MEDPING

Lite paper

The world's first decentralized healthcare ecosystem

Abstract

Medping is the world's first decentralized ecosystem whose goal is to redefine and enhance the global healthcare system by building a blockchain-based infrastructure for healthcare professionals and patients to exchange value.

In the earliest days of what would become a historic pandemic, the novel coronavirus had unfettered access into and throughout the world, exposing the gaps in the global healthcare system that required urgent and immediate attention. The global healthcare system was unprepared and couldn't face what was coming. Global economy shutdown, schools, offices, companies, and government agencies all shutdown. The effect of the coronavirus outbreak was devastating. This combined with the increasing global health data breaches and administrative bureaucracy have resulted in reduced caregiving globally. Medping, a decentralized healthcare ecosystem will solve these forementioned problems with its blockchain agnostic infrastructure.

Users of the Medping infrastructure would seamlessly exchange value while also getting incentives via Defi features like lending, staking, and more.

Content

Medping, a decentralized healthcare ecosystem

At Medping, we envision a blockchain-powered healthcare system where your identity and your medical record (data) are your own, safely secured from any central authority.

Medping will enable a completely decentralized platform, where users are in control, ensuring a transparent, secure, immutable, interoperable communication to exchange information (data) between users and healthcare professionals.

Medping is built as a solid foundation to connect the entire global health sector, ensuring that the disconnect between healthcare providers and healthcare seekers is nullified. We facilitate a global healthcare ecosystem where independent blockchain can exchange medical information and transactions in a trustless way via the Medping protocol.

Medping makes it easier than ever to create and connect decentralized healthcare applications, services, and institutions. By empowering innovators to build better healthcare solutions, we seek to free society from its reliance on traditional health systems, which have failed over the years.

Medping, a global healthcare solution

Blockchain Technology

"Blockchain" is a cryptographically secured data structure that provides an ordered series of blocks that link back to previous blocks to provide a comprehensive picture of variable states. Blockchain is analogous to a ledger, with states readily reconciled because a subsequent state is dependent upon or linked to the previous state. Blockchain can be implemented as distributed ledgers, where multiple nodes possess copies of the ledger and the accuracy of the ledger is predicated on a consensus of the nodes as to the content of the ledger.

Blockchain technology is the underlying system for cryptocurrencies like Bitcoin and Ethereum. Blockchain provides a secure, transaction-based infrastructure for decentralization and consensus about the validity of transactions on a distributed ledger. The distributed ledger provides transparency regarding the cryptocurrency and transactions made therewith and can support varying levels of privacy (from anonymous or pseudo-anonymous to the public) for users based on implementation and the behavior of actors within the infrastructure.

Through the combination of a transparent blockchain and smart contracts, the need for a prior trust relationship or a trusted third party is eliminated.

Medping leverages blockchain technology in different manners: to implement its *Ping token* as a source of utility and to store information of value to healthcare providers, patients, health facilities, and other users in a transparent manner that gives confidence to all parties involved. Blockchain technology and Medping platform facilitate the valuation of Ping token and the exchange of value in view thereof.
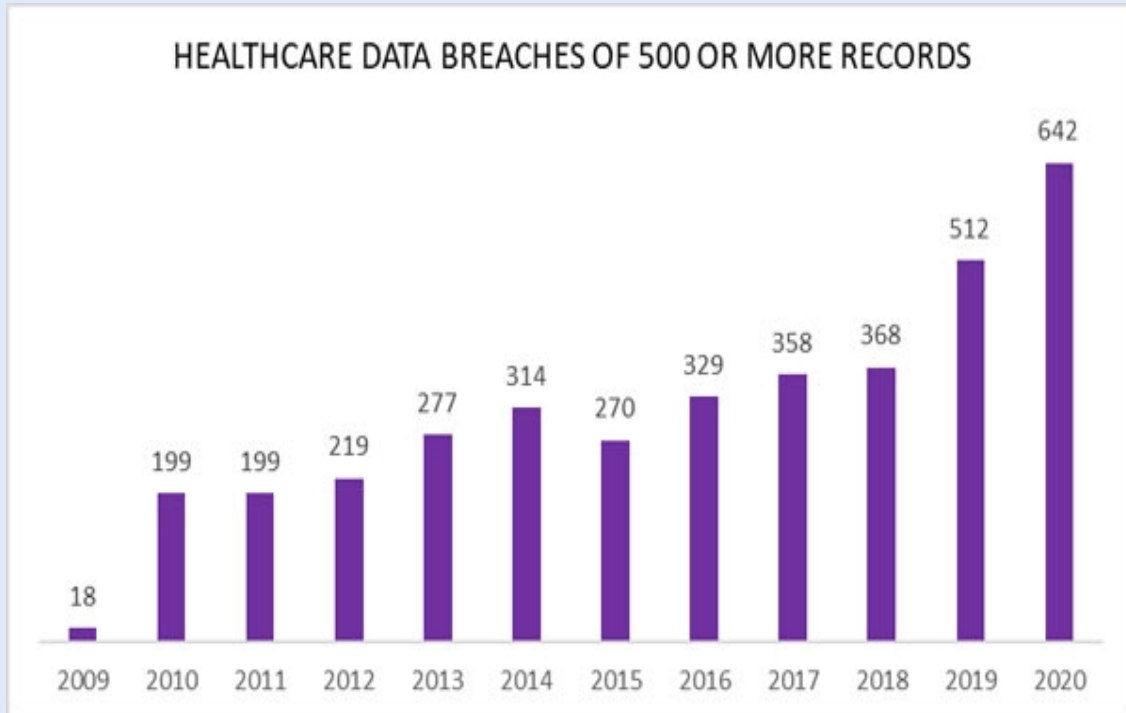
The Problem

The healthcare system is plagued by a variety of problems worldwide, and its effect is much more profound and felt in developing countries and historically excluded groups, such as indigenous and afro-descendants. The COVID-19 pandemic has illustrated how weaknesses in health systems can have profound implications for health, socioeconomic evolution, trust in governments, and social solidity.

The crisis interacts with pre-existing heterogeneity in asset holdings, high cost of medical care, poor supply and distribution of the healthcare workforce, access to health care services, and many other aspects that make some individuals and households particularly vulnerable to an economic freeze of this kind.

On the other hand, data system silos and administrative bureaucracy have given rise to ineffectiveness and replication of effort that waste billions of dollars.

Security is a major issue in the healthcare industry. Healthcare data breach statistics clearly show there has been an upward trend in data breaches over the past 10 years, with 2020 seeing more data breaches reported than any other year since records first started being published.

Between 2009 and 2020, 3,705 healthcare data breaches of 500 or more records have been reported to the HHS' Office for Civil Rights. Those breaches have resulted in the loss, theft, exposure, or impermissible disclosure of 268,189,693 healthcare records.

HEALTHCARE DATA BREACHES OF 500 OR MORE RECORDS

Medping, The Solution

Medping has been designed to meet and address these issues by

- Delivering standardized health care services to corporations, other organizations, and individuals;

- Fostering the emergence of cost-effective, patient-centered, and accessible health care plans thereby significantly reducing the opportunity for reduplication, waste, abuse, and fraud. We expect to create major cost savings by facilitating authorized peer-to-peer transactions that delegate authority to individual stakeholders while empowering payers regarding cost control and oversight.

- Deploying blockchain-powered medicine for an ever-increasing benefit to as many humans as possible. Medping is designed both to be highly valuable now and to lay the foundation for the emergence of a self-modifying, decentralized medicine with the

eventual potential for general growth and beneficial ethical characteristics.

- Securing Patient Data: Medping aims to utilize the blockchain in keeping our important medical data safe and secure. Medping's ability to keep an incorruptible, decentralized, and transparent log of all patient data makes it a technology rife for security applications. Additionally, while Medping is transparent it is also private, concealing the identity of any individual with complex and secure codes given the sensitivity of medical data. The decentralized nature of the technology also allows patients, doctors, and healthcare providers to share the same information quickly and safely.

Medping Ecosystem

Medping

Medping is a decentralized healthcare ecosystem that would enhance and redefine the global healthcare system by building a blockchain-based infrastructure for caregivers and recipients to seamlessly exchange value. Just like LinkedIn connects Employers with Job seekers, MedPing connects healthcare professionals with patients to exchange value. With a Know-Your-Customer (KYC) and an Anti-bot protocol integration, MedPing will be a meeting point for caregivers and healthcare recipients. Caregivers are verified before providing care on the platform that would grow to be the world's biggest decentralized medical system.

MedPing will ensure standardized healthcare delivery to patients, foster the emergence of cost-effective, patient-centered, and accessible care plans, create cost-effective medical practice by facilitating authorized peer-to-peer transactions, and empower care recipients regarding cost control and oversight. Medping is designed to lay the foundation for the emergence of a self-modifying decentralized healthcare system, with the eventual potential for general growth and beneficial ethical characteristics.

The MedPing decentralized healthcare ecosystem comprises:

MedSwap: a multi-chain wallet with one identity and one mnemonic seed phrase to control user assets and medical data. MedSwap would allow patients, doctors/nurses, and other healthcare providers to share data quickly and safely while maintaining strict compliance with HIPAA (Health Insurance Portability and Accountability Act) rules. Medswap will help manage user assets including Medcard (a payment card), balance inquiry, transfer, user's medical records, etc. Medcard would allow users to spend their cryptocurrencies at card payment terminals while receiving cashback benefits and bonuses. At the same time, users will be able to interact with other products of the MedPing ecosystem such as staking, lending, insurance, and governance using MedSwap.

Key Features of Medswap

1. Medical Record:

Miscommunication between medical professionals costs the healthcare industry a staggering $11 billion a year. The time-consuming process of obtaining access to a patient's medical records

exhausts staff resources and delays patient care. MedSwap offers a cure for these ills.

Medswap allows patients to securely store, manage, and share pertinent information with their healthcare providers. The decentralized nature of medswap also allows patients, doctors/healthcare providers to share data quickly and safely while maintaining strict compliance with HIPAA rules.

2. Medpay (Payment Card):

Medpay looks to form a bridge between the fiat and cryptocurrency worlds. With its cryptocurrency-funded debit card and the PingToken. Medcard debit allows users to spend their cryptocurrencies at card payment terminals which offer increasing cashback benefits.

MedLink: an open-source protocol with an encrypted data management system that provides patients, caregivers, healthcare workers, public hospitals, private clinics, etc with health data storage functionality (including but not limited to patients files, payment history, laboratory test, consultation, and general patient's profile). Healthcare providers can document a patient's clinical session directly onto the patient's health record folder, creating a more valuable experience for physicians and patients. Medlink not only provides this established and successful medical consultation but will accommodate healthcare providers by enabling them to interact with the patient's records during medical consultation.

Key Features of MedLink

1. Unlimited separate login accounts for Admin, Doctor, Radiologist, Pathologist, Accountant, Receptionist, and other definable roles.
2. Patients Records Database.
3. Pathology and Radiology Test Results.
4. Beds, Wards, and Floor Management.

5. Appointment Bookings and Front Office.

6. Pharmacy Inventory Management.

7. Discharge Summary for OPD/IPD Patient.

8. Prescription and Symptoms.

9. Hospital Assets and revenue Management.

10. Blood Bank.

11. Insurance and Third Party Administrator charges.

12. Human Resources.

13. Calendar and Tasks.

14. Notice Board and Messaging.

15. Medping consultation (Live Video Patient Consultations).

16. File Sharing from patients' MedSwap data to hospital Medlink account or opposite.

17. Patient's Folder transfer to other hospitals, branches, or medical facilities.

18. Hospital group meeting/texting during and after working hours for easy communication.

19. Income and Expenses.

20. Automated Notifications for Patients and Staff.

21. Extensive Departmental Reports.

22. Hospital MedShop.

23. Payment systems (Ping token, Cash payment, and other supported payment gateways).

24. Multilingual healthcare.

25. Offline version.

26. Android, iOS, and Web versions.

27. Unlimited Storage and Backup functions.

Giving a patient direct and regular access to their healthcare record and their service provision empowers patients to receive the best possible care.

Medward

The blockchain industry has witnessed significant developments in the past decade. More financial products have been released that have transformed how we view finance. In recent months many crypto enthusiasts have turned to Non-fungible tokens (NFTs), with the sector experiencing massive growth during this period. NFTs (non-fungible tokens) are cryptographic "tokens" that represent a unique, collectable digital assets that no one can copy and live permanently on the blockchain. Until recently, gaming and the Real estate have been a largely centralized activity, with all data, assets, and in-game currency typically confined to the game and structure from which it originated, and with all ownership of such items retained by the developers. The addition of blockchain could see a decentralized gaming future where items won or purchased in one game could be transferable and used in another, putting a real-world value on digital in-game assets and virtual real estate.

Medward is leveraging on the advancement in the Non-Fungible Token (NFT) industry to create and sell tokenized virtual hospitals and medical games built on a Layer-two technology powered by Ping token, the native token for the MedPing ecosystem. Similar to the tokenization of real estate, MedPing will build the first-ever African tokenized physical hospitals and medical facilities; exchange virtual assets via the MedWard marketplace while also allowing fractional ownership of hospital shares. MedPing virtual gamers could be medical students, nurses, doctors, medical professionals, or individuals who desire to understand how the human body works. These games impart valuable information about disease prevention and best medical practices to promote healthy living. Young children can explore MedWard to learn how to handle medical emergencies as well as other basic medical occurrences.

How does it work?

STEP 1

Medping Hospital NFTs or other private clinics can create fractions ("Shards") by choosing issuance and pricing. The NFT is held in an audited smart contract.

STEP 2

Fractions will be for sale at a fixed price for three weeks or until they're sold out.

STEP 3

After the fixed sale period, the fractions go to Medward marketplace where they can be traded like standard cryptocurrencies, keep as a store of value or use as collateral to borrow other cryptocurrencies.

STEP 4

The underlying NFT can be recovered by acquiring 100% of the Shards or via a special Buyout clause.

Why fractions?

For MedPing

1. Unlock liquidity and volume for your collections.
2. Get live valuations and greater exposure for our NFTs as fractions trade on the open market.
3. Invite other stakeholders to join our collection and partake in unique governance use cases.

For Investors

1. Get access to unique assets with low price thresholds.
2. Trade NFTs with lower costs and greater diversification.

3. Use fractions for advanced governance of unique assets.

4. Provide liquidity for MedWard marketplace and earn transaction fees.

5. Be a pioneer in the emerging Asset Class of the Metaverse.

MEDICAL NFT GAMES

Medical Nft Gamers could be medical students, nurses, doctors, medical professionals, or anyone who wants to understand how their body works. These games impart valuable information about disease prevention and best practices to promote healthy living. Even younger children can imagine what it would be like to run an emergency room or understand what's making a patient sick. Interactive games can supplement elementary or high school Biology courses. Students who learn faster through immersive experiences can use the knowledge gleaned from the games and apply it to the theoretical aspects of their courses. Gamers can also breed, nurse, and feed virtual pets like dogs, cats, horses, and so on, then sell them via the MedWard marketplace. Possible Healthcare games we could support on the MedWard marketplace include but not limited to the following:

COVID-19 Treatment: Choose from five potential COVID-19 cases and develop the best treatment plan.

Be the Doctor: Treat patients and see if you can handle a doctor's busy workload.

Perform Surgeries: Deal with the weird cases that come into the emergency room and perform surgical operations.

Skin Cancer Awareness Game: Dive into the inner workings of skin cells as you learn how to prevent skin cancer.

Staying Healthy: Learn how to avoid infection during cold and flu season.

Run Your Hospital: Manage your Hospital as its chief physician. Treat patients and handle the caseload.

Clinic Physician: This game is a series of clinical tasks to teach you time management.

Make Neuron: Delve into the unique structure of nerve cells.

Blood Type: Teaches students about different blood types and their compatibility with one another.

Game developers (issuers of the NFT) will earn a royalty every time an item is re-sold in the MedWard marketplace. This creates a mutually beneficial business model where both players and developers earn from the secondary NFT market.

MedShop

Blockchain-supported global e-commerce platform for domestic and cross-border medical shopping, powered by Ping token. The platform would let users from around the world purchase Medical products from MedShop, removing any form of middlemen by allowing consumers to buy directly from manufacturers, distributors, and wholesalers using Ping as a form of payment. MedShop will make healthcare consumer economies more accessible to users around the globe. Medshop brings to reality, the ideal environment required to bring suppliers or retailers of medical products in contact with consumers, providing medical diagnostics, consumables, and educational products. MedShop utilizes

the Medping network to offer products, services, and solutions in all aspects of healthcare.

MedShop is a blockchain-enabled global buying platform for domestic and cross-border medical ecommerce and end-to-end crypto shopping powered by $Ping token. The platform lets users based anywhere in the world purchase Medical products from MedShop, cutting out the middleman by allowing consumers to buy directly from manufacturers, distributors, and wholesalers using $Ping as tender. Medping will leverage the universal nature of the $Ping token to make consumer economies more accessible to those living outside their borders.

There are no fees or commissions, and each transaction is protected by a peer-to-peer smart contract, looking to give users access to a **'decentralized Amazon'** This means users have complete control over their data. Ping will be the basis for the MedShop ecosystem ensuring swift and seamless transactions. Also, all purchases of goods and services will result in financial rewards returned (cashback) to the buyer.

MedShop utilizes the Medping network to offer products, services, and solutions in all aspects of healthcare including; Government, hospitals, universities, private practice, allied health, practitioners, students, and the general public. Medshop brings into reality the ideal environment required to bring suppliers or local retailers of medical equipment instant contact with their required consumers. MedShop boasts a matchless and innovative range of medical diagnostic, consumable, and educational products. Through the utilization of blockchain technology, Medshop aims to improve the way consumers can access essential medical supplies.

MedCrowd

Fundraising In the Age of Blockchain

Most traditional business funding takes one of three forms: self-funding, bank funding, or venture capital. The problem is that for most people, self-funding is incredibly limited. Bank funding requires having an existing business with good revenues and cash flow and medical bills funding never stand a chance even when it's essential. And venture fund capital nearly always requires a product or service that has mass appeal. This makes traditional funding very limited and hard to get for newer businesses, medical NGOs, medical tourism, and so on. It can inhibit growth even for products and services with huge potential.

MedCrowd is a decentralized peer-to-peer consensus network powered by Ping token, transforming how the world interacts and transacts to raise funds for an individual or organization. MedCrowd allows businesses or ideas with really innovative products and services to raise funds from users in a decentralized manner. MedCrowd protects donors and beneficiaries from fraud as every fund that is raised is vetted and independently verified, making crowdfunding more reliable, transparent, trusted, cost-efficient and convenient. MedCrowd will be the best platform to crowdfund a project like starting a local health project, raising funds for a medical procedure, medical aids, medical NGOs, medical tourism, funding new medical inventions, etc. MedCrowd would change how crowdfunding is done

We have progressed to the point where we can now leverage technology itself to generate revenue. By using the Medping ecosystem to spread awareness, people can reach more potential donors than obtained with traditional forms of fundraising.

MedInsure

The multi-trillion dollar insurance industry is dominated by huge corporations, weighed down by heavy regulation, and plagued by misalignments of company and consumer incentives. The insurance world has devolved into an inefficient, expensive, and ultimately frustrating industry. When customers most need help, they can end up fighting in vain for reimbursement from companies whose profits too often depend on avoiding paying out.

MedInsure is building a decentralized healthcare insurance system powered by Ping token. With visionaries like you, we can build a platform full of opportunities across the industry's value chain, Corporate, large and small groups. We aim to help make the purchase and sale of medical insurance more efficient, enable lower operational costs, provide greater transparency into the industry, and decentralize access to medical insurance by removing intermediates.

The platform will be created to provide people outside the banking system with insurance services and bridge the gap between consumers in developing countries and insurance providers. MedInsure Network Protocol provides a new level of accessibility and restrictions reduction, associated with the traditional insurance industry. There are several attractive member benefits including access to a home delivery pharmacy, health information, awareness, preventive medicine, rewards programs, flu shot information, and the Medping telemedicine program, which allows you access to board-certified telehealth services

Medping users can access a health insurance package, which will help to alleviate the high cost and burden of emergency health care accessibility. MedInsure helps pay for your healthcare. It also covers services ranging

from routine doctor visits to major medical costs from a serious illness or injury.

Medping users can harness this service as they will be able to access care in any facility running on the medping protocol. Users could allow health insurers access to their health records. In turn, insurers could rest assured that the information they are making decisions upon is trusted, verifiable, and patients could be rewarded for their transparency in the form of lower premiums. Moreover, patients could pledge to a set of health goals with their insurer and be rewarded as they hit milestones associated with those goals. Regular weight and blood pressure measurement uploads, proof of therapy compliance and attendance at a gym might incentivize rewards from health insurers with lower premiums or rewarding users with Ping Tokens.

MedLendi

MedLendi is designed to instill trust with its unbiased and decentralized network of nodes, which replaces costly banks and greatly reduces loan processing time. Instead of paying exorbitant processing fees and waiting up to 60 days for loan approval, patients, individuals, and healthcare providers can now apply and receive approval for a blockchain-based loan in a matter of minutes.

MedLendi will enable users, patients, and healthcare providers to utilize a high-speed and low transaction cost loan by supplying Ping token, Bitcoin, Ethereum, or other supported cryptocurrencies as collateral, earn interest on that collateral, borrow against that collateral, and mint stablecoins on-demand within seconds. These solutions all happen directly on the medlendi network. This protocol unlocks billions of dollars in value while enabling the participant to access liquidity in real-time.
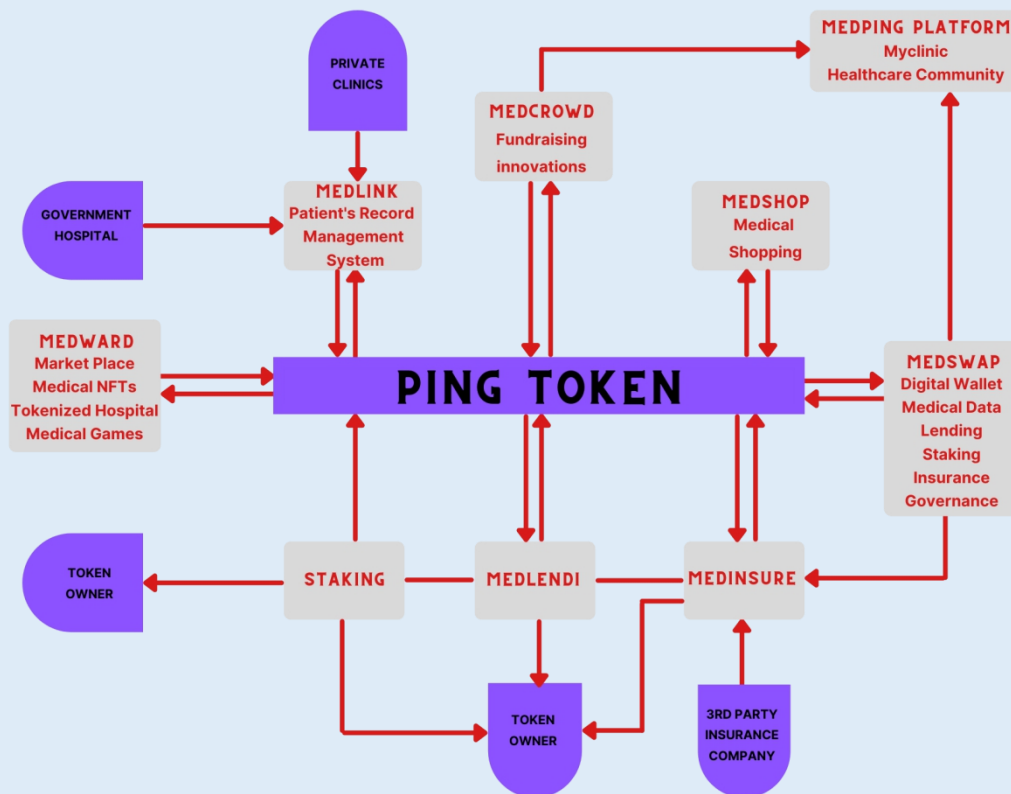
Medping Architecture

Medping architecture simply links the entire ecosystem together. PING Token which is Medping's native token, fuels the ecosystem.

MEDPING PLATFORM

My clinic Healthcare Community

A user(patient) can receive care from a healthcare professional on the Medping platform. Features like staking, insurance, governance, lending, and others are linked with the PING Token. Every transaction on the Medping ecosystem is done via Medswap, the ecosystem's digital wallet.

<u>Why</u> Binance Smart Chain?

Medping is a blockchain agnostic ecosystem meaning it will integrate multiple chains/ networks. Binance smart chain is the first choice network for the launch of the Medping ecosystem before integrating other networks like Matic(now Polygon), Ethereum, Cosmos, and the likes. Binance smart chain is the first choice network due to:

- Secure network: using Proof-of-Stakerelay chains to ensure network security.
- Fast throughput: using heterogenous sharding for faster transactions.
- Governance: using on-chain governance for full network decentralization.
- Interoperability: using cross-chain communication between blockchain networks.

PING Token

Medping Token ($PING) is the native token of the Medping ecosystem. $PING will power the Medping ecosystem by facilitating authorized transactions, powering health data storage, and value exchange while being used for governance.

200M $PING Tokens will be generated at the Token Generation Event (TGE) to power the Medping ecosystem.

10M $PING Tokens will be burnt via the Burn mechanism. 5% of the 10M PING Tokens will be burnt every quarter for 5 years till the burn is complete.
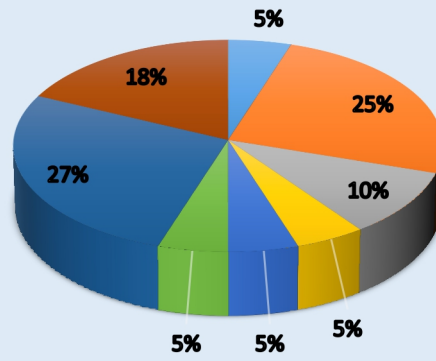
Medping Governance

Medping Governance enables ping token holders to vote and initiate proposals on the Medping Network Protocol will only be governed by the community.

Ping required to vote: 1 $PINGToken
Ping required to submit proposals: 100,000 $PING Token

At the Token Generation Event (TGE), PING Token ($PING) which is the fuel for the Medping ecosystem would be split as seen in the diagram below:

■ Liquidity Pool	■ Presale	■ Public sale	■ Marketing & Dev
■ Burn	■ Ecosystem	■ Listing	■ Team

Roadmap

Q1 2021

Idea development **|** Team development

Community development **|** Litepaper development

Q2 2021

Website development **|** Team expansion

Medping development on Binance smart chain

Q3 2021

Medping testnet on Binance smart chain **|** Presale/ Private sale/ Public sale

$PING Token Generation Event **|** Exchange listing

Q4 2021

Medping mainnet on Binance smart chain **|**Medping testnet on Ethereum network

Medswap Defi development **|** Medward NFT development

Quarterly burn **|** More exchange listing

Q1 2022

Medswap Defi launch **|** Medward NFT launch

Polygon integration **|** Mainneton Ethereum network

Partnership with healthcare facilities **|** Quarterly token burn

Q2 2022

Cosmos integration **|** Medlink development

Mobile application development for IOS & Android **|** More partnerships

Governance: PING Token holders will be able to propose, vote, and approve votes.

Quarterly token burn **|** More partnerships

Conclusion

Traditional healthcare systems are location-dependent as beneficiaries or members must be within a particular region/ geographical location to access healthcare. Meanwhile, health data insecurity, the high cost of healthcare, as well as administrative bureaucracy has limited the efficiency of the global healthcare system.

Medping is solving these aforementioned problems of the global healthcare system by building a location-agnostic blockchain protocol that can be accessed by both healthcare professionals and patients from anywhere in the world.

Medping is designed to lay the foundation for the emergence of a self-modifying decentralized healthcare system by ensuring standardized healthcare delivery to patients, foster the emergence of cost-effective, patient-centered, accessible care plans. Medping would also create cost-effective medical practice by facilitating authorized peer-to-peer transactions and power the world's most secure health data storage bank.