



Blüpass is an Ethereum based token that enables multiple users to access our platform designed to better connect providers, carriers, and consumers. Our platform will put control in the consumers hands to facilitate data transfers between providers and carriers for electronic health records, claims service, policy and premium verification, and much more. We believe our blockchain technology supported with smart contracts will dramatically change the insurance and delivery of healthcare.



## **Abstract**

Blüpass will revolutionize access to data, healthcare, and the claims process for everyone. We began our experience by administering benefits in a unique way. Our billing reconciliation process, HRaspirin, eliminated headaches between HR professionals and carriers. We spent six years in this space developing strong relationships. As good as our product was, it only solved for one side of a broken equation. This prompted us to create Blüpass, a total solution. Blüpass will build a blockchain fabric to connect providers, consumers, and carriers. Historically, there are three major problems in the healthcare arena. First, healthcare providers must spend a significant portion of their time and revenue on billing, health records, and treatment modalities. The provider may not have a complete picture of the consumer's financial responsibility or health record. Second, carriers attempt to limit potential fraud through a lengthy and manual claims process. This process can take up to 6 months in the current environment to pay claims. Third, consumers are caught in this vortex of uncertainty between providers and carriers. This turbulence places unnecessary burdens on consumers in the form of expenses and treatment delays. Blüpass will build a multilayer blockchain to accommodate existing and new healthcare technologies. We will utilize our unique blockchain ledgers to deliver instant data for claims service while providing technical support to eliminate fraud for carriers. Finally, we will build a client centric mobile platform that enables consumers to control the timing and delivery of medical records and application of claims. Simply put, we believe consumers should have instant verification of their policy information and claims adjudication at the point of service. Additionally, a simplified financing system in the U.S. could result in cost savings exceeding \$350 billion annually, nearly 15% of health care spending. Imagine any other experience in which you buy a service and the provider can't tell you how much it's going to cost up front and you are expected to pay whatever bill they send you 6 months later. When you buy insurance against this uncertainty, the carrier demands to be paid on time without exception but can't offer claims service at time of service. Blüpass solves for these inconsistencies.



## Contents

<b>Abstract</b>	<b>1</b>
<b>Contents</b>	<b>2</b>
<b>Executive Summary</b>	<b>4</b>
<b>Overview of Healthcare Market</b>	<b>5</b>
Provider	5
Carrier	7
Consumer	7
<b>Discontinuity by Provider</b>	<b>8</b>
Hospitals	8
Physicians	8
Specialty	8
Payment Collection	9
<b>Discontinuity by Carrier</b>	<b>10</b>
Major Medical	10
Eligibility	10
Voluntary Benefits	10
Fraud	11
<b>Consumer Vulnerabilities</b>	<b>12</b>
Siloed Health Records	12
ZERO data integration	12
Insufficient Data on Treatment Options	12
Frustrating Claims Experience	13
Security Risk/Identity Theft	13
<b>Blockchain Solution</b>	<b>14</b>
Secure Ledger	14
Innovative Health Solutions	14
Physicians Health Groups (PHG)	14
Telemedicine	14
EMT services	16



Data Sharing	16
Fraud	17
Carrier	17
Consumer	17
HIPAA Compliance and Security	17
<b>How it all works</b>	<b>19</b>
Consumer	19
Carrier	19
Provider	20
Marketplace	20
<b>Blupass Platform</b>	<b>21</b>
Multiple Smart Contracts	21
Integration with Other Services	22
BLU Tokens	22
<b>Timeline</b>	<b>23</b>
<b>TEAM</b>	<b>24</b>
<b>Token</b>	<b>26</b>
Allocation	26
<b>Revenue</b>	<b>27</b>
Contracts with Carriers	27
Factoring claims to providers	27
Sales to Consumers	27
Processing Fees	28
Token Sales	28
<b>Appendix</b>	<b>29</b>



## **Executive Summary**

Unique to the ICO world is a real company with real products and solutions. Blüpass is a product born from innovation as we have solved reconciliation headaches for over six years. Blüpass will change everything that is deficient in the Healthcare industry and transform it into a consumer centric, egalitarian model. For many years, carriers and providers have worked tirelessly to reduce overhead due to fraud and problematic HIPAA Privacy and Security regulations in regards to billing and electronic medical records, all at the detriment to the consumer claim process and data ownership. By utilizing Blockchain technology to build our platform, we will transform the way data flows between each simultaneously. We will solve all three client components at once. Blüpass is a consumer driven platform that solves claims processing delays, provider overhead, and carrier claims fraud. Insurance claim inaccuracies alone costs patients and providers up to \$600-800 billion annually. Blüpass benefits from the existing payment structure, HRAspirin. Our payment reconciliation system allows for various groups, businesses, associations, unions, or individuals to establish traditional individual groups or group platform benefits and eliminate human resource administration of the benefits plan. We collect premiums, reconcile invoices automatically, monitor individuals for missed premiums, and consolidate multiple carrier invoices with our proprietary software. We will use Blüpass blockchain ledgers to verify premiums instantly against policy information to enable guarantees on claims. HRAspirin's success positions Blüpass with enormous options for positive growth from day one. Blüpass will enhance HRAspirin's client experience via instant verification of consumer premiums, policy provisions, and providers universal coding to enable settlement of specified provisions at the time of service.



## Overview of Healthcare Market

### Provider

Healthcare providers are often torn between the desire to serve their community and maintain the finances of a tormented business model. Administrative stresses and pressures force providers to compensate with ever rising price structures.

The United States' multiple-payer health care system requires substantial effort and costs for administration, with billing and insurance-related (BIR) activities comprising a large but incompletely characterized proportion. A number of studies have quantified BIR costs for specific health care sectors, using micro-costing techniques. However, variation in the types of payers, providers, and BIR activities across studies complicates estimation of system-wide costs. Using a consistent and comprehensive definition of BIR (including both public and private payers, all providers, and all types of BIR activities), we synthesized and updated available micro-costing evidence in order to estimate total and added BIR costs for the U.S. healthcare system in 2012. BIR costs in the U.S. healthcare system totaled approximately \$471 (\$330 – \$597) billion in 2012. This includes \$70 (\$54 – \$76) billion in physician practices, \$74 (\$58 – \$94) billion in hospitals, an estimated \$94 (\$47 – \$141) billion in settings providing other health services and supplies, \$198 (\$154 – \$233) billion in private insurers, and \$35 (\$17 – \$52) billion in public insurers. Compared to simplified financing, \$375 (\$254 – \$507) billion, or 80%, represents the added BIR costs of the current multi-payer system.

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4283267/>)

Administrative costs in the United States consumed an estimated \$156 billion in 2007, with projections to reach \$315 billion by 2018 (Collins et al., 2009). With the time, costs, and personnel necessary to process billing and insurance-related (BIR) activities from contracting to payment validation on the provider side and the needs of payers to process claims and credential providers, significant redundancy and inefficiency arises from healthcare administration. Adding to concerns is emerging evidence of an inverse relationship between administrative complexity and quality of care (Himmelstein and Woolhandler, 2002). The presenters in this session approach estimating excess administrative costs from a variety of macro- and microeconomic levels, all with the goal of identifying the portion of expenditures spent on administration that could be reduced by



increasing the efficiency of the delivery system, which highlights the need for administrative simplification and harmonization.

One of the biggest challenges for hospitals and medical providers today is the average number of days that outstanding invoices remain on their accounts receivable. The level of precision required to be paid in a timely manner nearly exceeds the level of precision required for effective and caring patient care. There are never enough hours in the day to fully devote to billing and collection follow up when patient care is the first priority.

As a solution to this problem, many providers have found that outsourcing some or all of their revenue cycle processes gives them more time to focus on patient care. Outsourcing can help the business to shift its focus from peripheral activities toward work that services the customer and it can help managers set their priorities more clearly. Early out companies act as an extension of the provider's business office and manage the processes behind the scenes.

<http://www.hosrec.org/earlier-patient-billing-diffuses-patient-frustration>

The **AMA's Health Insurer Report Card** found that health insurance companies are averaging a 19.3 percent error rate, up two percent from the previous year. The AMA estimates this increase in inaccurate claim payments will cost the healthcare industry an additional **\$1.5 billion in needless administrative expenses** this year alone.

"A **20 percent error rate among health insurers** represents an intolerable level of inefficiency that **wastes an estimated \$17 billion annually**," according to a statement from AMA Board Member Barbara L. McAneny, M.D.

<http://www.carecloud.com/continuum/health-insurance-claim-errors-waste-17-billion-annually/>



## Carrier

Fraudulent healthcare claims increase the burden to society through increased premiums and higher out of pocket expenditures. Therefore healthcare fraud detection is now becoming more and more important. Unfortunately, healthcare fraud is not obvious and thus difficult to detect because current detection techniques include carrier data mining tools based on large sets of claims data versus Point of Sale systems. However, through our platform, the following examples of healthcare fraud could be instantaneously eliminated:

- Providers billing for services not provided.
- Providers administering (more) tests and treatments or providing equipment that is not medically necessary.
- Providers administering more expensive tests and equipments (up-coding).
- Providers multiple-billing for services rendered.
- Providers unbundling or billing separately for laboratory tests performed together to get higher reimbursements.
- Providers charging more than peers for the same services.
- Policyholders traveling long distance for treatment which may be available nearby. (Possibly scams by bogus providers).
- Applicants not revealing health issues during underwriting.
- Policyholders letting others use their healthcare cards.

(<https://www.roselladb.com/healthcare-fraud-detection.htm>)

## Consumer

Patients enter provider facilities with a misconception that their provider and their carrier communicate seamlessly in order to provide patients with a smooth streamlined experience. When checking out patients are faced with the reality their experience is far from complete. They will often pay a copay at the window and leave certain of one reality, an incomprehensible bill will arrive in the mail.

Patients and physicians end up covering the cost of the error-prone insurance companies.

Physicians were not paid on almost 23 percent of the claims they submitted to commercial health insurers, with the most common reason for not issuing payments being due to deductible requirements that shift payment responsibility to patients.

<http://www.carecloud.com/continuum/health-insurance-claim-errors-waste-17-billion-annually/>



## **Discontinuity by Provider**

### Hospitals

Large Medical facilities and hospital groups spend up to 10% of their budgets on records and billing. Hospitals often fragment billing through multiple layers of doctors groups and specialty services with their own billing and records departments. Fragmented health records and billing frustrates consumers and leaves them vulnerable to malpractice. It also creates inefficiencies within the hospital. All this can be addressed through our technology multilayer of blockchain ledgers. Hospitals are working to reduce fatalities and unnecessary injuries due to inconsistent patient data and treatment logs. Blüpass will partner with EHR systems and develop bridges to ensure patients and consumers enjoy integrity through integration.

### Physicians

Typically local physicians spend up to 30% of their budget on billing and records departments designed to manage patient documentation and carrier billing. Medical practices experienced an increase in administration due to national healthcare legislation. Extra requirements coupled with a siloed paper records system hinders patients' ability to understand or control the outcome of their medical costs. Consumers are trapped in a maelstrom between provider and carrier billing administration that often results in complex invoices due months and years later. Some doctors groups have banded together to offer physicians' health groups (PHG) to further consolidate billing and eliminate carriers altogether by charging direct subscription fees. This is a clunky bandaid to a broken system.

### Specialty

Specialty services are those third party services where providers focus on a particular field of study outside of general practice. These services are not limited to but include; MRIs, PET Scans, Colonoscopies, Dermatology, Chiropractic care, etc. Special services require multiple layers of approval for access as well as special pricing structures specifically due to the insurance architecture. Telemedicine and Clinician referrals can eliminate redundant doctors visits through a Blüpass ledger. Our technology multilayer of blockchain ledgers will allow consumers access to specialty needs without the burdensome and costly system in place today.



## Payment Collection

HRaspirin currently solves for consumer premium collection, consolidation, reconciliation, and remittance. Our unique platform retains the experience of payroll deducted premiums without the headache to businesses and human resource departments. We have already achieved milestones in policy persistency unseen before by carriers resulting in several private label negotiations on HRaspirin's software. This existing technology will be enhanced through Blüpass's blockchain ledgers to provide needed instant verification of universal billing codes to the policy provisions provided in policies held by consumers. Blüpass will enable carriers to transfer specific policy claim provision adjudication to Blüpass for instant pay. Providers using Blüpass will access instant billing utilizing EHR and our marketplace.

According to a MGMA—Medical Group Management Association **report**, physicians will send an average of 3.3 billing statements before a patient's outstanding balance is paid in full. The trickiest conversation a practice has is that of collecting patient balances.

The delay may have multiple causes, such as:

- Practices' reluctance to talk to patients about money

- Physicians' refusal to enforce payment policies with longtime patients or those who are going through financial hardships

- Ineffective patient collection policies, possibly because they're focused on payer Outdated billing and payment systems

<https://www.practicesuite.com/practicemanagement/physician-news-the-fine-line-between-recruitment-and-retention-0/>



## **Discontinuity by Carrier**

### Major Medical

Premiums billed and administered by health insurance carriers rely on antiquated file formats. Business and group insurance are subject to heavy advance billing cycles that require eligibility standards to be updated on a monthly basis. This administrative function often falls on business human resource offices.

### Eligibility

Health insurance eligibility requirements often fall on continuous updates by employers through arduous billing files. HRAspirin's technology relieved human resource offices from monthly eligibility updates to carriers. Blüpass dramatically enhances HRAspirin's reporting system with access to EHRs. Each consumer permits Blüpass to maintain eligibility files which are then incorporated into our ledger to carriers. Carriers using Blüpass have access to eligibility data in real time.

### Voluntary Benefits

The advent of health care reform legislation focused consumers and businesses on expanded benefits offerings through voluntary carriers. Voluntary insurance is often paid 100% by an employee. Functionally, human resources officers are required to manage fragmented invoicing incentivising reduced benefit offerings. Lacking options, employees are faced with participating in subpar benefits packages or leaving their families unprotected.



## Fraud

Carriers are often plagued with concerns over consumer driven fraud. Specifically, fraudulent claims are created by false documentation and/or incomplete or undisclosed health records. False claims factor into everything from premium calculation to underwriting offers. The lack of a secured ledger, secure electronic health records, and identity verification can impact consumer access to needed insurance. Currently, carriers must spend significant time and resources simply verifying documentation to adjudicate claims. Sadly, proactive claims departments are punished with increased incidents of fraudulent claims. A decentralized confirmation of consumer identification coupled with point of sale designed to securely transmit consumer health data instantly to carriers will significantly diminish the impact of fraud in the healthcare insurance industry.

Scams against government and private healthcare insurers form by far the largest type of insurance fraud. The exact size of annual theft is unknown, and is the subject of considerable debate. Healthcare fraud likely steals tens of billions of dollars a year.

U.S. Department of Justice, December 2017)



## Consumer Vulnerabilities

### Siloed Health Records

- Currently, there is a lack of transparency between all actors involved.
- Patients have no immediate access to health records created by medical professionals.
- Medical professionals are only able to share data quickly within their own organization or with other health professionals using the same EHR system.
- Insurance companies are kept in the dark, unless they request patient data which is required for a claim. This process relies on paper filing systems inherently diluted by lack of sharing between clinicians.
- Researchers who could benefit society are forced to seek anonymized data from multiple intermediaries, which is both costly and timely.
- The lack of transparency on how patient data is handled also leaves the consumer unaware of how their data is currently being used.

### ZERO data integration

- Unfortunately for the consumer, as stated above, patient data such as health records, consumer policy data, and claims data are siloed. Providers marginally share data with other providers. Carrier and Providers do not share data systematically leaving consumers to manually request information from file departments from various providers to facilitate any claim process review. The health care market is decades behind other sectors in regards to data integration.

### Insufficient Data on Treatment Options

- Most patients rely on their physician to present treatment options and make decisions for care.
- By having access to current clinical data on efficacy and cost, the patient can balance their outcome with respect to the value a procedure or treatment provides.
- This additional information empowers the consumer to be a good steward of their health and finances.



## Frustrating Claims Experience

- Patient has no real understanding of their financial responsibility as point of service.
- Provider bills may come 60-90 days after service with no preset payment arrangements. Consumers rely on a complex coding system they hope will relate to the policy they purchased. Challenging a suspect invoice takes too much time and forces consumers to decipher a hopelessly confusing billing system.
- EOMB's (Explanation of Medical Benefits) are confusing and rely on human data entry which can lead to errors and declined benefits.
- Undisclosed medical history may lead to policy rescission by the carrier.
- Patients may have no understanding of in and out-of-network providers and fees.

## Security Risk/Identity Theft

- Identity thieves are targeting Healthcare resources to pose as an insured policyholder to obtain expensive treatments.
- Once fraudulent treatments have been obtained it can taint an individual's health record with inaccurate data.
- Inaccurate data can mean insurance carriers may charge more for their policies. Even worse, that data could be interpreted by an unknowing physician and lead to a fatal decision for the actual patient.
- The patient could be presented with fraudulent bills and be subjected to collection efforts.



## **Blockchain Solution**

### Secure Ledger

Blüpass will build an open source platform designed to solve these problems. We believe the best solutions are derived from multiple actors working in sync with a common goal. Electronic Health Records (EHR), EMRs, Telemedicine, and other out of the box solutions should be incorporated in a seamless program to elevate the customer experience; at the same time we alleviate provider concerns over billing and carrier concerns over fraud. Blockchain solutions will be provided through a combination of unique Blüpass products coupled with third party plug-ins.

### Innovative Health Solutions

#### 1. Physicians Health Groups (PHG)

Clinicians and providers working together to pool resources can eliminate costly billing overhead by joining Blüpass blockchain network. Subscriptions can be made via our network and claims will be facilitated instantly. Physicians Health Groups struggle with collecting subscriptions across their smaller networks and providing access to claims information necessary to assure consumers their value proposition outweighs the current PPO and HMO market. Blüpass will provide continuity across their organizations.

#### 2. Telemedicine

We believe telemedicine will have a growing impact on the way healthcare is delivered. There are several reasons for this observation. First, in recent years there has been an overutilization of hospital emergency rooms. The waiting rooms are jammed with patients seeking treatment for non-life threatening occurrences. These occurrences should have been handled by primary care physicians. However due to access and operating hours, typical patients may not have the means to choose between missing work or seeing their physician. Unfortunately, that choice means an increase in cost for their treatment. It becomes a paradox; the act of seeking care at an emergency room so they will not miss the income from their job becomes a costly mistake. By offering universal access to care through telemedicine, there is a paradigm shift in the consumer's behavior. They are granted easy access to care in a affordable



manner and emergency rooms can once again focus on patients with the greatest priority in triage. Another compelling and dramatically significant reason for the future of telemedicine is patients' exposure to infection and disease at healthcare facilities. According to the CDC nosocomial infections are one of the leading causes of death in the United States. A patient simply presenting themselves to a healthcare facility can lead to more serious infections. The CDC calls this an HAI (Healthcare-associated Infections). On any given day, about one in 25 hospitals has at least one HAI. We believe this number is much higher as the reported cases are only those a facility can accurately trace. Imagine contracting Clostridium difficile (C-diff), Methicillin-resistant Staphylococcus aureus (MRSA), Vancomycin-resistant Enterococcus (VRE), the Flu or Pneumonia from a hospital visit. The health and welfare implications for the patient are staggering. If the patient can be treated through telemedicine they limit their exposure to these types of infections dramatically.

There has been a spike in interest and use of telehealth, catalyzed recently by the anticipated implementation of the Affordable Care Act, which rewards efficiency in healthcare delivery. Advances in telehealth services are in many areas, including gap service coverage (eg, night-time radiology coverage), urgent services (eg, telestroke services and teleburn services), mandated services (eg, the delivery of health care services to prison inmates), and the proliferation of video-enabled multisite group chart rounds (eg, Extension for Community Healthcare Outcomes programs). Progress has been made in confronting traditional barriers to the proliferation of telehealth. Reimbursement by third-party payers has been addressed in 19 states that passed parity legislation to guarantee payment for telehealth services. Medicare lags behind Medicaid, in some states, in reimbursement. Interstate medical licensure rules remain problematic. Mobile health is currently undergoing explosive growth and could be a disruptive innovation that will change the face of healthcare in the future.

Telemedicine, Telehealth, and Mobile Health Applications That Work: Opportunities and Barriers; Weinstein, Ronald S. et al. The American Journal of Medicine , Volume 127 , Issue 3 , 183 - 187

Blüpass will give access on our platform to all forms of telemedicine to facilitate the rising demand and coordinate consumer participation. Our Blüpass Marketplace will enable community sharing of ideas and apps that meet demand and the blockchain security required. Whether consumers access a



provider face to face, phone, or video conference through their TV or other mobile devices.

### 3. EMT services

The Blüpass wallet gives consumers secure access to their EHR in case of emergencies. Consumers who are able to access their wallet can simply log in using biometric coding. EMT professionals will then have the capability to receive their secure EHR through our normal system. Blüpass will provide an option within the wallet to print a unique barcode with hash to be read by corresponding EMT professionals. Consumers can print their barcode to be kept much like proof of car insurance is kept available today. Security will rely on our systems geofencing and limited access to EMT systems that read a consumer's EHR. Blüpass wants to balance the need for consumer privacy and security with their need to provide important information during an emergency.

This is one life saving feature of blockchain technology. Many times patients either can't remember all their health information or are unable to communicate that information to the Paramedic providing care. Unfortunately, there are many drug interactions that may have severe consequences if not fully disclosed to Emergency Service providers. Lack of health data may also lead the attending Healthcare professional down a path of incorrect treatment or misdiagnosis. Immediate access to a patient's EHR will save lives and greatly increase survival rates. Emergency services will also be able to contribute to the EHR in real time to assist Physicians in their diagnostic endeavor. With blockchain technology we will make EHR accessible by every Emergency Responder. Blüpass will provide a marketplace for coordinating products, wearables, and other systems to sync.

### 4. Data Sharing

While medical journals, the Internet, and the popular press are awash in health information and studies, professionals and patients find there is no broad standard for evaluating individual treatments, or how specific treatments compare with others. Even when evidence shows a treatment isn't effective, or is potentially harmful, it can take a long time for that information to actually change how doctors practice or what patients demand, the report says. Additionally, Americans vary widely in how they view end-of- life issues, with some desiring every possible medical intervention to stave off death in every situation, no matter how small the possibility of success.

(<https://www.pbs.org/newshour/health/seven-factors-driving-your-health-care-costs>)



Blüpass will build a platform to integrate data mining to produce reports consumers and carriers can use to make informed decisions.

- (1) Most cost effective treatments with best overall outcomes
- (2) Grading of providers' mortality rates
- (3) Decrease Medical Errors
- (4) Lower Malpractice Costs
- (5) Complete picture of patient's status
- (6) Collaborative environment for multiple treating physicians
- (7) Collaborative environment for patient, carrier and provider

## Fraud

### 5. Carrier

Blüpass's Blockchain ledgers use a complex system of checks on EHRs to ensure patient files are accurate and derived from providers. Simply put, any change or variation to a patient file will render the EHR out of sync with the protocol. Consumers will submit their claim via our unique HIPAA compliant Portable Benefits Utility within our app structure. The submission will ensure that the EHR came from a verified provider. We will have the capabilities to geofence point of sale technology where appropriate. In addition, during the application process the carrier will not have to rely on the consumer's statements regarding their health history. Rather, the EHR is transmitted and the underwriting offer is made accordingly.

### 6. Consumer

Consumers will benefit from reduced premiums and incentives. Using hyper secure technology reduces loss due to fraud. Carrier savings can be passed on to consumers in the form of premium reduction due to efficient cost saving measures. Consumers will also have peace of mind their EHR is safe from tampering or identity theft.

## HIPAA Compliance and Security

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) required the Secretary of the U.S. Department of Health and Human Services (HHS) to develop regulations protecting the



privacy and security of certain health information.<sup>1</sup> To fulfill this requirement, HHS published what are commonly known as the HIPAA Privacy Rule and the HIPAA Security Rule. The Privacy Rule, or *Standards for Privacy of Individually Identifiable Health Information*, establishes national standards for the protection of certain health information. The *Security Standards for the Protection of Electronic Protected Health Information* (the Security Rule) establish a national set of security standards for protecting certain health information that is held or transferred in electronic form. The Security Rule operationalizes the protections contained in the Privacy Rule by addressing the technical and non-technical safeguards that organizations called “covered entities” must put in place to secure individuals’ “electronic protected health information” (e-PHI). Within HHS, the Office for Civil Rights (OCR) has responsibility for enforcing the Privacy and Security Rules with voluntary compliance activities and civil money penalties.

Today, providers are using clinical applications such as computerized physician order entry (CPOE) systems, electronic health records (EHR), and radiology, pharmacy, and laboratory systems. Health plans are providing access to claims and care management, as well as member self-service applications. While this means that the medical workforce can be more mobile and efficient (i.e., physicians can check patient records and test results from wherever they are), the rise in the adoption rate of these technologies increases the potential security risks.

A major goal of the Security Rule is to protect the privacy of individuals’ health information while allowing covered entities to adopt new technologies to improve the quality and efficiency of patient care. Given that the healthcare marketplace is diverse, the Security Rule is designed to be flexible and scalable so a covered entity can implement policies, procedures, and technologies that are appropriate for the entity’s particular size, organizational structure, and risks to consumers’ e-PHI.

Within our Blüpass wallet, the consumer will own and control the data flow and release of all electronic health records, provider, and carrier coverage data. This security and data ownership by the consumer is a foundation by which Blüpass is built.



## How it all works

### Consumer

A patient goes to their Primary Care Physicians' office for routine tests. When they check in their code is scanned, instantly all of their medical records are available for the physician. The exam is completed and the patient instantly understands the treatment options and outcomes by cost. Upon checking out, the treatment codes are instantly reconciled against the patient's policy information. There are no surprise bills from the Doctor's office. Everything is adjudicated at point of service. If the patient has a supplemental insurance policy, the PBUs (Portable Benefit Utility) are instantly paid. We coined the term "Accelerated Health Benefits" to describe PBUs. This eliminates out of pocket costs for the patient. If there is a remainder amount beyond the cost incurred, that amount is credited to the patient. In summary because of Blockchain technology, both the patient and physician have instant access to their medical records, there is a clear understanding of treatment cost and outcome, claims are instantly adjudicated and the patient has real control of their Healthcare. This will cause a tremendous increase in overall consumer satisfaction!

### Carrier

Every carrier will load their policy data and coverage information. Inside each policy there will be specific items that are identified as PBU's (Portable Benefit Utility). These items are instantly payable as benefits to providers and/or consumers according to the diagnostic code. We have named this an "Accelerated Health Benefit" for voluntary benefits. At point of service, the patient's code is scanned and immediately adjudicated against in-force policy status and available benefits. Previously, claims administrators inside insurance carriers potentially made errors due to a multitude of policies provisions. Their unfamiliarity with all policies may mean benefits are denied or paid incorrectly. Because of Blockchain technology, the claims are instantly reconciled by each policy's diagnostic code algorithm. This allows a carrier to decrease errors, decrease claims staffing costs, and increase consumer satisfaction. Furthermore, fraud is dramatically reduced because of the inherent security provided by the Blockchain. A patient must scan their code and must be within the Geofence of the provider. The patient's identity is verified and the provider can instantly access their coverage information. The carrier's claims exposure is also reduced due to the presentation of actual treatment outcomes based on cost to the consumer. Therefore the informed and educated consumer will choose a treatment option that boosts their chance of recovery, not necessarily the most expensive option.



## Provider

There are several ways providers benefit from Blockchain. First, identity verification means that identity thieves cannot pose as a real patient to receive treatment. Additionally, the provider will have a complete view of a patient's health record. Now the cardiologist, pulmonologist, primary care physician, etc. all have the same information. This allows them to collaborate on the patient's behalf for more favorable recovery outcomes. From the billing aspect, the provider will know the exact amount of the patient's financial responsibility. This means that rather than waiting 90 days to receive adjudication and payment from the carrier, they have real time payment. If the policyholder has a voluntary plan in addition to Major Medical, the payment can be directed to the provider via the PBU (Portable Benefit Utility). If there is coinsurance or a co-pay due, it can be collected at point of service. This dramatically reduces the wait time for the provider to collect funds. Our view is that the provider can reduce billing staff and save money. Additionally, Blüpass can facilitate the payment of claims to the provider for a small factoring fee. The provider realizes instant funds rather than the current 90-120 day process.

## Marketplace

Blüpass believes an all inclusive platform designed to incorporate unique ideas and solutions serves our consumers best. We will seek to launch our marketplace at the same time our unique wallet is released. Blüpass will actively seek partners and competitors to coordinate efforts. We will host summits and research to incubate up to date unrealized solutions. Healthy competition is important to solving comprehensive health care and support. Unhealthy competition that bars access to networks or solutions does not serve the community. We believe in a positive sum environment whereby working together we can achieve amazing solutions to a significant question; how do we provide health care and access to everyone while diminishing the cost and administrative burden to everyone.

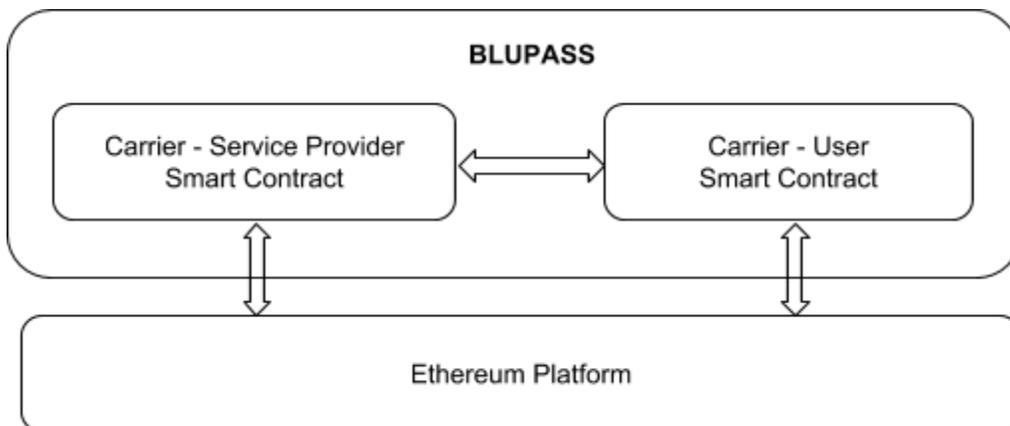


## Blupass Platform

### Multiple Smart Contracts

Every year, Service providers and carriers get into contracts where they agree on the procedures, procedure codes, cost, type of services, claims processes, and bill-pay. These contracts govern the healthcare services that are provided to the consumers. Blüpass uses blockchain technology to create new smart contracts between carriers and service providers.

There is another contract that governs the health services for the users. It is the contract between users and the carriers for the type of service that users are willing to get. Once a user and the carrier get into a contract (Insurance contract), Blüpass creates a Smart Contract for them. This contract is much like the regular contract between the user and carriers, except that it uses Blockchain technology (and is a smart contract).

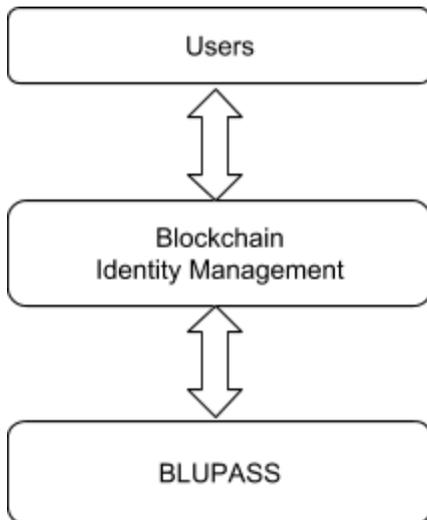


Blüpass uses Ethereum platform to generate these two types of smart contracts. Blüpass is creating a unique protocol that governs the interaction among multiple Smart Contracts.



## Integration with Other Services

One of the important factors in providing secure and instant claims is to eliminate the risk associated with fraud. Identity obfuscating or impersonating different identities is a major cause of concern in traditional fraud management techniques adopted in the industry.



Blupass plans to integrate with 3rd party Identity Management Services that use Blockchain to manage Identity of users. We plan to have partnerships to provide Identity Management Services at point-of-sale in Service provider's offices. These partners would verify the identity of users and then push forward the instant claim processing to Blupass.

Blupass also plans to integrate with 3rd party Medical Records Management Services that use Blockchains to manage Health records. There are quite a few service providers that are developing services for Medical Records. Blupass will use these services to get information about the services provided by service-providers (hospitals, physicians) to the users. It will then use its unique protocol to provide instant claims to the service-providers (hospitals, physicians).

## BLU Tokens

Blupass uses BLU tokens in its digital ledger. Accounts for Carriers, Service providers, and users are maintained in BLU tokens in distributed ledgers. In order to provide efficient transactions (with zero overhead), and to have zero fraud in claims processing, Blupass recommends using BLU tokens. These are specialized ERC20 tokens which are used for transactions when triggers are fired in executing Smart Contracts. We realize that in order to provide services to masses, Blupass has to provide support for fiat currency in its protocol. BLU tokens can be converted into fiat currency, if required.



Blüpass will handle seamless conversion from fiat currency to BLU tokens and vice-versa.

## Timeline

2018

Q3

Finalize team placement

Revamp HRAspirin to include in-app partitions for PBU qualified reimbursements.

Q4

Release Consumer app including Bluwallet for HIPPA secure data transfers

2019

Q1

Announce carrier private label division

Release POS system for 1.0 for clinicians

Announce first participating carrier

Q2

Field distribution team for POS system

Launch in-app sales for PBU qualified benefits

Q3

Release POS system 2.0 including Telemedicine app integration

Q4

Launch BluMarket for coordinating products on our platform



## TEAM

Blüpass consists of team members across multiple essential backgrounds. Our vision requires collaboration between sectors from provider, consumers, technology, carriers and insurance specialists. We have deliberately sought forward thinking out of the box professionals that are successful in their fields and are keenly interested in change.

Shawn Stephens

Chief Executive - Founder

Shawn has 20 years experience with government policy development and Insurance.

George Washington University

MPA Policy Analysis

Ray Keech, CLF® - Founder

Chief of Operations

Ray has 28 years of experience in both the Healthcare and Insurance fields.

Arkansas State University

Army National Guard Veteran

Mark D. Luther - Founder

Chief Marketing Strategist

Mark has 12 years of experience in the Insurance field with two Fortune 500 carriers

Sam M. Walton College of Business- University of Arkansas

US Army Veteran

Sandeep Chauhan

Chief Technology Strategist

Sandeep was chief architect for numerous blockchain platforms including Docademic.

Jason Head

Chief Legal Counsel

Jason has a 17-year professional career as primary general counsel. Proven record of excellence in business development, financial knowledge and skills including competitive strategic analysis, technology integration and transactional law with major corporations.

Regent University, School of Law



Myles Stephens

Marketing

Myles has experience marketing for multiple national projects.

Benjamin Hansen

Software Development HRaspirin

Ryan Curtis

Advisor

Clinical Perfusionist

Michael E DeBakey VA Medical Center



## Token

Blüpass tokens (BLU) will be allocated according to the following;

Blüpass will create 6 billion (BLU) tokens. Tokens are available for purchase through our ICO and on exchanges at market value. Consumers outside of our preferred carrier network will purchase (BLU) tokens to access our system. Blüpass will field an easy to access exchange exclusive to BLU tokens within our wallet for consumers to access the system.

### Allocation

Blüpass will release 4 Billion tokens in the ICO at price of 2 cents. This represents all outstanding tokens except those allocated to founders, advisors, and employees.

Blüpass seeks to raise \$40,000,000. Any tokens not issued during ICO will be retained by company for future development. Any future release of tokens is subject to same restriction to sales as the founders plan defined below.

ETH will be escrowed until Token delivery is verified via smart contract.

All founders, employees, and advisers are vested as follows:

10% vested immediately

20% vested after 6 months based on milestone

20% vested after 12 months based on milestone

50% vested after 24 months based on milestone

After initial 10% vesting, additional vesting will accrue as timeline goals are met.

All team members including founders, advisors, and employees will sign vesting agreements.

Founders and company (not including advisors and employees) will be restricted according to the following:

Regardless of vesting or timelines, founders and company will be restricted from sale of tokens exceeding 10% of the existing market volume. This plan represents the most restrictive sale of founders' tokens by any ICO we researched.



## Revenue

Blüpass has four main sources of revenue; contracts with carriers for tokens and private label services, factoring claims to providers, insurance sales to consumers, and processing fees for premiums.

### Contracts with Carriers

Blüpass will develop contracts with carriers in order to guarantee against fraudulent claims. Simply put, we will post reserves to offset carrier concerns of fraud. Claims assurity enables carriers to confidently participate in Blüpass instant claims service to consumers and providers. Blüpass will transfer funds for claims and be reimbursed according to carrier contracts. Blüpass will provide a point of sale system through our mobile platform to facilitate EHR authentication and service provided. A voucher for claim will be authenticated and funds transferred within seconds of consumer submission. Carriers will pay Blüpass on a contractual basis based on expected token usage. Carriers contracts will be renewed with market price of our reserve of 2 Billion tokens. Policyholders can buy tokens for access through our bluwallet, or carriers will provide them.

### Factoring claims to providers

Blüpass will front claims funds to providers who use our POS. We will eliminate the lag time for providers in the billing process. Hyper secure ledgers will authenticate EHRs and billing codes with geofencing technology to guard against fraud. Providers will enjoy immediate access to funds while having access to a broad base of consumers who use insurance rather than cash on demand services. Factoring billing for providers will range from 2-3 percent of billed amount placing Blüpass costs in the same range as credit card usage fees providers are accustomed to as payment. Claims payments to providers are a \$3 Trillion market in the US.

### Sales to Consumers

Blüpass will offer competitive rate plans to consumers to purchase through our system. Businesses and HR professionals are seeking consumer direct sales and consumerism approaches to cost sharing. By incorporating Blüpass into their benefits packages, business will be able to reduce overhead cost and expand benefit offerings. Likewise consumers can purchase direct plans through our system and enjoy discounts similar to on-the-job benefits because our existing HRAspirin system already provides assurances to carriers for discounts. Blüpass will integrate our existing premium reconciliation



services with carrier and provider networks to further drive down cost through efficiency.

### Processing Fees

HRaspirin currently serves as a billing reconciliation, carrier consolidation, and remittance system. The program provides badly needed relief and efficiency to business owners, HR professionals, and carriers through a unique and proven method of securely collecting premium, consolidating multiple carrier invoices, and remitting premium on a regular set calendar. We have opened markets previously not available to certain groups such as unions and associations. The main source of revenue is derived from banking fees on billing transactions. These are often paid by the consumer, but can be paid by employer or carriers. Blupass enables HRaspirin to eliminate fees altogether. Members and token holders have access to an ecosystem designed to change the status quo.



## Appendix

### Cost of Healthcare in United States

#### Projections of the Cost of Cancer Care in the United States: 2010–2020

##### Results

Assuming constant incidence, survival, and cost, we projected 13.8 and 18.1 million cancer survivors in 2010 and 2020, respectively, with associated costs of cancer care of 124.57 and 157.77 billion 2010 US dollars. This 27% increase in medical costs reflects US population changes only. The largest increases were in the continuing phase of care for prostate cancer (42%) and female breast cancer (32%). Projections of current trends in incidence (declining) and survival (increasing) had small effects on 2020 estimates. However, if costs of care increase annually by 2% in the initial and last year of life phases of care, the total cost in 2020 is projected to be \$173 billion, which represents a 39% increase from 2010.

##### Conclusions

The national cost of cancer care is substantial and expected to increase because of population changes alone. Our findings have implications for policy makers in planning and allocation of resources.

JNCI: Journal of the National Cancer Institute, Volume 103, Issue 2, 19 January 2011, Pages 117–128, <https://doi.org/10.1093/jnci/djq495>

#### National Health Expenditures 2016 Highlights

##### Abstract

U.S. health care spending increased 4.3 percent to reach \$3.3 trillion, or \$10,348 per person in 2016. Health care spending growth decelerated in 2016 after the initial impacts of ACA coverage expansions and strong retail prescription drug spending growth in 2014 and 2015. The overall share of gross domestic product (GDP) related to health care spending was 17.9 percent in 2016, up from 17.7 percent in 2015.

“National Health Accounts Historical.” CMS.gov Centers for Medicare & Medicaid Services, 8 Jan. 2018,

[www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html](http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html).

#### 2016-2025 Projections of National Health Expenditures Data Released

##### Abstract



National health expenditure growth is expected to average 5.6 percent annually over 2016-2025, according to a report published today as a 'Web First' by Health Affairs and authored by the Centers for Medicare & Medicaid Services' (CMS) Office of the Actuary (OACT). These projections are constructed using a current-law framework and do not assume potential legislative changes over the projection period.

National health spending growth is projected to outpace projected growth in Gross Domestic Product (GDP) by 1.2 percentage points. As a result, the report also projects the health share of GDP to rise from 17.8 percent in 2015 to 19.9 percent by 2025. Growth in national health expenditures over this period is largely influenced by projected faster growth in medical prices compared to recent historically low growth. This faster expected growth in prices is projected to be partially offset by slowing growth in the use and intensity of medical goods and services. According to the report, for 2016, total health spending is projected to have reached nearly \$3.4 trillion, a 4.8-percent increase from 2015. The report also found that by 2025, federal, state and local governments are projected to finance 47 percent of national health spending, a slight increase from 46 percent in 2015.

"After an anticipated slowdown in health spending growth for 2016, we expect health spending growth to gradually increase as a result of faster projected growth in medical prices that is only partially offset by slower projected growth in the use and intensity of medical goods and services," says Sean Keehan, the study's first author. "Irrespective of any changes in law, it is expected that because of continued cost pressures associated with paying for health care, employers, insurers, and other payers will continue to pursue strategies that seek to effectively manage the use and cost of health care goods and services."

"2017-02-15-2." CMS.gov Centers for Medicare & Medicaid Services, 15 Feb. 2017, [www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-02-15-2.html](http://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-02-15-2.html).

National Health Expenditure Projections, 2016–25: Price Increases, Aging Push Sector To 20 Percent Of Economy

ABSTRACT

Under current law, national health expenditures are projected to grow at an average annual rate of 5.6 percent for 2016–25 and represent 19.9 percent of gross domestic product by 2025. For 2016, national health expenditure growth is anticipated to have slowed 1.1 percentage points to 4.8 percent, as a result of slower Medicaid and prescription drug spending growth. For the rest of the projection period, faster projected growth in medical prices is partly offset by slower projected growth in the use and intensity of medical goods and services, relative to that observed in 2014–16 associated with the Affordable Care Act coverage expansions. The insured share of the population is projected to increase from 90.9 percent in 2015 to 91.5 percent by 2025.



### Defining the needs of a telemedicine service

#### Abstract

While telemedicine programme objectives, technologies and even philosophies will differ, certain common factors that enhance programme success can be identified. For example, a programme design which is driven by technological imperatives is likely to fail. It must also be recognized that telemedicine programmes cannot force remote sites to use their services. Thus developers must assess the needs for the proposed telemedicine service from a clinical, economic and technical perspective. From a clinical perspective, it is important to remember that certain clinical services can be provided via telemedicine while others cannot. Programme developers must recognize the significant role of the remote team in sustaining services; the on-site presenter is essential for the successful practice of telemedicine. Evaluating a telemedicine programme should be viewed as an integral step in its design and implementation. One site may define effectiveness in terms of access to services while another may measure success by cost savings. The success of future telemedicine programmes will be strongly related to their ability to recognize that they should be used to enhance current health-care delivery rather than to replace it.

Doolittle, G C, and R J Spaulding. "Defining the needs of a telemedicine service." *Journal of telemedicine and telecare.*, U.S. National Library of Medicine, 6 Dec. 2006, [www.ncbi.nlm.nih.gov/pubmed/17022834](http://www.ncbi.nlm.nih.gov/pubmed/17022834).

### Impact of using telemedicine on knowledge management in healthcare organizations: A case study

#### Intro

Telemedicine transfers healthcare via telecommunication and information technology infrastructure to patients in distant areas from hospitals or clinical centers. Telemedicine is advocated for its potential to improve accessibility and availability of healthcare with lower costs (Charles, 2000). One point that might be important in this case is that the healthcare organizations are knowledge oriented organizations and most of the services that provided by these organizations, are operated by the human knowledge. In this paper, it was illustrated that information technology helps in knowledge management, and also in medical sciences to manage inter-disciplines such as telemedicine and telehealth. In these technologies, healthcare services are delivered by specialists in a situation where the location is the key factor; by using information technology and communication, they can gather some information about a patient's diagnosis by specialists. This way, knowledge sharing occurs from sub-specialist to specialist, specialist to medical doctor, nurse and technician. The view presented in this paper is important because the knowledge can promote organizational properties and the organization's capital in cases where telemedical projects are not considered sufficiently. Information technology fosters collaborations among multiple specialists in several locations via telecommunication, and also provides foundations for organizational learning and knowledge sharing. This is a response to the needs of the healthcare industry. This paper is therefore



intended to present a framework for healthcare organizations where considering knowledge extraction and recording new technologies such as telemedicine is possible. To support this suggestion, emphasis on literature review in several disciplines is necessary, because this technology is an interdisciplinary issue.

African Journal of Business Management Vol.6 (4), pp. 1604-1613, 1 February, 2012

User Satisfaction with Asynchronous Telemedicine: A User Satisfaction with Asynchronous Telemedicine: A Study of Users of Santa Catarina's System of Telemedicine and Telehealth  
Abstract

User satisfaction analyses in synchronous telemedicine and teleconsultation environments have been widely performed and generally show satisfied users. In the field of asynchronous telemedicine, however, satisfaction studies were performed only in one single location or with a restricted set of users. With the aim of offering an exemplar evaluation of the impact of the statewide use of a large-scale asynchronous telemedicine network on the satisfaction of the involved users, this study presents the results obtained from a survey of the perceived quality of the service by both patients and healthcare staff. For this purpose, a survey with satisfaction questionnaires was performed with 564 patients from seven upstate municipalities and 56 healthcare professionals from 46 municipalities, using a methodology from the process improvement field. The collected data were quantified and underwent statistical analysis, which showed a clear perception of the improvement in the quality of service by both patients and healthcare professionals. The present findings also showed that both patients and healthcare professionals felt that introducing these new technologies was a positive step, even in upstate areas and when they involved great changes in the usual processes of primary care.

Aldo von Wangenheim, Luiz Felipe de Souza Nobre, Heitor Tognoli, Silvia Modesto Nassar, and Kendall Ho. *Telemedicine and e-Health*. June 2012, 18(5): 339-346.

<https://doi.org/10.1089/tmj.2011.0197>

Telemedicine, Telehealth, and Mobile Health Applications That Work: Opportunities and Barriers  
Abstract

There has been a spike in interest and use of telehealth, catalyzed recently by the anticipated implementation of the Affordable Care Act, which rewards efficiency in healthcare delivery. Advances in telehealth services are in many areas, including gap service coverage (eg, night-time radiology coverage), urgent services (eg, telestroke services and teleburn services), mandated services (eg, the delivery of health care services to prison inmates), and the proliferation of video-enabled multisite group chart rounds (eg, Extension for Community Healthcare Outcomes programs). Progress has been made in confronting traditional barriers to the proliferation of telehealth. Reimbursement by third-party payers has been addressed in 19 states that passed parity legislation to guarantee payment for telehealth services. Medicare



lags behind Medicaid, in some states, in reimbursement. Interstate medical licensure rules remain problematic. Mobile health is currently undergoing explosive growth and could be a disruptive innovation that will change the face of healthcare in the future.

Telemedicine, Telehealth, and Mobile Health Applications That Work: Opportunities and Barriers Weinstein, Ronald S. et al. *The American Journal of Medicine* , Volume 127 , Issue 3 , 183 - 187

#### The Ontario Telemedicine Network: A Case Report

##### Abstract

This article describes the evolution, current status, and future prospects of the Ontario Telemedicine Network (OTN). Started in the late 1990s (and formally established in 2006), OTN is a not-for-profit corporation primarily funded by the Government of Ontario, Canada, that aims to improve access to and quality of care throughout the Province. It covers a land mass larger than France and serves a population of just over 13 million, the vast majority of which live in a narrow strip close to the U.S. border. Telemedicine has been effective in reducing travel to usual sources of care, reducing hospital admissions, and improving efficiency and prompt access to care. The diffusion of telemedicine is accelerating in Ontario, and it is becoming an integral part of the health system.

Edward M. Brown. *Telemedicine and e-Health*. April 2013, 19(5): 373-376.  
<https://doi.org/10.1089/tmj.2012.0299>

#### Using Information and Communication Technology in Home Care for Communication between Patients, Family Members, and Healthcare Professionals: A Systematic Review

##### Abstract



Introduction. Information and communication technology (ICT) are becoming a natural part in healthcare both for delivering and giving accessibility to healthcare for people with chronic illness living at home. Aim. The aim was to review existing studies describing the use of ICT in home care for communication between patients, family members, and healthcare professionals. Methods. A review of studies was conducted that identified 1,276 studies. A selection process and quality appraisal were conducted, which finally resulted in 107 studies. Results. The general results offer an overview of characteristics of studies describing the use of ICT applications in home care and are summarized in areas including study approach, quality appraisal, publications data, terminology used for defining the technology, and disease diagnosis. The specific results describe how communication with ICT was performed in home care and the benefits and drawbacks with the use of ICT. Results were predominated by positive responses in the use of ICT. Conclusion. The use of ICT applications in home care is an expanding research area, with a variety of ICT tools used that could increase accessibility to home care. Using ICT can lead to people living with chronic illnesses gaining control of their illness that promotes self-care.

Birgitta Lindberg, Carina Nilsson, Daniel Zotterman, Siv Söderberg, and Lisa Skär, "Using Information and Communication Technology in Home Care for Communication between Patients, Family Members, and Healthcare Professionals: A Systematic Review," *International Journal of Telemedicine and Applications*, vol. 2013, Article ID 461829, 31 pages, 2013. doi:10.1155/2013/461829

#### Telemedicine and cardiology—decade of our experience

##### ABSTRACT

Information and communication technology (ICT) has enabled telemedicine to become an effective model for healthcare delivery. Patients have been networked irrespective of their location for remote monitoring and timely diagnosis with this technology. This article elaborates on our telemedicine experiences, methodologies adopted and highlights the various design aspects to be considered for making telemedicine effective. An important aspect that emerged from our study was that this technology can be utilized as an excellent screening tool for patients at remote centers and undertake preventive measures for potential patients at risk of cardiovascular disease.

#### Telemedicine and cardiology—decade of our experience

Raju, P Krishnam et al.

*Journal of Indian College of Cardiology* , Volume 2 , Issue 1 , 4 - 16

#### EARLIER PATIENT BILLING DIFFUSES PATIENT FRUSTRATION

<http://www.hosrec.org/earlier-patient-billing-diffuses-patient-frustration/>



Fueling the Anger of Doctors

<http://www.nytimes.com/2010/04/30/health/29chen.html>

Eliminating the Costs, Frustration, and Waste of Dental Insurance Plans

<https://www.aegisdentalnetwork.com/cced/2017/11/eliminating-the-costs-frustration-and-waste-of-dental-insurance-plans>

Medical Billing Insurance Claims Process

<http://www.medicalbillingandcodingonline.com/medical-billing-claims-process/>

Physicians will send an average of 3.3 billing statements before a patient's outstanding balance is paid in full

<https://www.practicesuite.com/practicemanagement/physician-news-the-fine-line-between-recruitment-and-retention-0/>



## Exhibit 2. Health Care Spending, 2013

	Total health care spending per capita <sup>e</sup>	Real average annual growth rate per capita		Current health care spending per capita, by source of financing <sup>e,f</sup>		
		2003–2009	2009–2013	Public	Private	
					Out-of-pocket	Other
Australia	\$4,115 <sup>a</sup>	2.70%	2.42% <sup>c</sup>	\$2,614 <sup>a</sup>	\$771 <sup>a</sup>	\$480 <sup>a</sup>
Canada	\$4,569	3.15%	0.22%	\$3,074	\$623	\$654
Denmark	\$4,847	3.32%	-0.17%	\$3,841	\$625	\$88
France	\$4,361	1.72%	1.35%	\$3,247	\$277	\$600
Germany	\$4,920	2.01%	1.95%	\$3,677	\$649	\$492
Japan	\$3,713	3.08%	3.83%	\$2,965 <sup>a</sup>	\$503 <sup>a</sup>	\$124 <sup>a</sup>
Netherlands	\$5,131 <sup>d</sup>	4.75% <sup>d</sup>	1.73% <sup>d</sup>	\$4,495	\$270	\$366
New Zealand	\$3,855	6.11% <sup>b</sup>	0.82%	\$2,656	\$420	\$251
Norway	\$6,170	1.59%	1.40%	\$4,981	\$855	\$26
Sweden	\$5,153	1.82% <sup>d</sup>	6.95% <sup>d</sup>	\$4,126	\$726	\$53
Switzerland	\$6,325 <sup>d</sup>	1.42% <sup>d</sup>	2.54% <sup>d</sup>	\$4,178	\$1,630	\$454
United Kingdom	\$3,364	4.00%	-0.88%	\$2,802	\$321	\$240
United States <sup>e</sup>	\$9,086	2.47%	1.50%	\$4,197	\$1,074	\$3,442
OECD median	\$3,661	3.10%	1.24%	\$2,598	\$625	\$181

<sup>a</sup> 2012. <sup>b</sup> 2002–2009. <sup>c</sup> 2009–2012.

<sup>d</sup> Current spending only; excludes spending on capital formation of health care providers.

<sup>e</sup> Adjusted for differences in the cost of living.

<sup>f</sup> Numbers may not sum to total health care spending per capita due to excluding capital formation of health care providers, and some uncategorized spending.

Source: OECD Health Data 2015.

Squires, David, and Chloe Anderson. “U.S. Health Care from a Global Perspective.” Spending, Use of Services, Prices, and Health in 13 Countries - The Commonwealth Fund, 8 Oct. 2015, [www.commonwealthfund.org/publications/issue-briefs/2015/oct/us-health-care-from-a-global-perspective](http://www.commonwealthfund.org/publications/issue-briefs/2015/oct/us-health-care-from-a-global-perspective).