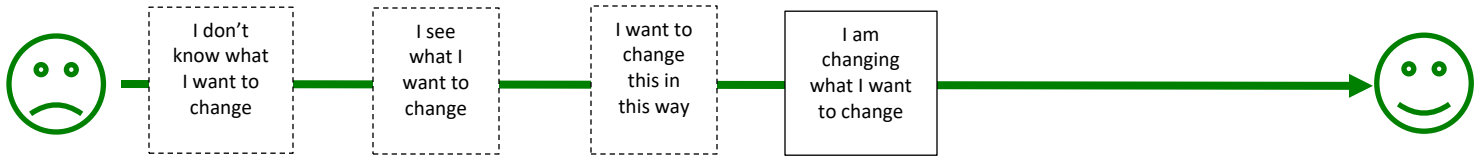
_____

_____

_____

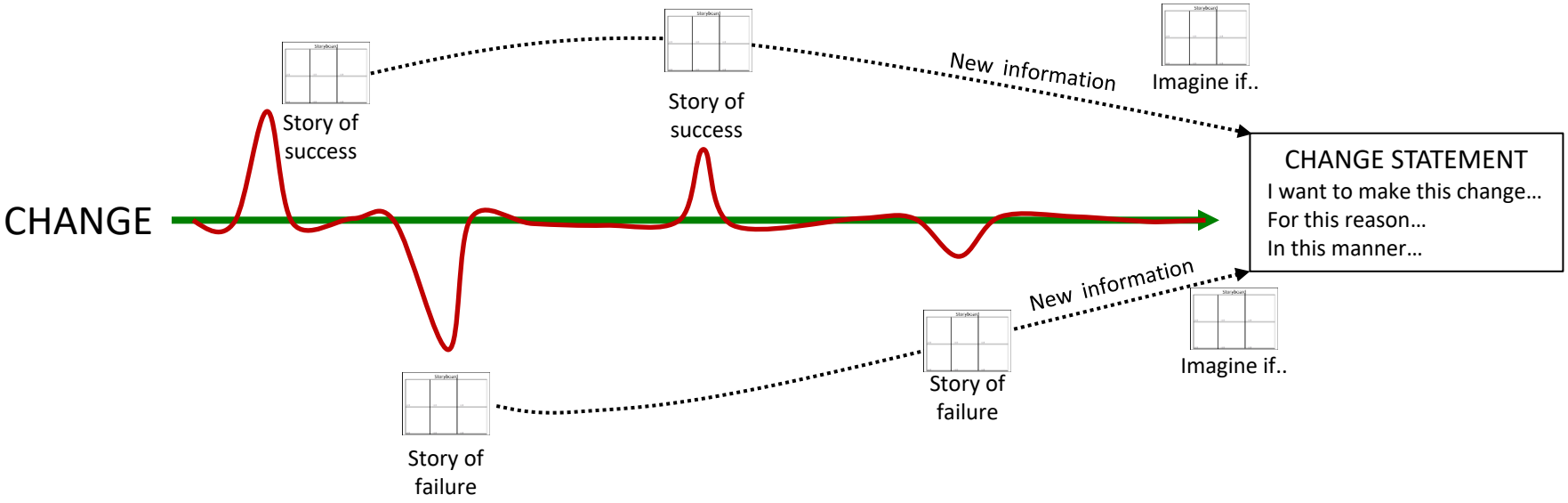
_____

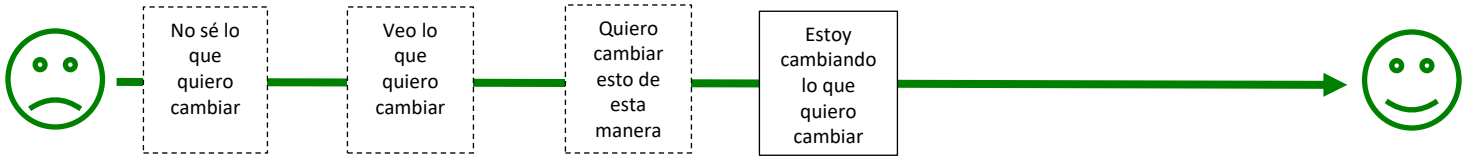
Hagan esta declaración con creatividad para que sea significativa y atractiva al paciente y colóquenlo en un lugar apropiado para que sirva de guía hacia el cambio.



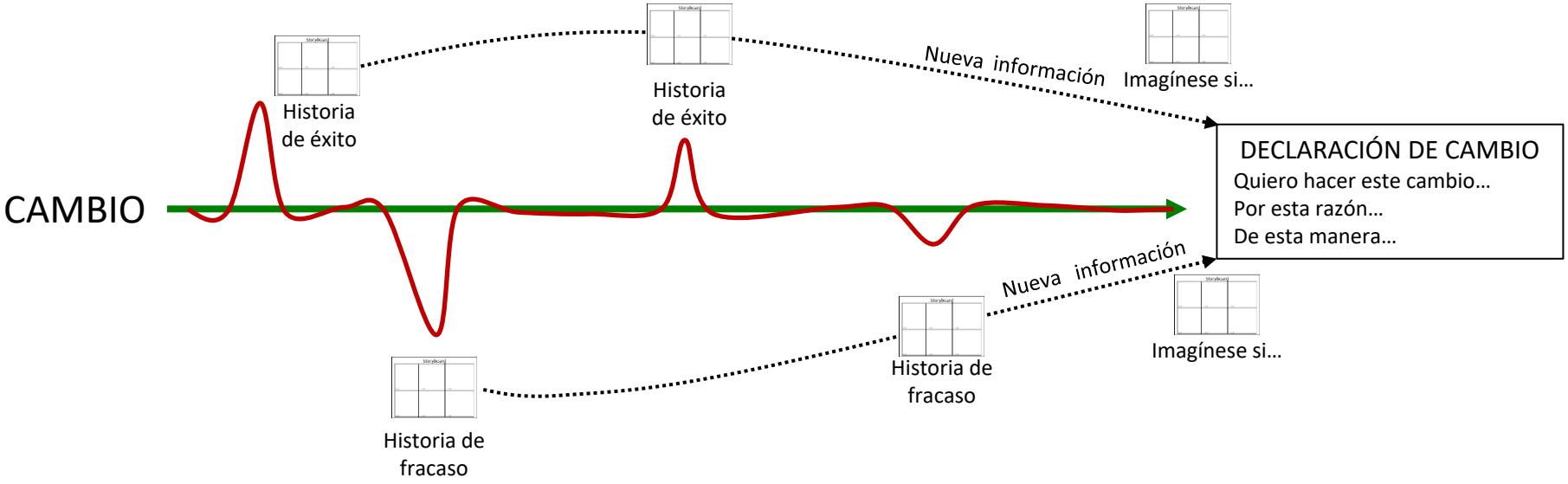
4

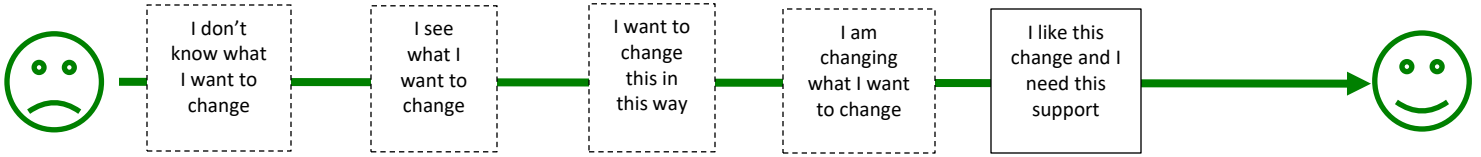
STEP 4: Walk together the implementation of the change and learn with the patient as you become part of his or her health story. There will be successes and failures as the patient tries to implement the change. Keeping daily logs can be useful. Make a Storyboard of each time the patient failed to implement the change; and when he or she was successful at facing a difficulty that shows a new capability. Make sure the stories include the resources used, including the support provided by the promotor(a). New information will emerge that was not considered before. Make Imagine if.. exercises and modify the change statement as needed to make success more likely.





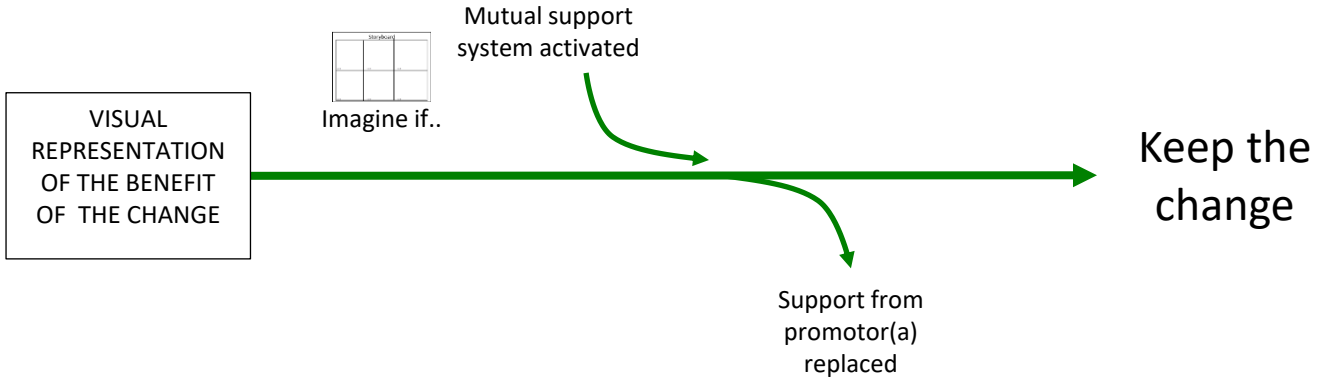
PASO 4: Caminen juntos poniendo en práctica el cambio y aprenda con el paciente haciéndose parte de su historia de salud. El paciente tendrá éxitos y fracasos al tratar de poner en práctica el cambio. Llenando diarios será útil. Hagan una Historia en Escenas cada vez que el paciente fracase en implementar el cambio; también cuando logre éxito al enfrentar una dificultad que muestra una capacidad nueva. Asegúrense que las historias incluyan los apoyos utilizados incluyendo el que ha proveído el o la promotor(a). Nueva información surgirá que no fue considerada anteriormente. Hagan ejercicios de Imagínese si… y modifiquen la declaración de cambio según sea necesario para hacer el éxito más posible.

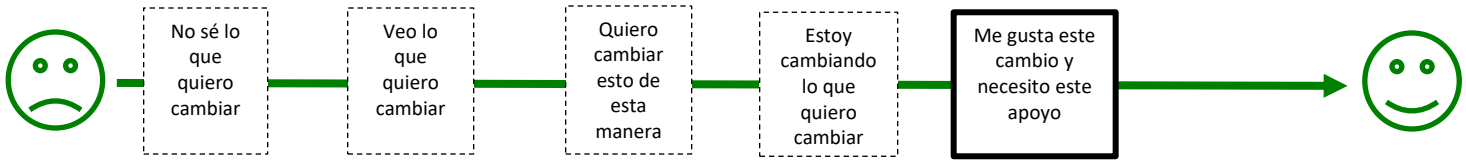




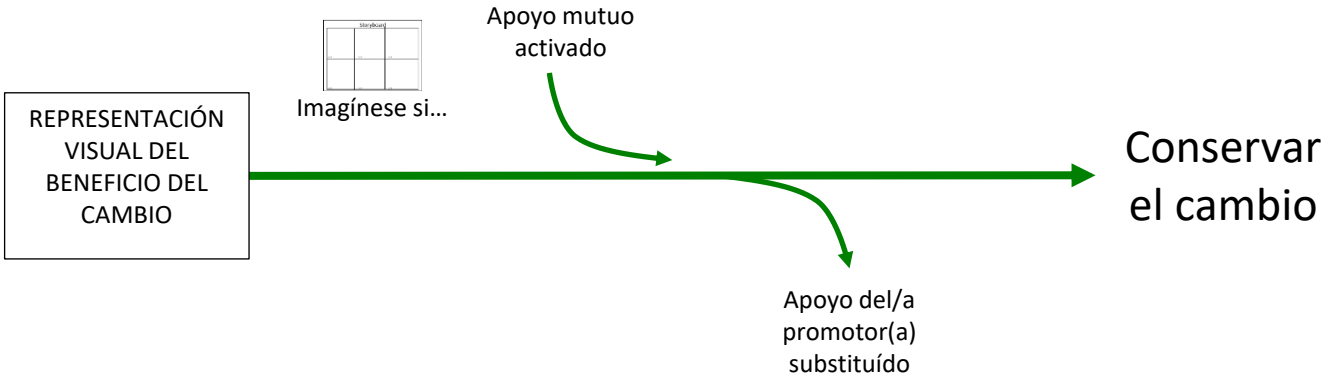
5

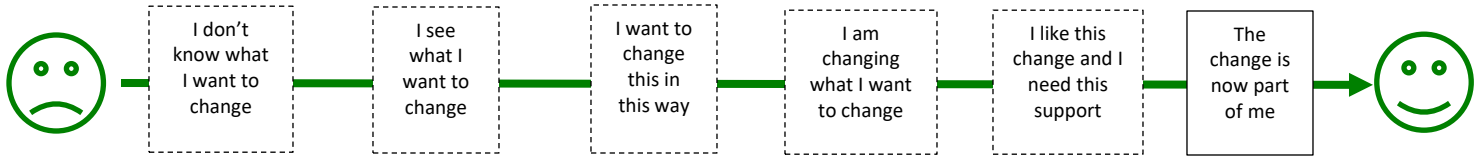
STEP 5: After a few weeks of implementing the change and learning from it, the patient should experience an improvement in his or her diabetes management. At this time an assessment should be made about why this change has been good and why it is good to retain it. Make a visual representation of the benefit brought about by the change that is meaningful to the patient. Also, at this time the support provided by the promotor(a) should be replaced by other support to continue the patient's health story. Make an Imagine if… in which this replacement support becomes activated. It is important that the patient puts into his or her own words the support he or she needs. This can be strengthened by offering support to others. The promotor(a) facilitates mutual support systems using the Nosotros model and Nuestra Mesa.



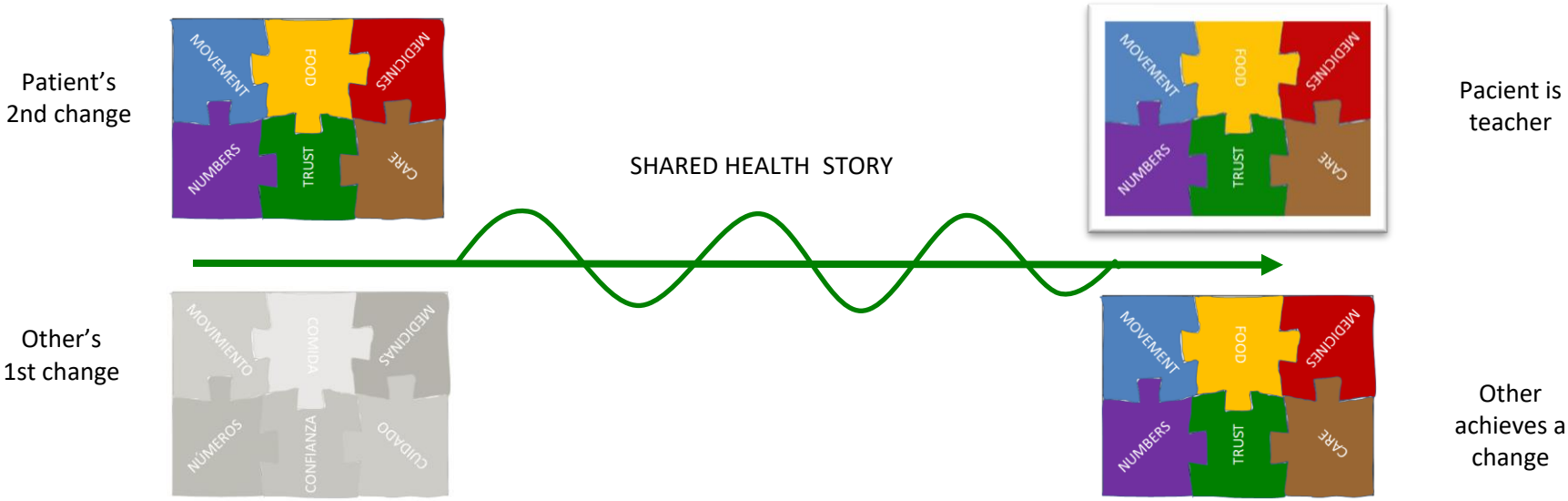


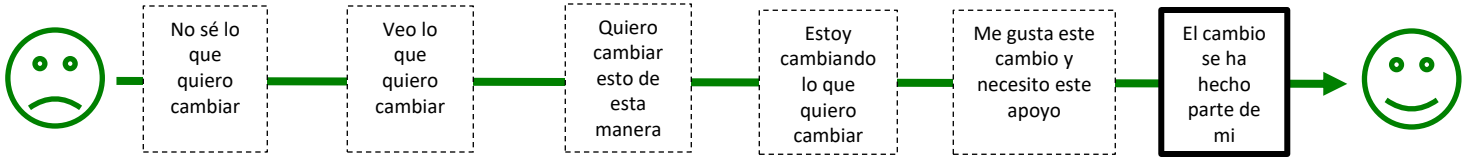
PASO 5: Después de varias semanas de poner en práctica el cambio y aprender de ello, el paciente tendrá la experiencia de una mejora en el manejo de su diabetes. Es oportuno en este momento hacer una evaluación a cerca de porqué el cambio es bueno y por qué vale la pena conservarlo. Hagan una representación visual del beneficio que ha traído el cambio que sea significativa para el paciente. Además, es oportuno que el apoyo brindado por el o la promotor(a) sea substituído por otro apoyo para que la historia de salud del paciente continúe. Hagan un Imagínese si… en el que este apoyo substituto se activa. Es importante que el paciente ponga en sus propias palabras el apoyo que necesita. Esto se puede facilitar ofreciendo apoyo a los demás. El o la promotor(a) facilita sistemas de apoyo mutuo usando el modelo del Nosotros y Nuestra Mesa.





STEP 6. If the 5 prior steps have been successful, the patient should be able to make another change that makes the Six Piece Puzzle of his or her diabetes management stronger. To make the change method a skill that the patient can continue applying in his or her life, it would be best if he or she implements a second change while helping other person make a first change. Promotores support the patient as they become teachers of diabetes management.





PASO 6. Si los 5 pasos previos han tenido éxito, el paciente podrá hacer otro cambio que fortalece su Rompecabezas de Seis Piezas. Para hacer que el método de cambio se haga una habilidad que el paciente continúe aplicando en su vida, será mejor que ponga en práctica el segundo cambio mientras le ayuda a otra persona a hacer un primer cambio. Los promotores apoyan al paciente a que se convierta en maestro del manejo de la diabetes.

Historical trajectories of A1c in FHC population with type 2 diabetes.

Rationale: to provide historical data on A1c trajectories among patients with uncontrolled type 2 diabetes (A1c>9%) in our practice, providing a benchmark quantifying expected range for "regression to the mean" in our practice population.

Historical data range: 3 Oct 2011 to 25 Aug 2016

Data below are for patients with initial A1c reading $\geq$ 9.0%.
Each subsequent column calculates average *cumulative* change from baseline across the FHC practice cohort with type 2 DM at each subsequent A1c "measurement occasion," as we did in the paper.

The average FHC patient with A1c >9 at baseline had average A1c of 9.67. The A1c tended to fall over the next 5 measurement occasions, averaging a -.73 reduction, and then plateaued.

For comparison, in the self-care generativity group the change was 10.1 to 8.4, a difference of 1.7.
Outreach decreased from 10.5 to 8.9; difference of 1.6.
Stabilization decreased from 10.3 to 9.0; difference of 1.3.

	Baseline A1c	2nd	3rd	4th	5th	6th	7th	8th	9th
	9.67%	-0.45	-0.53	-0.57	-0.66	-0.73	-0.78	-0.73	-0.74
N	5728	4372	3281	2444	1786	1282	903	638	453

Legend: Table listing baseline A1c and subsequent changes from baseline during follow-up A1c measurement occasions, among all FHC patients with diabetes.

The data demonstrate that the practice outperformed regression to the mean.

Supplemental Table. Incidence Rate Ratios for Negative Binomial Models, With 95% CIs in Parentheses

Outcome	Urgent-**C**are **V**isits**, IRR (95% CI)**		Emergency **V**isits**, IRR (95% CI)**		Hospital **V**isits**, IRR (95% CI)**	
	Unadjusted	**Adjusted**	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Intercept	0.68 (0.55-0.83)	0.45 (0.23-0.88)	0.38 (0.29-0.50)	0.31 (0.14-0.70)	0.15 (0.10-0.22)	0.07 (0.02-0.25)
Stabilization	1.22 (0.93-1.61)	1.11 (0.86-1.44)	2.32 (1.64-3.28)[a]	1.74 (1.27-2.39)[a]	2.10 (1.29-3.42)[a]	2.01 (1.25-3.23)[a]
Outreach	1.10 (0.81-1.48)	1.14 (0.86-1.52)	1.60 (1.10-2.38)[a]	1.31 (1.01-1.79)[a]	1.21 (0.69-2.11)	1.06 (0.60-1.85)
Self-care generativity	Reference	Reference	Reference	...	Reference	Reference
Emergency visits prior	...	...	...	1.49 (1.38-1.61)[a]	...	...
Hospital visits prior	...	...	...	...	...	2.07 (1.64-2.61)[a]
Urgent-care visits prior	...	1.38 (1.31-1.47)[a]	...	...	...	...
Age	...	1.00 (0.99-1.01)	...	0.99 (0.98-1.01)	...	1.01 (0.99-1.03)
Sex	...	0.79 (0.63-1.00)	...	1.05 (0.80-1.36)	...	1.32 (0.89-1.98)
Insured	...	1.26 (1.00-1.59)	...	1.37 (1.04-1.80)[a]	...	1.39 (0.91-2.1)
Immigrant status	...	1.08 (0.70-1.65)	...	0.84 (0.51-1.39)	...	0.53 (0.25-1.11)
Language preference	...	1.09 (0.83-1.43)	...	1.14 (0.82-1.58)	...	1.23 (0.74-2.04)

IRR = Incidence rate ratio.

[a] *Statistically significant result*

Note: Health care utilization outcomes—IRRs and 95% CIs for health care events over cohort follow-up, adjusted for age, sex, health insurance status, immigrant status, language preference, and prior year health care utilization. The model yields parameter estimates representing a log-count value (not shown) which are then used as an exponential of *e.* yielding an interpretable result (shown in table), representing the percentage of the original count units.