



Poco a Poco San Pedro Itzicán A.C.
Violet Unidad Médico Dental A.C.



WORK PLAN WITH BIOPSYCHOSOCIAL APPROACH 2027 2030

A biopsychosocial approach for the riverside communities of Poncitlán understands that health is not just the absence of disease, but the result of the interaction between the body's biology, mental health, and the social conditions of the environment.

Designing a vulnerability support program requires addressing its harshest reality: the Chronic Kidney Disease (CKD) crisis of multifactorial origin, water contamination (heavy metals and pesticides), and socioeconomic isolation.

Below is a structured proposal for this plan:

PROGRAM NAME: "HEALTHY RIVERSIDE: COMPREHENSIVE INTERVENTION MODEL".

1. Biological Axis (Physical Health and Environmental Determinants)

The objective is to curb organic damage caused by hyperthermal water and agrochemicals, detecting kidney failure in time.

- Screening and Early Monitoring: Permanent kidney damage detection campaigns in schools (24-hour urine, albumin, and creatinine), prioritizing children and youth between 5 and 25 years old, who are the most affected population.
- Immediate Water Security: Installation of community reverse osmosis treatment plants to remove arsenic, fluoride, and lead from well water, complemented by the distribution of household

2.- Pediatric and maternal-infant community clinic: The goal is no longer to connect patients to a hemodialysis machine, but to shield the kidneys and the development of children before they are damaged. The community clinic would work under three axes:

- Maternal Axis (The beginning): Strict prenatal control for pregnant women in the communities. Blood pressure monitoring (to avoid preeclampsia, which damages the mother's and the fetus's kidneys) and nutritional

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supplementation. A malnourished mother gives birth to children with smaller kidneys and fewer nephrons (the units that filter the blood).

- Pediatric Axis (Early Detection): Continuous renal screening (simple and rapid urine tests to look for protein or blood) for all children in the area. If anomalies are detected in stage 1 or 2, the disease can be reversed or slowed down with pure diet and basic medications, avoiding the need for a hemodialysis machine, early dental care and follow-up, promotion of health in general.
- Nutritional and Psychosocial Axis: Community cooking workshops (how to cook healthy with the resources of the area), mental health care for mothers (postpartum depression, chronic stress due to poverty) and direct combat against child malnutrition.

3. Psychological Axis (Mental Health and Collective Trauma Management)

Two situations arise: 1.- The high youth mortality rate has generated deep and normalized emotional exhaustion in the community (anxiety, depression and collective grief). 2.- The normalization of the disease as something common that families must go through.

- Grief Support and Resilience: Group psychological support networks for families who have lost members to CKD, reducing the feeling of institutional abandonment.
- Psychoeducation of the Disease: Workshops focused on mitigating anxiety and guilt or the normalization of the disease. Accepting a chronic diagnosis at an early age requires cognitive-behavioral therapy oriented towards treatment adherence.
- Addiction Prevention and Life Project: Recreational spaces and mental health support for adolescents, offering psychological alternatives to alcohol or substance use in a context of vulnerability.



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4. Social (Sustenance, Enviromen, and Community)

Malnutrition worsens kidney damage. This pillar targets economic root causes and the lack of structural infrastructure.

- Adequate Food Self-sustainability (Includes Renal Nutrition): Creation of community gardens with safe water irrigation. Distribution of food baskets designed specifically by nutritionists for renal patients (low in potassium, phosphorus and sodium), since the local diet based exclusively on corn and beans accelerates uremia.
- Technical Training and Cooperatives: Workshops on non-agricultural trades or organic farming (free of pesticides such as glyphosate) to generate local income without exposing the health of young people to contaminated fields.
- Network of "Community Caregivers": Train and remunerate women from the same community for patient monitoring, ensuring treatments are followed and raising early warnings of decompensation.

SUBPROGRAMAS

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1. COMMUNITY DINING HALL AS A "SCHOOL OF LIFE".

The classroom is the table, the sink, and the garden or "bio-agricultural laboratory school". The main objective is to use the 45 minutes to 1 hour that children spend in the dining hall to teach them to protect their health (especially renal), care for their environment, and strengthen their identity.

- Impact: Turn hand washing, tooth brushing, and table manners into daily educational rituals. Older children can take turns being "monitors" and guide the younger ones.



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2. DENTISTRY: THE MOUTH AS A GATEWAY TO RENAL INFECTION

In patients at risk or diagnosed with Chronic Kidney Disease (CKD), oral health is a critical biological factor.

- The Risk of Focal Infections: Severe cavities and periodontal (gum) disease are sources of constant bacterial infection. In people whose kidneys are already under stress (or who are on dialysis/waiting for a transplant), these bacteria can travel through the bloodstream, accelerate kidney damage, or cause serious systemic infections (such as endocarditis or peritonitis in peritoneal dialysis).
- Impact of Water Quality: The local water, high in minerals and metals, often causes problems of dental fluorosis (stains and weakening of the enamel), which makes the children of San Pedro Itzicán even more prone to tooth loss and chronic pain, affecting their nutrition.

Program action: Implement mobile preventive dental clinics (cleaning, controlled fluoride application, sealants) and eradication of infectious sources, with absolute priority for patients already detected with CKD or pre-CKD.

3. GUARDIANS OF HEALTH

In communities with geographic, economic, and social barriers, promoters do not replace the doctor, but save lives through early detection, education, and support.

General Objective

Train community leaders (mainly women and youth from the community itself) to identify renal and metabolic risk factors, oral and mental health, and nutrition, promoting healthy lifestyle habits and timely channeling critical patients to health support systems.



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Community Promoter Profile

For the community to trust them, promoters must meet certain basic criteria:

- Belonging: Be residents of San Pedro Itzicán or neighboring communities (Agua Caliente, Mezcala).
- Natural leadership: People with a vocation for service, respected by their neighbors (mothers, catechists, local teachers).
- Education: Be able to read and write fluently (a technical degree is not required; training starts from scratch).

4. ADOLESCENT PREGNANCY PREVENTION: BREAKING THE CYCLE OF VULNERABILITY

This intervention strongly attacks the psychosocial and biological axes at the same time. San Pedro Itzicán has very young fertility rates due to the lack of life options and educational lag.

- The Biological Danger (Double Burden): A pregnancy at 13 or 15 years old is already high-risk by itself. If you add local malnutrition and the predisposition to kidney failure (often not diagnosed), adolescent pregnancy triggers preeclampsia, eclampsia, and acute kidney damage, putting the mother and baby at mortal risk.
- The Psychosocial Impact: Early pregnancy completely halts the life project of young women, forcing them to drop out of school, perpetuating poverty, and increasing psychological stress in an already complex environment.

Action in the program: Create a subprogram of "Sexual and Reproductive Health with a Gender Approach and an adolescent services unit". It is not enough to distribute contraceptives; safe community spaces must be opened (peer workshops, comprehensive sex education, and linking them with the creation of micro-enterprises or life projects outside of early motherhood).

Youth helping youth. In adolescence, young people do not usually listen to adults, but they do believe their friends. If we train a select group of adolescents from the same community, they will become the bridge of trust between the street and medical or



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psychological services.

5. SCHOOL-GREENHOUSE

In a community with high lag and environmental vulnerability, such as San Pedro Itzicán, it is one of the most powerful tools of the social and biological axis within the biopsychosocial approach. It is not designed only to produce food, but as a community center for learning, therapy, and health.

For it to operate sustainably and generate a real impact, its operation must be structured around four key pillars: **adapted infrastructure, a practical pedagogical model, a health approach, and a circular economy framework.**

Infrastructure and Resources (School Greenhouse)

Given the local context, the greenhouse cannot rely on traditional local resources due to soil and water contamination.

- **Safe Water for Irrigation:** It must be directly connected to the community's reverse osmosis filtration system or feature a **rainwater harvesting system** with sediment filtration. Irrigating with local well water from the riverbank would perpetuate the accumulation of heavy metals in the plants.
- **Hydroponics and Raised-Bed Farming:** To avoid contact with soil potentially contaminated with heavy pesticides (glyphosate), priority should be given to raised garden beds filled with clean imported soil, or basic hydroponic/aeroponic systems that optimize clean water usage.
- **Solar Energy:** A pair of solar panels to automate drip irrigation and ventilation will ensure the greenhouse functions even during local power grid outages.
- **The Pedagogical Model:** "Learning by Doing" The greenhouse functions as an open classroom. Its goal is to train different community groups through tailored dynamics:

A. **For Children and Schools (Education and Awareness):** Scheduled visits where they learn science, biology, and the water cycle in a practical way. They are taught the value of clean food, breaking the normalization of living in a contaminated environment.



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B. **For Mothers and Youth (Technical Training):** Workshops on organic farming, homemade biofertilizer production, and pest control without harmful chemicals. Upon completing the workshops, participants receive a "family backyard garden kit" to replicate what they learned at home.

C. **For At-Risk Adolescents:** Specialized technical workshops (irrigation installation, greenhouse management) serving as a practical vocational track or technical job training, offering an alternative life path to traditional field labor or migration.

The Health Approach (Renal Nutrition and Horticultural Therapy)

This is where it connects directly with the biopsychosocial model of the support program:

- I. **The "Nutritional Pharmacy" for CKD:** The greenhouse specializes in growing strategic crops for the population predisposed to or diagnosed with Chronic Kidney Disease (CKD). Priority is given to vegetables that, through specific cultivation and preparation techniques, are safe and **low in potassium and phosphorus**, yet rich in clean calories to fight local malnutrition.
- II. **Horticultural Therapy (Mental Health):** Working with the soil has a proven psychological impact in reducing cortisol (the stress hormone), anxiety, and depression. The greenhouse becomes a safe space of peace and healing for families grieving the loss of loved ones due to the health crisis.

III. Sustainability and Circular Economy

To not depend eternally on donations, the school greenhouse must generate its own resources for maintenance:

- a. Internal Consumption: 60% of production is destined for the students' families and renal patients in the community through the program's nutritional baskets.
- b. Surplus Commercialization: The remaining 40% (high-quality, pesticide-free products, or seedlings ready to plant) can be sold to restaurants, hotels, or organic markets in the Ajijic or Chapala area. The income from these sales is reinvested in seeds, greenhouse plastic maintenance, and the salary of a local manager.



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- c. Community Composting: The community is invited to bring their organic waste to transform it into compost inside the greenhouse, reducing town waste and generating free fertile soil.

Example of a weekly School-Greenhouse program.

- Monday and Wednesday (Mornings): Agricultural production and maintenance workshops for the group of women in the community.
- Tuesday and Thursday (Afternoons): Practical natural science classes for children from local elementary schools and sexual health/pregnancy prevention workshops adapted in the space (using the greenhouse as a safe place for coexistence).
- Friday (All day): Harvest day, preparation of nutritional baskets for patients with CKD, and group horticultural therapy sessions with the psychology team.
- Saturday (Morning): Community barter market and sale of surpluses for self-sufficiency.

6. SUBPROGRAM: "EMPRENDE (NAME OF EACH COMMUNITY)": COOPERATIVISM AND SECURE LIVELIHOOD"

1. The operating Model: Social Ownership Cooperatives

To avoid exploitation and foster social cohesion, the ideal model is cooperativism.

- Local Governance: The companies are owned by the workers themselves and representatives of the OSC involved in the project (with priority for single mothers, at-risk youth, and family members of kidney patients).
- Community Health Fund: A fixed percentage of the profits of each community enterprise (for example, 15%) is automatically allocated to a fund to help cover medical transportation, medication, or maintenance of the community's water filters.



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2. Three Viable and Healthy Lines for the Area

To function, these companies must leverage the Ribera de Chapala market (Ajijic, Chapala, Jocotepec), which has high purchasing power and demand for organic, artisanal, and sustainable products.

A. "Verde Ribera": High-Production Organic Marketing Company

- Business Type: Sale of gourmet vegetables, seedlings, and biofertilizers produced in the Greenhouse-School and in family backyard gardens.
- Plants for oils and essences.
- Target Market: Restaurants, hotels, and organic markets ("Farmers Markets") in Ajijic and Chapala.
- Social Impact: Replaces agricultural work exposed to heavy agrochemicals with a cleaner and better-paid agricultural job.

B. "Textiles with Identity": Sewing and design workshop. Embroidery with "Tufting" (yarn gun).

- Business Type: Leveraging the embroidery and weaving tradition of the Coca region, a textile design workshop (linen clothing, tablecloths, eco-friendly bags) with high-quality finishes is created.
- Tufting Embroidery: artisanal and textile technique in which wool or acrylic threads are injected on to a tensioned base fabric using a special gun (tufting gun). It allows for the creation of customized designs, such as rugs, carpets, and tapestries, quickly and with a great variety of textures and colors.
- Target Market: National and foreign tourism in the lakeside area, and online sales.
- Social Impact: Secure employment with flexible hours for women caregivers of CKD patients or adolescent mothers, allowing them to generate income without neglecting their family health or their studies.

C. "Itzicán dehydrated and organic Pulps" Food Processing

- Business: Processing and packaging of local dehydrated products (prepared with standards of hygiene, seasonal fruit, hibiscus, or healthy snacks). Solar dehydration does not require gas or electricity, lowering costs.



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- Target Market: Regional convenience stores and specialty markets.
- Social Impact: Generates added value to local fishing and harvesting, creating technical jobs in quality control and hygiene.

3. Implementation Phases (The Path to Success)

For the subprogram not to fail due to lack of administrative experience, a critical incubation route must be followed:

A. Soft Skills and Cooperativism Training:

Before talking about money, workshops on personal finance, conflict resolution, leadership and how a cooperative works are given. This strengthens the psychological axis and community trust.

B. Technical Training and Product Development:

The community is linked with universities (such as the University of Guadalajara) or training centers to standardize product quality, learn basic accounting, costs, and brand design.

C. Seed Capital and Infrastructure:

The support program (through donors, foundations, or government) provides the initial equipment (sewing machines, solar dehydrators, packaging machines) on a loan basis. No cash is given, production tools are provided.

4. Launch and Commercial Linkage.

Sales channels are opened. Agreements are signed with local Rotary Clubs or chambers of commerce to ensure that San Pedro Itzicán products have fixed buyers on the shores of Chapala and Guadalajara.

The Biopsychosocial Impact of Entrepreneurship

- Biological: Generates economic income that allows families to buy better quality food and pay for treatments, in addition to moving them away from jobs that harm their health (exposure to pesticides).



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- Psychological: Changes the community narrative. San Pedro Itzicán stops seeing itself (and being seen) only through the lens of disease and tragedy; it becomes a hub of production, dignity, and self-management. People regain control of their future.
- Social: Strengthens the community fabric, reduces forced youth migration, and curbs school dropout rates by linking studies with real economic opportunities.

The Community Business or Enterprise Subprogram is the engine that provides long-term viability to the entire biopsychosocial model. In San Pedro Itzicán, where the main sources of employment (traditional agriculture with pesticides and construction on the lakeshore) sometimes add health risks or perpetuate economic vulnerability, community enterprises offer a safe, dignified, and local livelihood alternative.

Under the biopsychosocial approach, a community enterprise does not seek the enrichment of an individual, but collective well-being (social health), reinvestment in the community, and the psychological empowerment of its inhabitants

7. TURISMO CON PROPOSITO

The correct approach is not mass tourism, but solidarity impact tourism

1. Academic, Research, and Scientific Volunteering Tourism

The unique conditions (geographical and health-related) constantly attract national and international universities, laboratories, anthropologists, doctors, and ecologists.

- The proposal: Create a workspace
- The impact: Researchers and volunteers pay for services and food, generating dignified and constant income, while providing technical solutions or community care.

2. Learning Routes and Environmental Awareness (Eco-education)

Oriented toward profiles interested in community resilience, agroecology, and human rights.



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- The proposal: Design guided tours aimed at explaining the geography of the lakeshore, the transition toward organic gardens (pesticide-free) that are being implemented to combat malnutrition, and the demonstration of rainwater harvesting technologies.
- The impact: It functions as a mechanism for living denunciation and environmental education. The tourist does not go to "have fun", they go to learn and leave a solidarity-based economic contribution.

3. Promotion of a Cultural and Artisanal Identity Cluster

Leverage the tourist flow that already reaches Chapala or Ajijic to attract a select percentage to the eastern area of the lakeshore, based purely on its culture.

- The proposal: Traditional embroidery workshops (which are an economic pillar for the women of the area) and exhibition of ancestral cuisine based on clean and controlled processes.
- The impact: Allows for direct commercialization and fair pricing of handicrafts without intermediaries, economically empowering the women of the region, who usually carry the burden of caring for sick patients.

4. Community Sports Tourism Cluster

It is a network or strategic alliance where different actors from one or several local communities (such as families, artisans, producers, guides, and lodging providers) join forces with external organizations (NGOs, universities, specialists) to work as a team, instead of competing with each other.

Leverage the massive tourist flow of Chapala and Ajijic to channel adventure athletes toward San Pedro

Itzicán is a viable strategy. It allows capturing a market with high purchasing power (which already spends on lodging and consumption in Chapala) and leads it to generate a direct and solidary impact on the Poncitlán lakeshore.

To solve the limitations of pollution and health, the secret lies in **not competing on the asphalt or using the**



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lake, but in conquering the mountain. The slopes and hills of San Pedro offer an imposing technical terrain, with spectacular views of the lake and a perfect geography for adventure tourism.

- Recreational Walk / Hiking (Cultural and Geological): A 5K to 7K route suitable for families and enthusiasts. The main attraction is walking guided by local youth who explain the native flora, stone formations, and local history. (Rock art and petroglyphs)
- Mountain Marathon / Trail Running (Technical Challenge): Two competitive distances: 21K (Half Marathon) and 42K (Full mountain marathon). The route would climb the slopes of San Pedro Itzicán, connecting high trails toward Agua Caliente and Chalpicote. It is a demanding terrain, with steep ascents sought by trail athletes from the Guadalajara Metropolitan Area and foreigners staying in Chapala.

Mountain Biking (Cross-Country / MTB Marathon): A 40K to 60K route that combines wide dirt roads, technical hill climbs, and fast descents toward the lower area of the lakeshore, taking care not to cross dense residential areas to ensure safety.



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Comprehensive Biopsychosocial Impact Matrix ("Healthy Ribera")

Component of the Program	Biological Axis (Body and Environment)	Psychological Axis (Mind and Emotions)	Social Axis (Community and Sustenance)	Success Indicator Key
Renal Screening and Water Filters	Stops organic damage from heavy metals in children and youth.	Reduces parental distress regarding the uncertainty of the disease.	Guarantees the human right to safe water in the home.	Reduction of new cases of proteinuria in schoolchildren.
Preventive Dentistry	Eliminates oral infectious foci that aggravate renal failure.	Restores aesthetic self-esteem and eliminates chronic fluorosis pain.	Reduces school absenteeism and improves basic nutrition.	Percentage of CKD patients free of focal infections.
Prevention of Adolescent Pregnancy	Avoids high-risk pregnancies under conditions of environmental toxicity.	Promotes autonomous decision-making and positive self-concept.	Decreases school dropout and halts the perpetuation of poverty.	Reduction in the birth rate in those under 18 years old.
Greenhouse-School	Produces clean food specific for the renal diet (low in potassium).	Ortotherapy: Space of peace that reduces cortisol, anxiety and collective grief.	Transmits technical knowledge and ecological awareness to the new generations.	Tons of vegetables suitable for the renal diet harvested per year.
Community Enterprises	Moves the population away from agricultural jobs exposed to toxic pesticides.	Changes the narrative from "victims" to dignified and self-managed producers.	Generates local income, cooperativism and halts forced migration.	Average monthly family income of the cooperative members.
Community Health Fund	Facilitates continuous access to medications, laboratories and medical transport.	Provides peace of mind knowing there is financial backing for emergencies.	Institutionalizes transparency, neighborhood trust and mutual aid.	Zero interruptions of medical treatments due to lack of transportation resources.



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The Systemic Approach of the Model

In the matrix, the rows do not function in isolation. For example: The School-Greenhouse biologically nourishes the renal patient, psychologically heals the caregiver through horticultural therapy, and economically supplies the Community Enterprise, which in turn injects resources into the Health Fund to protect the entire structure. The whole system provides feedback.

Critical Context Note: For this program to work in communities, it must be implemented under the principle of environmental justice and with cultural relevance, respecting the community organization of the Coca population from the Chapala lakeshore.

Include the participation of civil society organizations with which relationships already exist, aligning them toward a shared objective rather than receiving isolated aid. Furthermore, invite Mexican and international universities and collectives to participate.