Athelas Protocol

Automated health insurance through process streamlining & automation, anti-fraud/abuse software, and Decentralized Autonomous Organization assistance (DAO) to disrupt the health insurance industry

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Warren Buffet – "I think the healthcare problem is the number one problem of America" – July 9th, 2012

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Abstract

Athelas is the first automated, software based, health insurance company, and the first entity to provide a concrete solution to solve the problem of high and quickly growing health insurance premiums in the United States. Although we will still have human assistance and supervision, our goal is to reduce insurance premiums by 40% by disrupting and eliminating to the greatest extent possible, the approximately $581 billion (see analysis section) per year unnecessary cost of health insurance billing and insurance administration to America while also reducing fraud and abuse (target savings $90 billion) in the health care industry. This will be done by creating a disruptor health insurance company, simplifying insurance processes, then automating them using our patent pending anti-fraud and abuse business methods/software, separate decentralized autonomous organization using smart contracts, private Ethereum blockchain, distributed cloud storage, and blockchain based payments. Our ultimate goal is to completely automate health insurance and become a fully automated artificial intelligence technology company. We will also create of a social network to enhance the project and could generate advertising revenue to further reduce insurance costs.

Background/Problem

Size of the problem: As of 2015 healthcare costs the USA a massive $3.2 trillion, we use the personal healthcare portion of this number $2.7 trillion of this representing a significant portion of the 2015 $18.0 Trillion United States GDP.[1] As of 2017 Americans and corporations are paying an average combined health insurance bill of $26,944[2] a year for a family (including $7151 premium and $4534 out of pocket costs for the employee). Triple the cost of 2001. Many people do not realize the extent of this because their employers pay most of it for them. However, this fact can explain why American salaries have not increased sufficiently over the last 15 recent years. Whether corporations have taken potential salary increases and used them to pay for the corporate portion of the insurance premiums increases intentionally or not, essentially this swap has occurred. We calculated that the average hypothetical employee from the 2017 Milliman Medical Index report would be $10,748 per year wealthier in salary today if not for this situation. If, as we argue in this whitepaper, most of these increases were not justified, and instead you go back to 2001 levels of $8414[3] and bring that number to the present adjusting for a fair 3% growth rate we get $13,502, then we subtract from the current $26,944 and after adjusting for corporate tax write offs we find the missing salary of $10,748 (see spreadsheet). Many thousands have been lost over those 16 years. Inconsistent with this data, American health does not appear to be worsening. We are smoking 7.7%[4] less from 2001 to 2015, balancing out the 7.2%[5] increase in obesity (see spreadsheet). Evidence of increased life expectancy and decreasing leading causes of death at least balance out the increase in obesity/ diabetes.[6] Smoking is the number one cause of preventable disease in America according to the CDC[7]. We can therefore conclude that the premium increases by insurance companies were not justified to such an extent.

Certainly, fraud and abuse in the healthcare system ($382 billion in 2012)[8] are part of the problem and our solution addresses some of those issues as well. However, we identified what we believe is the most quickly correctable part of the problem that would still solve the problem for all practical purposes -- health insurance administrative costs. Insurance companies and their supporters have denied the significance of this. We observe that the entire picture is never shown. Insurance companies are essentially just a middle man with a fiduciary responsibility to the American people. We want to see the

fair amount of the American peoples be transferred as much as possible into the hands of the physicians without loss to middlemen. We present the $581 billion (see data and analysis for details) per year true net cost of health insurance billing and administration to America. This calculation equals our $313 billion improved version of the official $210 billion[9] CMS 2015 number (which is total premiums received minus benefits paid, but doesn't include some profits) to see the whole picture, plus the $270 billion[10] estimated cost to *providers* for billing and insurance related costs. To our knowledge, this true net cost number has not been shown anywhere. At best, what has occurred is an ethical breach of the fiduciary responsibility. For us, the $581 billion number is unfathomable. We believe only around $11 billion is required with automation. Unfortunately, no matter what our government does, the insurers still have the power to raise prices. A Canadian style system could solve that problem, but create others. We sidestep that debate and focus on a market based solution.

Heart of the problem: pricing power and lack of normal market forces

1) Premiums are affected by insurer monopoly-like premium pricing power, which is derived from their collusive coordination and antitrust exemption generated by the McCarran-Ferguson act.
2) Simultaneously, premiums are also affected by lack of normal competitive economics in healthcare due to lack of **price transparency**. This enables providers to increase prices and insurers to increase premiums. The lack of pricing transparency is created by a quid pro quo between health insurers and providers that involves insurers allowing providers to increase prices (this is also serious conflict of interest and prevents accountability). Insurers then blame the increasing costs for their increasing premiums while making sure to increase premiums enough to ensure their record breaking profits, increase shareholder dividends, and increased executive pay. This explains why insurers have closely guarded price data and pressured providers to withhold that data until recent government efforts to force some transparency. This must be repeated-without full transparency of healthcare pricing data the market and consumer cannot have normal **competition/economics and fair prices.** The control over pricing data adds to insurers policy premium pricing monopoly power. Obviously, if no one knows if the prices being paid to providers are legitimate or even what those prices are, it is easier for insurers to make complex sounding excuses for increasing premiums. The **complexity** of the insurance processes (the web of various plans and procedures and payment and approval methods) adds to the confusion so people and even politicians are overwhelmed to the point they believe there is nothing they can do. We directly address all of these problems.

Adding insult to injury, it is quite probable that insurers believe they are invulnerable, as some executives have taken as much as $66 million[11] in yearly compensation and lavished large dividend increases to shareholders amid America's ever growing frustration. The insurers also have a certain immunity to antitrust measures (explained in numbers and analysis section) and so they meet and generally work together as a group. This adds to their pricing power, which is their greatest strength and it deflects all attempts to bring them under control. Finally, their lobbyists are there as a safeguard.

The employment growth rate in health insurance companies has exploded, far outstripping the employment growth rate of America's doctors and nurses. They are making record profits and so it is not in their interest to change unless we do something.

Health insurance brokers are another considerable middleman that takes on average a 4 or 5% cut of the pie from the American people with billions in revenue[12]. Our solution can also disrupt that industry.

A group of doctor related problems of note that we address are the current shortage of doctors (especially primary care doctors), physician burnout, low doctor morale and doctors engaging in, "defensive medicine", to be certain of their diagnosis in order to protect themselves from lawsuits.

Key facts and Analysis:

We present some key facts and ask that everyone take a close look before moving on to the solution because the numbers are quite troublesome.

While American families have their premiums and deductibles increased:

- Private health insurers overcharged Medicare hundreds of billions[13] since the start of the Medicare advantage program in which they were *entrusted* to help *reduce* costs for the nation. They have different methods they used to accomplish this. The Affordable Care Act required overpayments to be repaid within 60 days, "of being identified". On Thursday Feb 16th, 2017, the Justice Department announced that it would intervene in a whistleblower's claim against the insurers on this matter.[14]
- Health insurance employment has exploded upward, far outpacing employment growth rates for our doctors and nurses.[15] This makes absolutely no sense whatsoever.
- Health insurance industry profits have doubled over eight years while Americans' incomes declined over the same period.[16]
- In February 2016 a joint effort by 41 Insurance companies sued the Secretary of Health and Human Services because the health insurers were not happy with the Center for Medicare and Medicaid Services CMS final 2014 rule that required them to repay any codes that are not fully supported in the patients' records.[17] They argued that codes included in claim filings are sufficient and being given a standard of identifying overpayments that they, 'should have identified through the exercise of reasonable diligence' was not fair to them. That seems like a reasonable requirement to us.
- 24.5% of health insurance companies still are not meeting the required MLR standard, "80/20 Rule"[18], in at least one market (this is an Obamacare requirement that directed health insurance companies to no longer spend any more than 20% of the income on administration and profits.) That means there are still Insurance companies with 25%, 30% or more administrative costs. Even the newly required 15-20% is absurd. The fact that these numbers are an improvement is disturbing. The health insurance of the future is 1-2% maximum.
- The health insurance industry has been consolidating, leading to decreased competition.[19]
- The Justice Department has been fighting the health insurance industry for using, "most favored nation," status deals to increase prices.[20] Basically, what this really means is-- we will let you (providers) charge more as long as you make our competitors pay even more than us.
- The health insurance industry has been shifting from non-profit to for profit. Although in the current system even the nonprofit ones have an incentive to reduce care.[21]
- Insurers have an exemption to a law called the McCarran-Ferguson act. This exemption allows them to meet and engage in collusive activities that would normally cause government antitrust action.[22] This law applies to everyone else except them tilting the rules of economics in their favor. Some in Congress are currently attempting to pass a repeal of the exemption. The united lobbying group, "America's Health Insurance Plans", have thus far prevented that from happening.

- The Affordable Care Act is set up such that if insurers increase prices they get more subsidies from the government. Given past behavior we all can imagine the consequence of this. This is a conflict of interest. Some insurers like Medica are currently threatening a 43% rate increase if they do not get subsidies[23]

The one company perspective:

What we found in the 2016 10k SEC filing of United Healthcare, the largest insurer, was upsetting. This does not appear to be on their website nor annual report. In 2016 the company had revenue of $144 billion, and Medical payout of $117 billion. That is a difference of $27 billion. That's almost 20%. What is even more disturbing is that the government had to push the industry to improve on these kinds of numbers and furthermore, the smaller insurance companies we understand to be considerably less efficient than the bigger ones so you can imagine how inefficient those numbers are.

(UHC does 750 billion digital transactions a year.[24] Insurers do more transactions than we initially estimated, signaling that Athelas could potentially generate significant savings using blockchain technology.)

The international perspective:

The United States ranked last among a group of advanced economies in a key consolidated multifaceted report on healthcare. Per capita, the USA spends almost triple what New Zealand spends while finishing lower in quality.[25] In terms of administrative costs and efficiency USA was last and we see that it is clear that other countries are far more efficient for the same or better quality of care spending less than half what we do. In the key components of quality and healthy lives, the USA healthcare was average and last respectively. The U.S. ranks last overall with unacceptable scores on all three indicators of healthy lives — mortality amenable to medical care, healthy life expectancy at age 60 and infant mortality.[26] Insurance companies have also tried to justify the situation with the argument, "the best healthcare justifies the high prices" or tried to blame the problems on medical malpractice lawsuits. That is a $50 billion problem dwarfed by insurance administrative costs and at least serves a purpose. The justifications of increasing premiums based on better quality are simply not true.

Key international deduction: We know for a fact that quality healthcare/insurance can be attained for much less. If New Zealand can spend 37% of what we spend per person while offering better quality (and that is without the technological innovation we are doing) then we can at least do that much.

Important Estimated Calculations:

Premium Payments From Individuals to Private Insurers:

(minus corporate portion paid to private insurers)
=Total USA personal healthcare 3.05 Trillion (CMS NHE Tables 2015)[27]
(not counting investments and research and cost of Medicare/Medicaid admin) =
Minus **Corporate** premium payments to private insurance -.726 T (CMS 2015)
Minus state and local payments -.327 T (CMS 2015)

*Minus Property & Casualty (table 5)	-.034 T (CMS 2015)
Minus Medicare and Medicaid	-1.191 T (CMS 2015)
Minus direct individual payment (out of pocket)	-.338 T (CMS 2015)
Minus other Gov health insurance plans Vets, DoD	-.121 T (CMS 2015)
= **Est total premium payments from *individuals***	**.313 ($313 Billion)**
	$313 billion (est.2015)

Americans pay approximately $313 billion in premiums every year

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The Improved Net Cost of Private Health Insurance, by Athelas:

Net Revenue received by private insurers USA	1.039 Trillion (CMS 2015)
($313b from individuals $726b from corporations)	(1.0+ T our est. 2015)
Minus est. net benefits paid by private insurers USA	.730 T (our est. 2015)
= Net Cost of Private Health Ins. Inefficiency	**$309 billion**

****This is a key calculation we have not seen anywhere except 5 levels deep on the CMS website, as stated earlier the CMS # is $210 billion, but the number does not include some information like health insurers profits so we adjusted it using revenue to see the whole picture.

$309 billion disappears from Insurers' revenues to the point of benefits paid

IMPROVED VERSION OF INSURER SIDE NET COST OF HEALTH INSURANCE USING 2015 DATA:

		2015	(in billions)		
		Market		Medical Cost (MC)	
LARGE INSURERS		Share	Revenue	MC	MC/Revenue
SEC 10-k	United	11.4%	157	103	66%
SEC 10-k	Anthem	9.2%	79	56.7	72%
SEC 10-k	Humana	8.7%	54.3	44.3	82%
SEC 10-k	Aetna	4.1%	57.6	41.7	72%
SEC 10-k	Centene	3.4%	22.8	17.2	75%
SEC 10-K	Wellcare	2.1%	13.8	11.9	86%
Markfarrah	Kaiser	2.0%	61	NA	NA
SEC 10-k	Molina	2.0%	14.2	11.8	83%
SEC 10-k	Cigna	5.0%	37.8	18.3	48%
		47.9%	497.5		73%
Estimate for Industry Totals:		100%	1000+	Ind Average Est. 73% MC/Rev	
		Estimate 1 Trillion+ Revenue			
		Estimate Medical Costs Paid (73%) = 730 Billion			
(Revenue - Medical Benefits Paid) =		(Estimated) Athelas Net Cost Of Health Insurance = 270+ Billion			

See spreadsheet:
https://docs.google.com/spreadsheets/d/10phCuxj7hMNNNl8aTx2miGkmuoUxxCc1mKRgV79WxRg/edit?usp=sharing

Net Cost of Private Health Insurance to *Providers*:

Provider spending on billing and insurance related functions = 10%
(Using 10% estimate from 2005 Kahn Kronick California Study applied to 2017)[28]
2.71 Trillion (amount to healthcare industry) * 10% = $**271 Billion Net cost to providers**

Cost of Private Health Insurance to Medicare: ????

The Athelas True Net Cost of Private Health Insurance to the United States:
Net Cost of Private Health Insurance to Providers = $271 billion
+
Net cost of Health Ins (Premiums-Medical payouts) = $310 billion+
=True Net Cost of Private Health Insurance to the United States = $581 billion+ per year

We present this final number, which to our knowledge has not been presented anywhere. In light of this sobering figure, the current attempts to obtain government subsidies by the health insurers out of, "need", defies logical reasoning and becomes transparent for what it really is.

Spreadsheet link:

https://docs.google.com/spreadsheets/d/10phCuxj7hMNNNl8aTx2miGkmuoUxxCc1mKRgV79WxRg/edit?usp=sharing

Hypothetical Cost Feasability Test:
Cost of Planned Cuts/Rebates/Bonus/Discounts Placed in a National Perspective

Cost of Planned Doctor's 10% Bonus (*part of anti-fraud and abuse strategy mechanism):
Number of physicians in United States 923308[29]
Average physician income $294,000[30]
Total doctors' yearly income $271 billion
10% doctors yearly bonus = $27.1 billion
Paid to top 50% of Physicians in ranking = $13.6 billion Cost of Bonus

Cost of Planned 6% Discount for corporations:
Yearly corporate payments to private insurers = estimate $485 billion[31] (They get gov assistance with the rest)
6% yearly discount = $29.6 billion

Cost of 40% Planned Premium reduction for Americans or rebate:
Estimated total premium payments for 2015 = $309 billion
= $123.6 billion

Cost of 20% Planned out of pocket/deductible reduction for Americans or rebate
Total out of pocket for Americans = 338 billion (CMS 2015)
= $67 billion

TOTAL NATIONAL COST OF STRATEGY FOR COMPARISON = $234.4 billion

As $234.4 billion comes in under the $581 billion True Net Cost of Private Health Insurance administration and also under the $309 billion insurance side net cost that insurance companies directly control we can conclude that the planned % reductions are possible. Our goal is to be able to execute close to these numbers on a percentage basis using our automation strategy although we will begin gradually the first year as we stress test the system. When the additional benefits of fighting fraud and abuse (target 90 billion) is considered, the potential benefits are substantial.

Unknown benefits:
How much of large (Est potential $271 billion or 10% of providers income) savings from the reduction process we provide to the healthcare providers can Athelas negotiate into lower costs and further premium reductions??? (target $90 billion or 4%)
How much fraud and abuse can Athelas reduce (target $90 billion or 3.7%)?? How many new young healthy members Athelas bring into the system through lower pricing?

Problem Conclusion/ Opportunity: Dramatic reduction of Insurance administrative costs could enable a 40% reduction of Premiums, conditional 10% bonus for doctors (part of our anti-fraud and abuse program), 6% discount for corporations, large savings to providers, and a 20%+ reduction in deductibles. This is not even considering further billions saved by enhanced anti-fraud and abuse activities. The data prove conclusively that the claims made to the American people that administrative costs, "are insignificant" are false. In addition, as a critical industry that has drastic effects on peoples' lives, the health insurance industry must be judged on a revenue to benefits paid basis.

The Solution: The Athelas Protocol

Previous attempts to solve this problem by various groups, including the government, have not succeeded because they have not addressed the core problem (depth) and not sufficiently covered the broad range of different variables required (breadth). Our solution involves:

1. The creation of a disruptor insurance company via ICO/crypto crowdfund and later IPO
2. Insurance business process simplification/automation/ which allows for a fraction of the administrative expense (see details below)---as long as the simplification is concurrently supported by
3. Strong anti-fraud and abuse software measures/processes (see details below) and
4. Strong pro-competition software measures, (see details below)
5. Implementation of a separate decentralized autonomous organization run by smart contracts to assist Athelas
6. Empowering independent primary care doctors
7. A strategy to increase physician income, decrease doctor shortages, prevent malpractice lawsuits, and fighting physician burnout
8. *As a precaution - Mobilizing volunteers managed by a leaner case management staff
9. Ethereum Swarm Web 3.0 - We will lead the industry in use of bleeding edge blockchain technologies like Ethereum Swarm Web 3.0, to gain all security, cost and other related advantages beginning with backups to decentralized (distributed) cloud storage

10. Cost reduction from blockchain on transactions
11. **(Not a necessary part of the solution) We will roll out a social network quickly and before the insurance operation begins doing business. Users/Members will receive tokens from our advertising revenue that will be credited towards health insurance or could be sold on an exchange. The social network will also integrate nicely with our pricing database/website.

    Ultimately, and ideally, the process could evolve into full automation with artificial intelligence and/or transformation into a non-profit completely decentralized autonomous organization. We do not believe insurance companies should be for profit, but we see that the solution requires starting out as a for profit corporation to gain IPO funds in phase 3 (see the roadmap) after the upcoming initial crowdfund/ICO. We commit to never paying dividends. Stockholders will profit via stock price increases from market share growth as we will essentially become a technology company.

1) A Disruptor Breaches The Entry Barrier

The creation of a disruptor tech based insurance company for the purpose of disrupting from within rather than external solutions which have always failed has never been attempted. Some recent ICOs have raised sufficient quantities to what would be needed to set this process in motion (see the roadmap). Once Americans have the choice of purchasing fair and appropriately priced, high quality health insurance, the grand insurance illusion is dispelled and their greatest strength becomes their ultimate weakness. At this point they are forced to try to match us as we take market share, but our patents and/or their colossal administrative sizes would then most likely, prevent them from doing so sufficiently. This would lead to losses, plummeting stock prices and potentially, eventual acquisition by Athelas to ensure permanent fulfillment of their fiduciary duties rather than a later return to the same frustrations for the nation.

2) Simplification & Automation

Instead of hundreds of plans and extremely high levels of confusion and questions, 1 plan for all will be offered with a few different rates for certain groups. What about choices? Our response is if your cost is dramatically lower than everyone else's cost then you can easily afford to give everyone quality health insurance at a reasonable price instead of making people choose between a very expensive premium or a very expensive deductible and extorting the corporations as is now the case. We will attempt to have all doctors, "in network". Less confusion (instant provider sign up is an added luxury we are considering and not one of the essential components) for customers means less questions. Less work to do means less administration costs. Instead of networks, (though we could build networks if we choose to do so) we will negotiate with providers based on our much faster software based payment and approval process. We understand providers wait a considerable amount of time, sometimes months, before being paid and they obviously detest this. We will pay competitive rates to all providers due to our significant advantage in efficiency and we will save them large sums (10.8% = 270 Billion/2.48Trillion cost) by saving them time and effort on claims and billing. The, authorizations, claims and "preauthorization", will be handled by our software with the primary care doctors instantaneously (with exceptions) and our software will monitor, guard, and act

against abuse (see next section). All this simplification allows for software automation, fast execution, and far less administrative cost passed on to Americans. Insurance is destined for artificial intelligence, we are simply beginning the automation process. Though we will still have human beings available, we will try to reduce the need to call anyone through automation, simplicity, and high efficiency.

We expect to start off with smaller decreases to premiums and deductibles and upon stress testing all systems and monitoring operational cash flows we will make any necessary adjustments/improvements while transitioning to the new rates in stages.

3&4) Anti-Fraud & Abuse/ Pro-Competition Software Automation:

We have prepared many strategies to control for fraud and abuse mostly through our software. We are patent pending (*see the, "why patent?" section for explanation) on a some of these business methods. Fighting fraud and abuse will be one of our core competencies. The first step in the system involves using the pricing data and power of being an insurance company to be able to create for the first time a true free public quantitative transparent and accurate provider ranking database website based on price and quality. Non-insurance entities have tried to estimate prices, but have had little or no effect on the situation. Athelas software will update the ranking website based on incoming provider performance quality data (outcomes data, malpractice data, satisfaction data, Athelas rank, National rank) and price data. This website will provide proper alignment of interests as providers will want to be ranked highly in quality and be competitive in pricing rank. This partially solves the lack of competition problem in healthcare and has never been done before due to resistance from insurers. Even with our pricing information as an insurance company and ranking website, pricing transparency alone does not solve the problem. The pricing website requires people clearly seeing the price and quality data and the potential consequences and doing so *within the right time frame*. The proper communication of pricing also has not been previously deployed to our knowledge. The software will communicate in real time with patients and providers via text/email/robocall and most importantly the primary doctor's software interface at the time of (prescription/specialist/imaging/lab work etc.) authorization by the doctor giving information at the critical decision-making stage about which *high quality* providers do not charge abusive pricing. As the model involves a fair ratio of patient coinsurance based on percentage (keeping some incentive or, "skin in the game", for the patient) and the patients' rebates and doctors bonus in our program will be adjusted based on use of highly rated/ranked providers, the patient can be assisted in making the reasonable (though not imposed), high quality/ fair cost provider decision. Research has not been able to find statistical evidence of a relationship between cost and quality in the healthcare industry[32]. In other words, there are very high quality providers who charge fair rates. The people just need to find them. Free Uber/Lyft transportation to and from the high rated provider will be provided in certain cases. Furthermore, the software uses a ratio of # of positive test results to total # of tests authorized to monitor testing waste, it checks for physician self-referrals or other referral red flags, the

software monitors key higher risk abuse areas like hospital in-patient admission, key fraud/abuse related groups like senior citizens (who can be exploited). In addition, the software creates a doctors' bonus for all doctors that deal with us and is paid directly to the physicians who are another vital cog in this formula's system. The software will automatically add to or subtract from the doctors' bonus based on performance measures from the ranking database and will help ensure alignment of interests of the physician with those of the nation. The bonus initially will be paid via traditional means or tokens with a gradual shift to tokens over time. The patients will have a large rebate based on certain positive healthy behavior, communicating certain information to Athelas, and use of high rated providers from the ranking website. In another case example, though the vast majority of providers are honest trusted professionals, there is a problem called upcoding where certain providers will add codes on the patient record for treatments that did not occur or that are more expensive than what was actually performed. Here our software would check the codes and compare to what was originally requested, check suitability of the code to what the diagnosis code is, issue warnings to providers immediately for deterrence/correction, if necessary penalize providers by reducing their bonus, slowing down payment, deduct points/lowering their ranking on the website, and/or assign the issue to case managers, DAO, investigator or volunteers depending on the situation. A team of investigators will exist to receive red flag alerts from the software for immediate investigation when called upon by the software. A final part of the incentive/penalty part of the system to reduce abuse levels will be having 3 procedure/test authorization levels for physicians also based on the ranking database. We are confident physicians will highly prize having the highest procedure authorization level and will be hesitant to lose such access.

A DAO that will be assigned to assist in many areas including where possible anti-fraud and abuse situations. Also, executives will regularly be receiving real time analytical reports from the software overseeing the smoothness of the operation.

5) The DAO Automation

We are preparing a separate decentralized autonomous organization programmed with smart contacts to assist our patients and our mission. We hope the DAO will be self-funding, having its own, "coin" and, "gas" fees, which, if needed, we will also honor along with our token to support its value. If financially assisting the DAO provides a net gain for Athelas and our mission, we will provide funds to support the organization if it fails to be self-funding. This will also serve as an initial experiment to explore the effectiveness and regulatory issues of any role a DAO may play in achieving the ultimate goal of full automation. Initially, the DAO will be charged with assisting our software and employees with marketing and patient assistance matters alongside our case managers and volunteers. In addition, we expect the DAO to assist with political lobbying and supporter mobilization, human resources, actuarial analysis, and accounting.

The public and permanent blockchain has compliance implications. Although the permanent nature of a public blockchain/DAO could cause problems with national HIPAA compliance requirements, the retention by Athelas of control over patient data in its private blockchain

solves this problem while still enabling the power of the public DAO departments. There will be a HIPAA required contract between Athelas and the DAO. Once we have explored all unchartered waters of efficiency and compliance for the DAO we will be able to create an additional DAO to further assist in additional areas.

Other Automation

All health insurance calculations/payments will be connected to the company's risk, accounting, compliance, tax and financial software/systems. In some cases, 3rd party software may be used to assist. Investments may be automated using financially engineered black box systems and passive exchange traded funds. Real time internal financial statements will be regularly generated and reports produced for executive management oversight. Wherever the software may need assistance we hope the decentralized autonomous organization will fill the gap, and if not, then our employees will do so.

6) Empowering Independent Primary Care Doctors

Empowering independent primary care providers should have a major impact on the healthcare industry. Our substantial 15% bonus for independent primary care providers (5% for specialists) and the privilege of authorizing many procedures will encourage these most highly trusted of doctors to help our company software assist the patients to make the best choices of high quality combined with fair pricing. For example, when the family doctor sits down with the patient to enter a prescription and authorize an MRI: Athelas's system after doing a quick analysis would provide the doctor a printout with the local MRI centers and how much they are charging (price differences ranging from $4000 to $500 for similar work). The doctor shows the list to the patient and they discuss which center makes sense to go to.

7) Happy Doctors = Better Care

Excellent compensation for our nation's physicians is necessary. Especially primary care where the shortage is paramount. Our direct to doctor bonus system through our software and our tokens will increase the pay for the central component of healthcare (doctors). This bonus will allow us to reward or penalize good or bad performance. Increased physician pay will encourage more doctors to enter the field, reduce overburdened doctors, and decrease current problems with doctor burn out. Happier, better paid, better rested, doctors lead to better care for all. Higher pay may also reduce recent trends of doctors spending less time with patients, which reduces quality of care. Many doctors currently feel that they are being cut out of the picture (they actually receive only 10.1% of the healthcare money! See calculation link below) and this hardly seems justified as they are the ones that save lives and heal people. Regarding doctors practicing, "defensive medicine", and ordering imaging to verify their professional opinion, we disagree with the critics and see value in doctors (and patients) trying to be certain of their diagnosis. Our solution to this will focus on lowering the cost of the *tests* rather than being overly aggressive in denying tests as other insurers do. We would seek to secure equipment financing deals with banks, purchase diagnostic equipment and set up strategically located diagnostic centers with low costs that could save substantial amounts and, "pay for themselves". If the doctors authorize imaging at our centers, we will use these lower costs to support the, "defensive", strategy and possibly lower costs overall by helping reduce extremely high malpractice insurance rates on doctors. In

calculating the profitability on this machinery, we noticed the profitability is extremely high and realized we could offer multiple tests for the price charged by providers, allowing for more tests for everyone (see spreadsheet link below).

Doctors pay and bonus excel spreadsheet and also
see equipment financing excel spreadsheet here:

https://docs.google.com/spreadsheets/d/131bMT-JRGA5TBOlMQ94hW-AAHj22JJ_Vszr1dBwTkrk/edit?usp=sharing

8) Volunteers

If any case management situation arises where our software, our employees, and our DAO are not sufficient, we will be prepared to work with volunteers and volunteer organizations managed by a lean case management staff to assist our software. Volunteers could, if needed, talk to seniors, advise them, help improve senior patient compliance, senior patient self-management and verifying information to help protect seniors from pricing abuse and unnecessary, or fictitious charge abuse, especially in in–patient hospitalization situations.

We will invest in artificial intelligence and expect over time we would achieve full automation. Layoffs are a part of necessary beneficial disruption. We believe the health insurance industry is different from any other. Health insurance is simply not a business that should be employing large numbers of people as all can see from the destructive effects like weak American wage growth, millions without coverage, and political chaos. The current health regime is mathematically unsustainable and will lead to eventual collapse. Artificial intelligence is the perfect logical evolution of health insurance and will eventually enable quality universal healthcare. We are very concerned about people displaced by industry disruption and we will hopefully be in a position in the future to be able to seed new businesses and perhaps be able to employ persons in areas most affected by health insurance layoffs. America's tech industry has shown that disruption can have amazing net benefits for America.

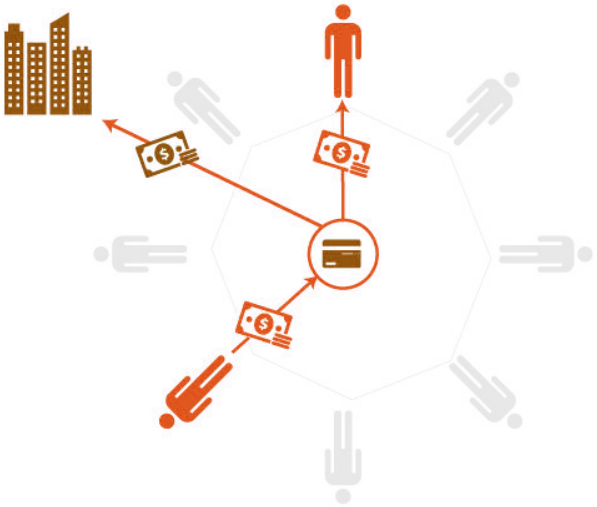
9) Ethereum/Swarm, Maidsafe, Storj and Decentralized Cloud storage

We will benefit from cost savings and security advantages by leading the healthcare/health insurance industry's $3 Trillion GDP into either the new internet promised by Maidsafe or Ethereum/Swarm Web 3.0 project for our main software/databases. We may also partner with Storj for required data backups and receive cost and security advantages of the latest distributed cloud technology if Storj is prepared to handle this type of arrangement at that time. Storj is already operational.

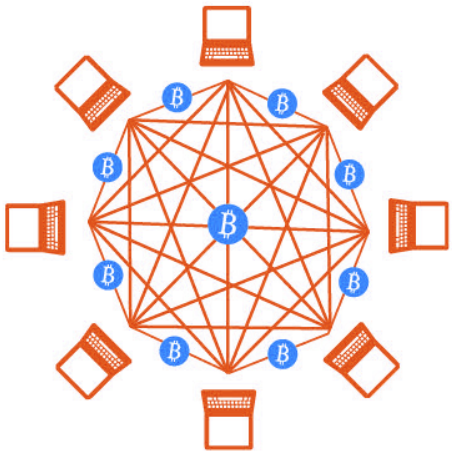
10) Cost Savings On Payments:

Using initially both traditional 3rd Party Credit Card Processing and blockchain technology based payments we will attempt to transition the industry to increasingly use the Insurance Token we will release for stakeholders to receive payment. We will continue to research crypto currency strategies to

attempt to reduce transaction costs to the maximum extent possible on the trillions of transactions that take place in healthcare every year in the USA.



Traditional Payment System



Blockchain Payments

11) An insurance company combined with Facebook

We believe the billions in advertising revenue belongs to the people and we will provide users of the our social network with large insurance credits/discounts.

Additional Benefits:

Lowering rates without increasing premium age variation (the difference between rates for the young and rates for the older population) will result in an increase in currently uninsured young adult/healthy adult enrollment WITHOUT decreasing older adult enrollment and hurting our seniors as current insurers would probably do. Disruption of the industry and lowering premiums will have surprising, pervasive and normalizing effects across the industry such as this. This would bring in substantial amounts not factored into our calculations.

Opportunities for Allies:

Physicians/hospitals will benefit significantly from:
Near immediate approval and payment (in most cases). Elimination/reduction/simplification of filing, faxing, and phone calls and increased speed and efficiency. Reduction in errors and potential lawsuits due to increased automation. Most claims will get approved as soon as the primary doctor clicks on the prescription/specialist request/test/lab work and the software quickly reviews and authorizes it in our system. We will provide net profit gains for providers as our doctor bonuses, plus considerable cost savings will provide a hefty boost to them. Even most abusive providers will gain because our savings to

them will exceed what we prevent in fraud and abuse. Providers will all be our allies and we plan to have a synergistic constructive partnership with providers.

Corporations:
When Starbucks spends more on health insurance than it does on coffee beans you know there is a serious problem. Corporations will be our major allies in this process and we expect them to eagerly be signing up with us. The health cost issue with corporations is very well known so we are not posting the data on it. We will increase the earnings of every company that deals with us.

Moonshot Projects & Additional Plans:

The Special Insurance Token Reserve for America:

Athelas will be keeping a reserve of tokens for a supplemental Insurance Capital Reserve and investment fund in escrow though the separate Athelas foundation. If we grow in size and especially if industry disruption takes place, the healthcare industry is so large that the impact on the token would be vast. Athelas would be in an ideal position to aggressively push for use of our insurance token throughout the industry as a standard. Establishing this standard could help enable universal reasonably priced healthcare. We estimate that using a 75% token adoption scenario the healthcare industry would require a daily volume of at least 17 billion insurance tokens. This would cause a dramatic increase in price even after we sold our token reserve into the market (that sale would be years down the road and not impact the current crowdfund) creating a massive insurance reserve and fund that would be invested and the yearly income from that would allow us to reduce premiums even further. We estimate the tokens would have a theoretical $3998 potential value (see spreadsheet link below). By intervening at the estimated final price for the token given the sale of our token reserve holdings we could prevent volatility losses to others, and allow the tokens, via orderly trading methods, to be sold into the market over time. This would simultaneously bring stability to price of the token, this would stabilize the price at around $2000, adding to the reliability of the token. Executing the 250 million tokens at an average price of $2000 would create an unprecedented $500 billion-dollar insurance fund enabling us to use investments on this fund to lower premiums. At that point, we could convert Athelas into a not for profit reducing taxes and lowering expenses even more. This is not necessary to achieve our mission, but we will create the extra tokens in case that all goes as planned. In emergency cases we will reserve the right to access the reserve such as if, for example, a large scale political fight were to ensue or a major lawsuit.

Spreadsheet link:
https://docs.google.com/spreadsheets/d/10phCuxj7hMNNNl8aTx2miGkmuoUxxCc1mKRgV79WxRg/edit?usp=sharing

Negotiating with Pharmaceutical Companies

We plan to engage and negotiate on drugs with the pharmaceutical industry and perhaps join forces with or if possible acquire other emerging innovative companies to assist us in that negotiation. We believe further premium reduction will be found here as the Pharmaceutical industry has some of the fattest profit margins on Earth.

Stem cells:

Additionally, our company plans to support the coverage of revolutionary new adult stem cell technology that is available right now and that the health insurance industry has refused to cover. Stem cell technology has the potential to dramatically improve humanity's quality of life and health and therefore reduce insurance premiums. We plan (if possible) to cover cutting edge adult stem cell therapy that insurers and/or the FDA have short shortsightedly refused to recognize. Stem cell technology presents another revolution in healthcare for humanity and it's time to get it to the masses. Every year thousands of people die because the industry is behind on technology.

Cancer Cure Project:

We plan to work with the pharmaceutical industry and promote faster investigation of a cure for cancer as we believe administration of multiple simultaneous immuno therapy treatments combined with person specific cancer DNA sequencing make the cure imminent.

Oncimmune – Early CDT - There is a simple blood test available that can detect lung cancer before a CT can and that has not sufficiently been communicated by the industry. This should be a standard and covered test. Lives are being lost unnecessarily as cancer caught in later stages requires far more care and cost to the nation.

Blockchain: Internet of things (IOT)

We plan to use Internet of things technology partnering with companies such as Fitbit to communicate with our system and help provide better health outcomes by helping us reward people for healthy behavior with tokens or discounts. We will be able to monitor and reward healthy behavior.

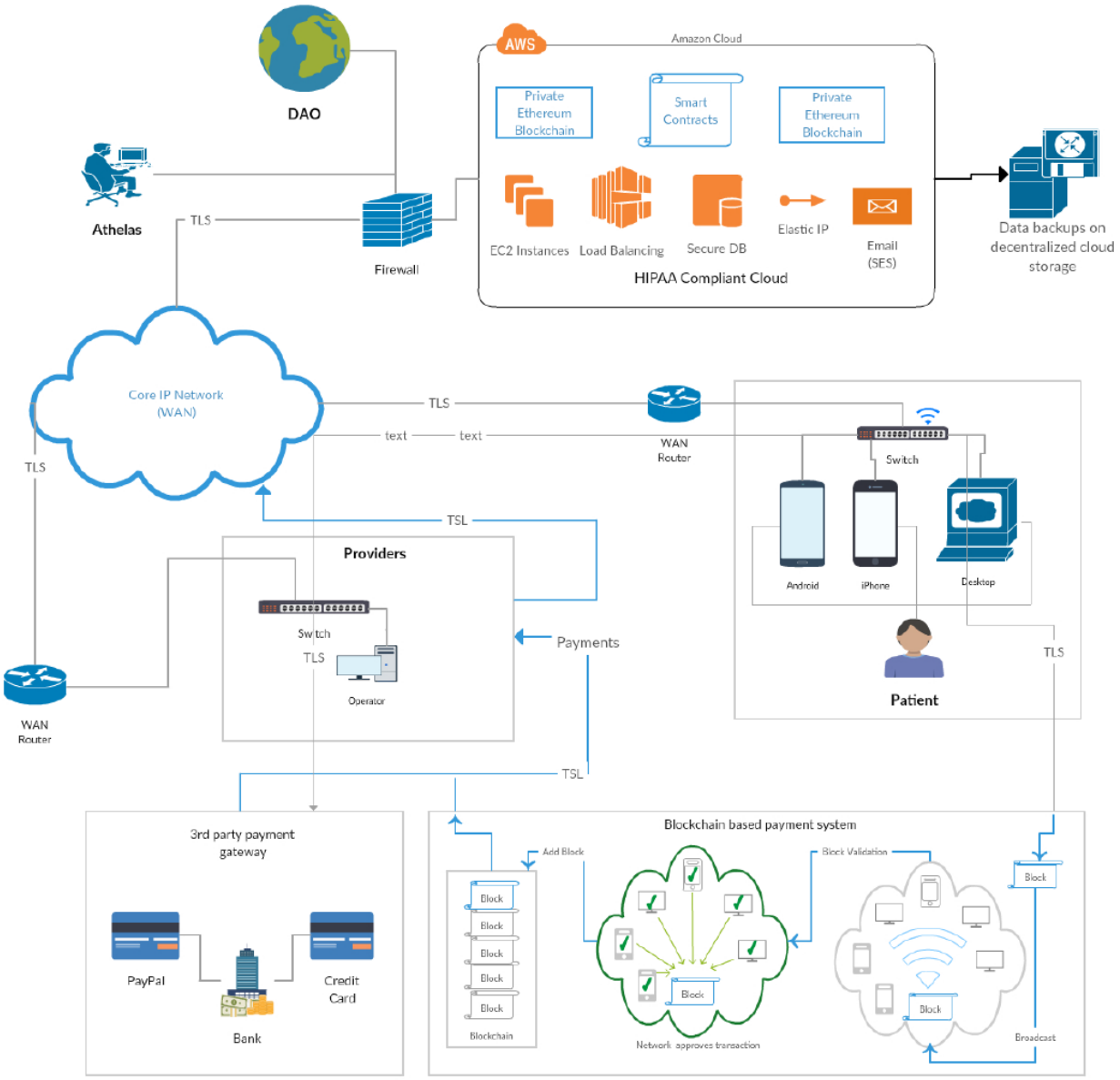
Support for Crypto Currency Industry:

We see an opportunity to contribute to the crypto currency industry in its expansion by accepting Bitcoin and Ethereum for a period of time (perhaps the first two years) for publicity purposes before eventually focusing insurance payments on our token.

Why Patent?

We are patent pending. Sometimes there is a negative side to patents. In this case we believe the patents serve an important purpose towards America's goals. It is true that even without the patents, we could pose a threat to disrupt the industry. However, for disruption to best occur, our competitors must lose profitability, market share, earnings and consequently stock price. This would put them in a position to be acquired. Should they try to replicate our model, if we are without patent protection, they would be able to cut expenses faster and slow our expansion. If they were to find a way to drive us out of business it would be reasonable to presume a return of the problems we are trying to solve. A review of health insurance industry behavior shows that trusting the insurers to change is not an option. To the greatest extent possible they must be acquired by Athelas.

Preliminary Network Topology Diagram:



The Roadmap:

Phase 1: Given the size of some of the crypto crowd funds, a good performing crowd fund would support the creation of an insurance company.

Phase 2: Next would be the regulatory phase as we go through regulatory process. Simultaneously we would be meeting and negotiating with providers and corporations during this time.

Phase 3: Given our minimal administrative cost, Athelas would have a considerable probability of growing quickly as desperate corporations and individuals seek significant cost savings for quality health insurance. This would be newsworthy and raise awareness on Wall Street.

Phase 4: This point an initial public offering would become possible (hence why we chose a for-profit model) enabling us to raise significantly more and give us the capital base needed to grow into a large insurer quickly. An IPOs raises the question of control and the company becoming like the others. However, there is a special stock offering structure that would allow us to maintain control while bringing in IPO money (see Facebook IPO) allowing our highly committed founder to maintain the trajectory. Furthermore, we will incorporate into our corporate constitution our corporate governance philosophy which is that the main objective of all insurance companies is to provide quality insurance for the lowest premium and be a fiduciary advocate for the American people while retaining enough to maintain or grow the reserve fund and make technological investment. As we will be at heart a streamlined software based technology company shareholders will be compensated by the growth of our market share and stock price as they are with many technology companies and not via dividends. In fact, we commit to never paying a dividend. Furthermore, the special status that our company would attain in the eyes of the American people should our vision succeed, would add a special immeasurable value to our company`s brand and this will be reflected in the price of the stock.

Phase 5: If possible, conversion to non-profit.

Threats/Risk to Company:

We fully anticipate challenges and roadblocks by entrenched interests. Our opponents have very deep pockets, powerful corrupt allies, and an army of lobbyists. This is the primary risk we foresee. It is almost certain our competitors will attempt to use their power to influence powerful politicians and/or regulators against us. They may try to turn public opinion against us with misinformation. However, we are confident that with the creation of Athelas as an insurance company an event horizon will have been reached. There is outrage among corporations, doctors, some politicians, and especially the general population and we believe there is a high probability that any corrupt collusive tactics will, with Athelas leadership and exposure, lead to a large pushback from our supporters as well as all the other stakeholders. We have made plans for this type of political challenge and upon successful crowdfund we will immediately seek to contact key political figures. Also, we are confident of being able to meet and exceed, any and all relevant industry rules and regulations if we are treated fairly. We are emboldened in the knowledge that our goals are America’s goals in this important endeavor. In the event we are unable to attain our primary funding goals, there are a number of options available such as licensing our software and services to assist Medicare and Medicaid or mobilizing to fight insurance industry corruption. We are confident, however, that the American people will grab the bull by the horns with this amazing opportunity and help us achieve something historic.

Crowdfund Token:

Potential Token Valuation:

As discussed under the Token Fund/Reserve plan the positioning of Athelas as an insurance company should automatically put us in a position stimulate substantial demand for our token. Should disruption take place the impact on the token would be immense. There are no guarantees of course.

Excel Spreadsheet here:
https://docs.google.com/spreadsheets/d/10phCuxj7hMNNNl8aTx2miGkmuoUxxCc1mKRgV79WxRg/edit?usp=sharing

Token Creation:

- *Number of tokens released (free floating tokens): 250,000,000
- Total Number of tokens: 500,000,000 (including tokens kept for the American people's future supplemental token created Insurance Capital Reserve or emergency)
- Expected Exchange rate: 1 Ether = 100 Insurance Industry Reform Tokens (check website)
- Distribution will take place after the crowdfund time is over (Date-see website)
- 50% of the tokens will be retained to fund the Token American Peoples Insurance Reserve and held in an escrow account. These are held for the long term and will not be used unless emergency requires it or the market is extremely strong and able to handle their sale as described in the token fund section.
- Token Crowdfund cap $350,000,000.

Token "Float" Distribution (Free trading tokens):

Of the 250,000,000 tokens:

- 20% will be retained by Athelas for any unforeseen startup or operational issues and/or investment in artificial intelligence technology or strategic acquisition
- 63% will be released to the contributors
- 9% will go to the founders and early backers (75% of these will be sale restricted for 2 years)
- 8% will be used for marketing bounties -unused will be destroyed. Released after ICO.
- We will announce the contribution exchange rate on the website shortly.

Conclusion:

Health insurance industry inefficiency has cost money and cost lives. Athelas understands the fiduciary responsibility of a health insurance company and we commit to abide by that standard. We will negotiate the lowest possible premiums that we can for high quality health insurance for Americans while investing in technology and seek to use innovation to help find ways to get Americans access to revolutionary technologies like stem cell therapies faster. These things will be built into our corporate constitution. We will use the immense power of an insurance company to advocate on behalf of the people and bring about change. Progress towards these goals will influence the adoption and price of the token and lead to a stock exchange IPO to propel Athelas even further. As explained in the roadmap we will structure any IPO to maintain control and be resistant to demands for dividends from shareholders. Also, the founder will eventually transfer power in such a way that guarantees continuation of the vision/mission. This will involve conversion to a not for profit and having artificial intelligence or some form of DAO eventually control the company.

What an insurance company does is it transfers money from the people to the providers and tries to add some value in controlling for abuse. Yet, as we have shown in this whitepaper, many actions taken by the insurers and data clearly seem to indicate they actually engage in doing the opposite. Is it worth the $300 billion they take in the process or $581 billion we have shown they cost America ---to make our problems worse? The current situation will continue to suppress American wage growth. We have presented the new path for America.

We have shown in this whitepaper:

A) That health insurance administrative cost is one of the two major problems in healthcare and is caused by corruption, lack of pricing transparency, lack of competition, and unnecessary insurance process complexity.
B) The true net cost of private health insurance to America.
C) The effect on American incomes ($10,748 loss)
D) The falsity of the clam of the insurers or their defenders that administrative costs are insignificant by mathematically demonstrating how drastically reducing far less than the $581 billion in health insurance True Net Cost would solve our nation's health insurance cost problems.
E) The mathematical feasibility of the proposed cuts/rebates/bonuses/discounts.
F) The solution and details on how the cost reduction could be accomplished via crypto crowdfund created Insurance company to disrupt, simplification, automation, anti-fraud/abuse and pro-competition measures, DAO, & our patents.

Review of Planned Cuts/Savings/Bonuses:

- Goal of 90-95% less in insurance administrative expenses vs competitors
- 40% reduction in premiums or direct rebate to members/patients
- 10% Savings to providers of providers that deal with us
- 20% reduction in fraud and abuse
- 6% discount for corporations that deal with us
- 10% bonus for doctors contingent on performance
- 20% reduction in deductibles

Having the potential to influence healthcare's 17% of US GDP towards blockchain and cryptocurrencies could have benefits to the entire crypto/blockchain/Ethereum/Bitcoin movement.

Figures presented are based on estimates from reliable sources and our own calculations. We have found the industry data to be sometimes inconsistent. We attempted to compensate for this by calculating data from different perspectives. Nevertheless, we ask the readers to consider the general concepts presented here and the estimates and not on exact numbers.

Should our funding goals fall too far short of what is needed to start an insurance company, we will explore other possibilities such as assisting Medicare and Medicaid with our software and services to save the country money that way and/or becoming an organization leading a political fight for change in health insurance/healthcare industry as we have a deep understanding of what is wrong with the industry. Also, if we fall short, but make substantial progress, we could focus on additional marketing and a second round of crowdfunding to reach what is needed to start an insurance company.

Contribution Terms and Conditions/Token Volatility:

Contribution Terms and Conditions:

Crypto token ICO crowd funding is a new type of crowd funding superior to traditional crowd funding where you usually only receive a small thank you item like a t-shirt or product and instead receive tokens that can provide significant benefits. The tokens you receive are not securities. They are not similar to securities. Tokens are a not an offer to sell or sale of stock, shares, interest, participation, profit sharing, certificates, voting trusts, limited partnership interest, interest in a joint venture, interest in a business trust or subscriptions in Athelas or any other entity. Nor are the tokens convertible into any such things previously described, nor are they futures on any such things previously described. Nor are they warrants or rights to subscribe to any such things. Nor are they puts, calls, straddles, or other option or privilege of buying such things. The value of the tokens is based on the evolution of demand for them as a means of rewarding doctors and patients and as a means of transactional exchange in the enormous healthcare and health insurance industries which make roughly 16% of the GDP of the United States in revenue. Upon Athelas reaching phase 3 you would also be able to use them to purchase health insurance. Crypto currencies/crypto tokens can lose their value and have immense volatility.
You agree that you have read our white paper, which is for informational purposes only.
The founders will be restricted from selling at least 80% of their tokens for at least 24 months as a show of confidence in the strategy.

Again, crypto tokens are extremely volatile! As with all tokens and crowdfund/ICO projects there are no guarantees of success. Donations/contributions are not refundable.

References:

[1] CMS Centers For Medicare & Medicaid Services, (2016), NHE Tables zip, Table 4 spreadsheet

https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html

World Bank, $18 Trillion USA GDP 2015 -World Bank.org, http://data.worldbank.org/indicator/NY.GDP.MKTP.cd

[2] Girod, C., Hart, S., & Waltz (2017), 2017 Milliman Medical Index: $27,000http://careers.milliman.com/uploadedFiles/insight/Periodicals/mmi/2017-milliman-medical-index.pdf

[3] Milliman Inc., (2006), Milliman Medical Index 2005 http://www.uslabormarket.sakura.ne.jp/topics/05/05061/050604%20milliman%20medical%20index%202005.pdf

[4] Centers for Disease Control & Prevention, Trends in Current Cigarette Smoking Among High School Students and Adults, United States, 1965–2014: https://www.cdc.gov/tobacco/data_statistics/tables/trends/cig_smoking/index.htm
Current Cigarette Smoking Among Adults in the United States https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm

[5] Centers for Disease Control & Prevention: https://www.cdc.gov/nchs/data/databriefs/db219.pdf https://nccd.cdc.gov/dnpao_dtm/rdPage.aspx?rdReport=DNPAO_DTM.ExploreByLocation&rdRequestForwarding=Form

[6] U.S. Department of Health & Human Services & Centers for Disease Control & Prevention, (2016), "Health, United States, 2016"
https://www.cdc.gov/nchs/data/hus/hus16.pdf

[7] Centers for Disease Control & Prevention: www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm

[8] Institute of Medicine 2012 report https://www.theatlantic.com/health/archive/2012/09/how-the-us-health-care-system-wastes-750-billion-annually/262106

[9] CMS Centers For Medicare & Medicaid Services, (2016), NHE Tables zip, Tables 4 & 5 spreadsheets https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html

[10] Here we took the percentage for 2012 from the report and applied it to 2017
Kahn, Kronick, Kreger, and Gans, 2012, "The Cost of Health Insurance Administration In California: Estimates For Insurers, Physicians, and Hospitals" http://content.healthaffairs.org/content/24/6/1629.full

[11] Potter, W., (2014) June 9th, 2014, "Skyrocketing salaries for health insurance CEOs" https://www.publicintegrity.org/2014/06/09/14912/skyrocketing-salaries-health-insurance-ceos

[12] Statistica, (2016) "Leading insurance brokers globally in 2015, by revenue"

https://www.statista.com/statistics/261909/leading-global-insurance-brokers-by-revenue-as-of-2012/

[13] Physicians For A National Health Program, (2013) May 10th, "Private Insurers Medicare Advantage plans cost Medicare extra $34.1 billion in 2012" http://www.pnhp.org/news/2013/may/Private-insurers-Medicare-Advantage-plans-cost-Medicare-an-extra-%2434.1-billion-in-2012

[14] Walsh, M., (2017) May 15th, "A Whistle-Blower Tells of Health Insurers Bilking Medicare", New York Times: https://www.nytimes.com/2017/05/15/business/dealbook/a-whistle-blower-tells-of-health-insurers-bilking-medicare.html

[15] Eisenbrey, R., (2007) September 19th, "Health insurance industry employment outpacing providers and all-industry growth rates", Economic Policy Institute http://www.epi.org/publication/webfeatures_snapshots_20070919/

[16] Anderson, J., (2016) October 26th, "Insurers Profits have nearly doubled since Obama was Elected", Hudson Institute https://www.hudson.org/research/12952-insurers-profits-have-nearly-doubled-since-obama-was-elected

[17] Bryant, M., (2016) Feb 5th, "Insurers sue HHS over Medicare Advantage overpayments final rule", Industry Dive: http://www.healthcaredive.com/news/insurers-sue-hhs-over-medicare-advantage-overpayments-final-rule/413374/

[18] Centers For Medicare & Medicaid Services, (2013) Feb 15th, "The 80/20 Rule: How Insurers Spend Your Health Insurance Premiums: https://www.cms.gov/CCIIO/Resources/Files/Downloads/mlr-report-02-15-2013.pdf

[19] The Commonwealth Fund, (2015), "Evaluating the Impact of Health Insurance Industry Consolidation" http://www.commonwealthfund.org/publications/issue-briefs/2015/nov/evaluating-insurance-industry-consolidation

[20] Williams Mullen, (2010), "DOJ Contends Health Insurers Use of Most Favored Nation Clauses is Anticompetitive" http://www.williamsmullen.com/news/doj-contends-health-insurers-use-most-favored-nation-clauses-anticompetitive

[21] Ubel, P., (2014) Feb 12th, "Is The Profit Motive Ruining American Healthcare", Forbes: https://www.forbes.com/sites/peterubel/2014/02/12/is-the-profit-motive-ruining-american-healthcare/#375e607037b9

[22] Politi, D., (2009), "Senate Democrats Threaten Repeal Of the Insurance Industry's Antitrust Exemption", The Slate Group http://www.slate.com/articles/news_and_politics/prescriptions/2009/10/busted_trust.html

[23] The Associated Press, (2016), "Obamacare Subsidies to jump $10 billion in 2017": http://www.cbsnews.com/news/obamacare-subsidies-to-jump-10-billion-in-2017/

Coombs, B., & Berk, C., (2017), "Paul Ryan needs to update his Obamacare facts as Medica opts to stay in Iowa": https://www.cnbc.com/2017/06/20/paul-ryan-needs-to-update-his-obamacare-facts-as-medica-opts-to-state-in-iowa.html

[24] United Healthcare (2017) "2017 Q1 Fact Book" https://www.uhc.com/content/dam/uhcdotcom/en/AboutUs/PDF/Q1-2017-Fact-Book.pdf

[25] Davis, K., Stremikis, K., Squires, D., (2014), "Mirror mirror on the wall"; Commonwealth Fund http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/jun/1755_davis_mirror_mirror_2014.pdf

[26] Davis, K., Stremikis, K., Squires, D., (2014), "Mirror mirror on the wall"; Commonwealth Fund http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/jun/1755_davis_mirror_mirror_2014.pdf

[27] Centers for Medicare & Medicaid Services, National Health Expenditures, NHE Tables, Tables 4 & 5 https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html

[28] Kahn, Kronick, Kreger, and Gans, (2012), "The Cost of Health Insurance Administration In California: Estimates For Insurers, Physicians, and Hospitals" http://content.healthaffairs.org/content/24/6/1629.full

[29] Kaiser Family Foundation (2017) http://www.kff.org/other/state-indicator/total-active-physicians/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[30] Page, L., (2017), "Doctors' Incomes Are on the Rise -- Is Yours? Medscape Physician Compensation Report 2017", Medscape: http://www.medscape.com/viewarticle/878129

[31] CMS Centers For Medicare & Medicaid Services, (2016), NHE Tables zip, Table 5 spreadsheet https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nationalhealthaccountshistorical.html

[32] Hussey, P., Wertheimer, S., Mehrotra, A. (2013), "The association between health care quality and cost: a systematic review", National Center for Biotechnology Information; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4863949/