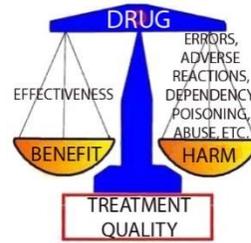


HARM FROM DRUGS IN SHORT-TERM MISSIONS
Review of the Medical Literature
Last updated: November 2016

“For all medicines there is a trade-off between
the benefits and the potential for harm.”
WHO Policy Perspectives on Medicines ¹

“Adverse drug reactions are among the
leading causes of death in many countries.”
WHO The Safety of Medicines ²



BACKGROUND: There are numerous areas where short-term healthcare missions (STMs) routinely provide quality (safe and effective) care in accordance with current international standards and practice guidelines.³ Dental and certain surgical subspecialties, in particular, relieve the suffering of numerous patients, and when combined with teaching of host country providers and patients, can have a meaningful impact on the health of a community.

Properly trained physicians providing primary care can also be of great value under numerous conditions, such as assisting host country providers in their hospitals or long term clinics and participating in healthcare provider and promoter education and training programs.^{95,96,143,148,149,155}

In fact, there are very few areas where Christians have had a greater impact on world health than our missionary mentors and their development of primary care programs.^{3,4} The Christian Medical Commission (CMC) is actually credited by our secular colleagues with originating the very term “primary care.”¹⁴⁵

Our missionary mentor’s integration of community health into primary care practice has also become the very foundation of the WHO approach to healthcare in both developed and developing countries worldwide.^{3,4,145,146} It has also been adopted by the U. S. Department of Health and Human Services (HHS) and the American Medical Association (AMA), for healthcare systems in the United States.⁵ And very highly respected secular medical journals such as the *Lancet* continue to report that the very “future of healthcare” is dependent upon implementing this CMC initiated approach.¹⁴⁷

This is in sharp contrast to our attempts to provide drug-based primary care in the typical STM setting. This approach to primary care practice is of recent onset and is not in compliance with the above CMC/WHO/HHS standards and guidelines. And though it has become quite popular with STMs, churches, patients, and drug suppliers, it is being increasingly criticized by our secular physician colleagues.⁷⁻⁹

Reports from our long-term in-country physician missionary mentors and colleagues are also very highly critical, and are being published in our own missionary books, journals and websites,¹⁰⁻²³ as well as our highly acclaimed Christian community health and evangelism texts.²⁴⁻²⁶ And as STMs are by their very definition short-term, it is our in-country missionary colleagues who are best qualified to evaluate the safety and effectiveness of our STM care of their patients and their communities.

At the same time, the harm due to drug treatment is being increasingly recognized and reported, even in the U.S., under ideal circumstances. For example, the Institute of Medicine of the National Academies (IOM) recent report on *Preventing Medication Errors* “conservatively estimates that on average, a hospital patient is subject to at least one medication error per day.”²⁷ In addition, adverse drug reactions (“Harmful, unintended reactions to medicines that occur at doses normally used for treatment.”) alone are now among the leading causes of death.²

A recent article in the *Journal of the American Medical Association* reflects the current medical literature and quotes Oliver Wendell Holmes: “If the whole materia medica (all our medicines) as now used, could be sunk to the bottom of the sea, it would be all the better for mankind, and all the worse for the fishes.”³⁷

Adverse drug events are now reported to be the 3rd to 6th leading cause of death in the US, *even with all our safeguards in place* and all our emergency systems and intensive care facilities available for treatment.^{1, 2, 29-36} For example, the FDA website reports that adverse drug reactions (ADRs) in hospitals alone are the “**4th leading cause of death; ahead of pulmonary disease, diabetes, AIDS, pneumonia, accidents and automobile deaths.**”³⁶

In addition, the Harm side of the Drug Treatment Balance must also include the unnecessary morbidity and mortality due to Dependency, Abuse (“Pharming”), Accidental poisoning, Economic impact (especially on poor families), and so on.^{24-26, 29-37}

So it is important that we not ignore our missionary mentors and in-country colleagues. The criticism concerns the adverse effects of our STM drug-based approach on the spiritual and psychological, as well as, the physical wellbeing of their patients.

Our goal in this report will be to demonstrate, from a modern evidence-based standpoint, the scientific validity of our missionary mentors' holistic, Biblically-based approach to health and healing. For the need is great and there is much that STMs can do to truly assist the local church and its communities in resolving their most important healthcare problems.

The primary author has attended over 45 STMs with various organizations to numerous countries throughout the world, and has also provided monthly long-term care to Indian migrant workers at a mission clinic in Baja, Mexico for over 15 years. However, opinions based on experience differ widely among physicians and organizations, and remain our very lowest level of evidence. This review is therefore based on the best available scientific literature.

We, and our missionary mentors, are not, of course, advocating that medications not be used, only that they be used appropriately in accordance with Biblical and evidence-based national and international standards and guidelines. It must also be emphasized that this document is *not* a criticism of STM healthcare providers. These are among the most competent and dedicated professionals we have ever had the privilege of working with.

This is rather a review and evaluation of an *ineffective and unsafe drug-based system* of care. Unfortunately, harm due to systems problems can only *rarely* be resolved by team leaders and providers *regardless how excellent* their training and efforts.^{152, 153}

We will also briefly review *alternative STM systems* developed by our missionary mentors (such as primary prevention, health promotion & education)--Alternatives that enable compliance with Biblically-based international standards and guidelines, offer far more benefits than the STM drug-based approach, and do it without the harm to the patient and community.¹⁵³⁻¹⁵⁷

WHY PATIENTS ARE AT MUCH GREATER RISK OF SERIOUS HARM FROM DRUGS IN THE SHORT-TERM MISSIONS SETTING--33 SYSTEMS PROBLEMS

1. Lack of understanding of the critical importance of the STM *setting itself* on the increased risk of serious patient harm. Care provided by medical missions must meet the legal requirements and medical standards and practice guidelines of the host country. Until relatively recently, very few standards and guidelines were available, and those were rarely enforced. Numerous international standards and guidelines have now been established for the care of patients in developing countries, and host countries are in various stages of adopting and enforcing these standards.

In nearly all cases, medical standards for host developing countries are based on World Health Organization (WHO) standards and guidelines. Even when not yet officially adopted by host country governments, they are now being used by Ministry of Health officials to evaluate the quality of care provided in their country.^{3, 97}

The *clinical setting* affects the relevance of all international standards and practice guidelines, and its critical importance has been emphasized by the World Health Organization.³⁸

For example, a drug that could be safely dispensed in the usual hospital or clinic setting with continuity of care and patient safety standards and pharmacy regulations in place, would often be

far too dangerous to dispense in the usual STM setting, even if it was on the country's "Essential Drug List" and was recommended by other evidence-based guidelines.³⁹

2. Lack of knowledge of the patient (Every patient is a new patient). This risk factor, *alone*, significantly limits the kinds of drugs even the very best physician, under *ideal* conditions, could prescribe safely.⁴

3. Lack of adequate medical record, medication list, allergy record, list of diagnoses, etc to determine whether a drug may be contraindicated. This risk factor alone is responsible for greater than 15% of errors in ambulatory care, even in the US.⁴⁰

4. Lack of adequate time for obtaining accurate and complete history.

5. Lack of adequate time/facilities for obtaining accurate and complete physical exam.

6. Lack of availability of reliable laboratory testing.

7. Misdiagnosis and inappropriate treatment of psychosomatic symptoms. The WHO reports that depression alone "is soon to become the second leading cause of disability worldwide, affecting between 5% and 10% of the population, and it is the *third* most common reason for consultation in primary care. For the reasons listed in sections 1 through 6, these conditions are rarely diagnosed correctly in the STM setting; and symptoms are often erroneously treated with drugs with serious, even lethal, adverse effects."^{4,41}

8. Lack of adequate provider training and knowledge of WHO evidence-based international standards and practice guidelines for patients of developing countries (See also Section 30). As documented throughout this report, doing more good than harm in the STM setting is extremely difficult, even for highly qualified primary care specialists with training and experience in tropical and refugee medicine. Yet many STMs allow primary care to be provided by sub-specialists who are not even practicing primary care in their home country.

Contrary to common assumptions, something is *not* better than nothing when our actions so often cause unnecessary harm. It is as though standards and guidelines for primary care do not exist, and there are not thousands of unnecessary deaths associated with our treatment, even in the US under the best of circumstances. This is especially nonsensical as sub-specialists are so critically needed and have so much to offer when simply enabled to teach and practice in their area of training and expertise.^{148, 155}

It is important to recognize that WHO standards and guidelines are *often based on the work of our Christian missionary physician mentors and faith based organizations*. This is especially true of those related to primary care, which is what most healthcare missions attempt to provide. Current WHO standards and guidelines for primary care, are in fact, based on the work of the CMC of thirty years ago, whose members worked very closely with the WHO.

For example, the WHO 2008 World Health Report is devoted entirely to Primary Care and emphasizes the need to return to the Alma Ata principles.⁴ Those principles emphasize the integrated holistic (mind, body, spirit) Biblically-based approach to healthcare and were co-authored by Dr. Carl Taylor, a member of the CMC and long-term missionary to China.^{26,144-147}

9. Confusion due to language and cultural differences. This risk factor, alone, significantly limits the number of patients per day even the very best physician, under ideal conditions, can evaluate and treat safely.

For example, the WHO reports that worldwide "50% of patients fail to take medicines correctly."⁴² and there are numerous unnecessary deaths on and off the missions field due to this risk factor alone. This is especially tragic when the medicine has only symptomatic benefit, at best, and *no* therapeutic benefit (e.g. NSAIDs, Cold and cough medicines, Anti-diarrhea medicines, etc.).

Yet the IOM reports that this problem "often goes unrecognized" by healthcare providers.⁴³ This is true for therapeutic medicines as well.

For example, a missionary from Mexico recently reported the death of a child treated by a STM with metronidazole because the parents thought it would be more effective if all the medication was given at one time.

10. Increased mortality due to lack of emergency medical systems and intensive care units for timely and appropriate treatment of adverse effects. Although prevention is always of greatest importance, the proper use of therapeutic medicine can, of course, be lifesaving.⁴ However, by far the great majority of medicines donated and dispensed by STMs are for symptomatic, not therapeutic, treatment (The medicines do not beneficially affect the course of the disease or condition, but only give temporary symptomatic relief). Nevertheless, these are among our most dangerous medicines.^{44, 45}

As NSAIDs are often the most frequently dispensed medicine for STMs, we will use NSAIDs as an example in this document. NSAIDs may be effective for temporary symptomatic relief of the aches and pains which are our STM patient's most common complaints. However, as noted above, a medicine's true value is always a balance between "Benefit" (Effectiveness) and "Harm" (Inherent adverse effects, Medication errors, Drug interactions, Dependency, Abuse, Accidental poisoning, Economic impact, Etc.).²⁹⁻³⁷

For example, *The New England Journal of Medicine (NEJM)* reports that NSAIDs cause 16,500 deaths/year in arthritis patients *alone*, due to gastrointestinal (GI) complications *alone*, in the U.S. *alone*.⁴⁵

Deaths due to cardiovascular, renal, and other NSAID adverse effects were *not* included. We have made osteoarthritis a lethal disease for thousands each year in the U.S., and as far as we could determine in this review, osteoarthritis since the beginning of medical record keeping, had never killed anyone. (Some studies find that patients with osteoarthritis have a higher mortality than people of the same age without osteoarthritis. But in these studies, osteoarthritis was caused or accompanied by high-risk factors that increase mortality such as obesity, diabetes, cigarette smoking or NSAIDs.)

The *NEJM* chart puts this in perspective by showing that the number of NSAID caused GI deaths alone in these arthritis patients alone was about equal to the total number of deaths due to AIDS, and many more deaths than due to conditions such as multiple myeloma, asthma, cervical cancer, etc. in our entire country.

Unfortunately, the cardiovascular adverse effects of NSAIDs are reported to be even greater—Other *NEJM* articles report that the numbers of myocardial infarctions and strokes due to Rofecoxib *alone* was estimated to be greater than 160, 000.^{46, 47}

The various NSAIDs vary somewhat in their specific toxicities. However, *all* NSAIDs continue to share extensive black box warnings for the above, and even ibuprofen lists the following adverse effects in the *serious* (life-threatening) category alone: "heart attack, stroke, high blood pressure, heart failure from body swelling (fluid retention), kidney problems including kidney failure, bleeding and ulcers in the stomach and intestine, low red blood cells (anemia), life-threatening skin reactions, life-threatening allergic reactions, liver problems including liver failure, and asthma attacks..."

These causes of death often go unrecognized as being due NSAIDs, especially in developing countries. Though some of these deaths may occur after longer-term use, even if we would only give patients a 3-day supply, by our example we have taught them that NSAIDs is what they need, and poor people will often use their food money to purchase more of them. Even if local providers were able to correctly diagnose the cause of the patient's symptoms, the mortality rates for NSAIDs would be much higher in countries without emergency systems and medical and surgical ICUs to care for them.

In contrast, there is much that could be done to *prevent* the associated causes of osteoarthritis and reduce the mortality rates of obesity and diabetes as well.^{3,4}

11. Lack of patient awareness of medicine's adverse effects. When drug deaths are reported in the media, drug company representatives nearly always respond: "Our (drug name) is approved by the FDA and is therefore effective and safe, when taken as directed."

It is true that tens of thousands of deaths are caused by the "not taken as directed" part, and can be blamed on us and our patients (Particularly when "taken as directed" means complying with all the physician requirements as stated in a drug's typical package insert which can go on

for over 20 PDF pages). However, *inherent* drug adverse effects *alone* are a leading cause of death in the U.S., even with all our modern facilities for treatment.^{1,2, 29-37} The U.S. Government Accountability Office (GAO) reports that 51% of new drugs have serious adverse effects which are *undetected at the time of FDA approval*.⁴⁸ And 10.2% of the 548 most recently FDA approved medications have already been withdrawn from the market or given a black box warning.⁴⁹

Nevertheless, drug company physician detailer and public relations departments are very highly effective; and the IOM reports that even with our educated population, medication harm goes unrecognized by both physicians and patients and “many individuals believe that drugs approved by the FDA carry no significant risks.”⁵⁰

In addition, most STM patients know we are Christians and do not believe we would “travel all that way to give them a medicine that would harm them.” Poor, uneducated patients from developing countries are particularly at risk.

A common example from our missions practice in Baja, Mexico, an area frequented by STMs: A migrant fieldworker with musculoskeletal pain treated with NSAIDs experiences stomach pain. He knows the medicine is for pain so continues to take more, and shows up at our clinic with GI bleeding. Yet he is one of the very fortunate ones. Many apparently healthy poor people in developing countries die “unexpectedly” at a relatively young age without ever seeing a doctor. And many others die of unexpected and unexplained heart attack, or stroke or kidney failure of “unknown” cause.

The IOM and the Agency for Healthcare Research and Quality (AHRQ) report that medication safety and health outcomes are directly related to health literacy; and that health literacy problems are very common and often go unrecognized, even for patients in the U.S.^{51, 52}

Another IOM report states “Individuals with limited literacy are also less likely to seek out information or ask for clarification during medical encounters...”⁵³

For the above reasons, drug related morbidity and mortality usually goes *unrecognized* by healthcare providers, even for patients in the U.S., and would be much more common for STMs in developing countries.⁵¹⁻⁵³

12. Lack of package inserts, patient medication guides, black box warnings or other informed consent information legally required in the US. Even when they are available, they are rarely in the patient’s language.

The IOM reports: “Patient rights are the foundation for the safe and ethical use of medications. Ignoring these rights can have *lethal* consequences. Many, but not all, patient rights relating to medical care have been established broadly in the U.S. Constitution (Amendments I and XIV) and articulated by the courts through common law.”⁵⁴

A “core component” of the WHO *Rational Use of Medicines* requires that even OTC medicines include: “adequate labeling and instructions that are accurate, legible, and easily understood by laypersons. The information should include the medicine name, indications, contra-indications, dosages, drug interactions, and warnings concerning unsafe use or storage.”⁵⁵

This also results in STM *failure to comply with international ethical standards for informed consent*. For example, the UNESCO Universal Declaration on Bioethics and Human Rights (October 2005) Article 6.1 requires: “Any *preventive, diagnostic and therapeutic medical intervention is only to be carried out with the prior, free and informed consent of the person concerned, based on adequate information.*”

From an evangelical standpoint, our failure to comply with ethical standards also leads our secular colleagues to believe we are much more concerned with the ethical behavior of others than our own.

13. Lack of adequate time for counseling concerning adverse effects by either the physician or the pharmacist. This is especially difficult for drugs with numerous serious adverse effects such as NSAIDs where the drug company’s informed consent requirements for physicians can go on for several pages (For example the drug company’s package insert for Ibuprofen (Motrin) is now more than 25 PDF pages).

Yet this counseling is often much more important for patients in developing countries, than for our patients in the US.

For example, the frequency of ulcers in patients taking NSAIDs is even higher in the presence of *H. pylori* (“There is synergism for the development of peptic ulcer and ulcer bleeding between *H. pylori* infection and NSAID use.”).^{56,57} And *H. pylori* infection is much more common in developing countries than in the U.S. (For example, 70-90% of all patients in Mexico, Central and South America, Africa, etc.)⁵⁸

So the number of NSAID GI deaths reported in section 10 would be much higher for STM patients, even if the cause was recognized and the country’s emergency response and intensive care facilities for treatment were similar to those in the US.

14. Increased risk of drug interactions and drug overdose. Because our medicines are free or low cost, poor patients *often deny they are taking any medicines or have medicines at home* in order to be certain they will receive ours. This results in a serious increase risk of lethal drug interactions and drug overdose. This is easily confirmed by simple follow-up home visits. Autopsies are rarely done in developing countries so we cannot confirm that the number of deaths due to adverse effects of drugs exceeds the U.S. 3rd to 6th leading cause. However, our follow-up home visits routinely document frequent *inappropriate and dangerous misuse* of medicines. This is a *very* common and *very* serious problem and is almost certainly responsible for many of the unexpected deaths. (See also sections 9 and 11 and references 42&43.)

15. Disrupts the patient/physician relationship and continuity of care for chronic conditions such as hypertension. The patient may, in fact, be well cared for by a local primary care physician or other practitioner who is using the best treatments available for the patient’s condition. This also is a very common problem and again, usually takes repeat questioning and reassurance to obtain the true history.

The IOM reports: “Patient value is found in the integrated care of a patient’s medical condition, rather than care from a single specialist or discrete intervention.”⁵⁶ Disruption of continuity of care has also been documented to cause significant increased morbidity and mortality.⁴

Also, poor compliance with physician treatment recommendations is already a major problem worldwide. The WHO reports: “In developed countries, adherence to long-term therapies in the general population is around 50% and is much lower in developing countries.” Our STM treatment may, therefore, adversely affect local physician-patient relationships and continuity of care, and result in increased morbidity and mortality.⁵⁹

16. Significant increased risk of accidental poisoning by STM children. *The Medical Letter* reports: “Every pharmaceutical drug is a dose dependent poison.”⁶⁰ Reasons STM children are at much greater risk of poisoning include:

- a. Lack of knowledge of child safety requirements by STM families.
- b. Lack of safe storage area in home.
- c. Lack of child-safe containers (Again *legally* required in our country and proven to decrease unnecessary deaths in children). Some STMs even dispense their medicines in sandwich “baggies”.

17. Increased mortality due to lack of poison control centers, emergency medical systems and intensive care units for timely and appropriate treatment of accidental poisoning or overdose.

18. Failure to comply with International Standards and Guidelines that require “There should be *no double standards in quality*,” *regardless of culture or economic status*.⁶¹ This even applies to use of drugs that were originally given to health professionals as free samples and then donated:

“No drugs should be donated that have been issued to patients and then returned to a pharmacy or elsewhere, or were given to health professionals as free samples. *Justification and explanation:* Patients return unused drugs to a pharmacy to ensure their safe disposal; the same

applies to drug samples that have been received by health workers. In most countries it is not allowed to issue such drugs to other patients, because their quality cannot be guaranteed.”⁶¹

The above demonstrates the tremendous importance of the “double standard” to the international community (including the World Council of Churches which *originated* these guidelines) and it has resulted in useful drugs *not* being donated which might have helped patients.

This seemingly over-emphasis on preventing double standards cannot be understood until the effects of lack of compliance in *other* areas of drug use are considered. For once the use of a double standard becomes acceptable in one (even extremely minor) area, it more easily becomes acceptable in others. For example, our double standards in areas such as informed consent (Sections 12 & 13) and patient safety and pharmacy regulations (Sections 1-6 & 16) especially place our STM patients at tremendous increased risk of serious harm.

19. Neither the prescribing provider nor the dispensing pharmacist will be available when there are adverse effects from the treatment. This failure to acknowledge the critical, life-saving importance of the physician/patient relationship and continuity of care, disregards the very foundation of CMC initiated principles of U.S. and international primary care practice.^{3,4,5,6,59, 145, 146,147} (See also Section 15)

20. Local in-country health care providers and pharmacy personnel usually have little knowledge of our drugs and their adverse effects, and/or lack the resources to treat our patient’s drug related complications.

For example, headaches in field workers are very common and are frequently treated with NSAIDs by STMs. However, headaches in field workers are very commonly caused by dehydration due to failure to drink enough water. Even very small, limited doses of NSAIDs have caused renal failure in previously healthy patients with minimal dehydration. And even in the best tertiary centers in our country, the correct diagnosis can be missed without renal biopsy, and treatment require dialysis.⁶²⁻⁷⁴

The increase in renal failure is not limited to our community. *US Pharmacist* reports “Each year, up to 5% of people who take NSAIDs will develop renal toxicity” and “20% of hospital admissions for acute renal failure are reportedly caused by drugs, particularly NSAIDs.”⁶³⁻⁶⁵

Dehydration is also very common in children with fever, and increasing numbers of acute renal failure due to NSAIDs are being reported in children as well.⁶⁶⁻⁶⁷

This is very difficult to rationalize when the American Academy of Pediatrics and other evidence-based guidelines have long reported that “Fever is generally harmless and help your child fight infection.”⁷⁵

21. Medications used by STMs are often donated and lack compliance with WHO international standards and practice guidelines for donated medicines. The Churches’ Action for Health initiated *WHO Guidelines for Drug Donations* reports: “Prescribers are confronted with many different drugs and brands in ever-changing dosages; patients on long-term treatment suffer because the same drug may not be available the next time. For these reasons this type of donation is forbidden in an increasing number of countries and is generally discouraged.”⁶¹

Also as noted by the above, donated medicines, in addition to being tax-deductible, often appear to meet the needs of the donor rather than our patients. For example: Donated meds often include various combinations of drugs that lack scientific sense or validity, or are not on WHO Essential Drug lists for other evidence-based reasons.⁶¹

Donated medicines also often include samples of newly released preparations for marketing purposes. Many doctors are now refusing to dispense these samples to their patients because of the lack of evidence of drug safety.⁷⁶ (Please also see sections 11 and 18 concerning increased safety risks of newly approved drugs.)

Also, after cold and cough medicines were recently removed from the market in the U.S. for children under two years of age because of increased morbidity and mortality, our mission clinic in Mexico was inundated with drug company donations of these preparations.

Additional “Examples of problems with drug donations” are included in the annex to the *WHO Guidelines for Drug Donations*.⁶¹

22. Increased patient harm due to STM use of drugs which the CDC, AAP, WHO and other evidence-based guidelines report are of no therapeutic value and increase morbidity and mortality, especially in children. Numerous drugs fall into this category. For example, a recent CDC report provides examples of unnecessary children’s deaths due to anti-diarrhea medicines.⁷⁷ However, as cough and cold medicines are usually the most frequently dispensed medicines for children, we will use those as an example for this report:

The *American Academy of Pediatrics (AAP) Practice Guidelines* since 1997 report the following concerning cough and cold medicines:

-“The over the counter availability of numerous cough and cold preparations promotes the perception that such medications are safe and efficacious...Education of patients and parents about the lack of proven antitussive effects and the potential risks of these products is needed.”

-“Cough serves as a physiologic function to clear airways.”

-“Cough suppression may adversely affect patients ... by promoting pooling of secretions, airway obstruction, secondary infection, and hypoxemia.”

-“Decongestant (sympathomimetic, stimulant) components of these mixtures administered to children have been associated with irritability, restlessness, lethargy, hallucination, hypertension and dystonic reactions.”

-“Cough due to acute viral airway infections is short-lived and may be treated with fluids and humidity.”⁷⁸

More recent AAP reports continue to emphasize: “The few pediatric studies that have been conducted have failed to document beneficial effects of *any* of the compounds studied.”^{79, See also 80,81}

Clinical evidence-based practice guidelines concerning prevention of complications such as “Otitis media with Effusion (OME)” from the *American Academy of Family Physicians, American Academy of Otolaryngology, and AAP*: “Because antihistamines and decongestants are ineffective for OME, they *should not be used* for treatment”⁸²

This is also confirmed by European evidence-based guidelines: “Likely to be ineffective or harmful” (*Worst possible rating*-“demonstrated by clear evidence.”)...“Antihistamines can cause behavioral changes, seizures and blood pressure variability.”⁸³

American College of Chest Physicians Evidence-Based Guidelines: “In children (<15 years) with cough, cough suppressants and other over-the-counter cough medicines should not be used, as patients, especially young children, may experience significant morbidity and *mortality*.”⁸⁴

That the adverse effects are due to medicines usually goes unrecognized, especially in children, and deaths are easily blamed on SIDS, or electrolyte imbalance or other disease related conditions.^{77, 84-91} For example, children's deaths from usual doses of the commonly used children's medicine, promethazine (Phenergan), were reported for over 25 years before it resulted in an FDA Alert.⁸⁵ Phenylpropanolamine was present in the most popular OTC and prescription cold medicines for both children and adults, and was for decades one of the most widely ingested drug products in the US, until finally taken off the market.⁸⁶

It therefore takes many years to obtain the documentation necessary to remove a drug from the market. Until that time, because of "free speech" legal requirements, full page advertisements for cough and cold medicines continue to be published, even in AAP journals, leading even pediatricians to believe that use of these preparations is indicated. This is in direct opposition to the above practice guidelines, as well as ongoing reports from the FDA and CDC documenting that cold and cough medicines are responsible for numerous otherwise unnecessary ER visits, and have turned the common cold into a *lethal* disease for children, even in the US.⁸⁵⁻⁸⁷

These child morbidity and mortality risks are magnified in STM settings by the lack of health literacy leading to overdose and inappropriate use, lack of facilities for treatment of adverse effects, and under-nutrition related health problems with inability to overcome the harmful effects of these drugs.⁷⁸⁻⁸⁷

In addition, cold and cough medicines contain mind-altering drugs and are frequently abused by children, teenagers and young adults. As children often get 6-10 colds per year, conditioning children to “take a drug” whenever life isn’t perfect, in itself, contributes to drug dependence and abuse. This problem is amplified by the drug properties themselves:

-“FDA Warns Against Abuse of Dextromethorphan.” In addition to five recent teenage deaths, the FDA reported “brain damage, seizure, loss of consciousness, and irregular heart beat. Dextromethorphan abuse, though not a new phenomenon, has developed into a disturbing new trend.”⁸⁸

-The National Institute of Drug Abuse reports that the incidence of prescription drug abuse (“pharming”) is on the rise; and that two of the four most commonly abused prescription drugs by college students are the cold & cough medicines, pseudoephedrine & dextromethorphan.⁸⁹

-The same is true for Over-the-Counter (OTC) cold meds and children and adolescents. The CDC reports: “In 2006, about 3.1 million persons aged 12 to 25 (5.3 percent) had ever used an OTC cough and cold medication to get high.”⁹⁰

-The National Institute of Drug Abuse reported the “Percent of children who used over-the-counter cough and cold medicines *during the past year* (2008) for the *explicit purpose of getting high*: 8th-Graders 4%. 10th-Graders 5%. 12th-Graders 7%.”⁹¹

In contrast, simple, evidence-based, holistic (Christ-centered) guidelines for teaching parents how to appropriately care for common childhood illnesses are available free for downloading in multiple languages⁹⁶ and can empower families to truly help their children in the U.S., as well as, the mission field.

23. STM use of drugs leads our patients to over-value them, resulting in additional increased patient morbidity and mortality, especially for children, long after we are gone.

For example, because of the frequency of colds, the costs of these medicines can be substantial. This is true for our families in Baja, Mexico. Parents whose children are treated with free cold medicines by STMs are led to believe they are important and subsequently *use their food money* to purchase them. Over 50% of the unnecessary deaths in children of developing countries are already related to poor nutrition.⁹²

We sometimes hear “Drugs in developing countries are not as high quality as those we bring from the US.” If this is true, then it is yet another reason *not* to reinforce our patients’ belief in the importance of drugs.

If we believe it is our mission to supply “high quality” drugs to a community then it needs to be on an ongoing basis. Otherwise, we have simply taught them that drugs are what is important for healing, and they will purchase even more of whatever drugs are available (Our little town in Baja now has a pharmacy on nearly every block of our main street). We also need to remember that our vitamins and similar preparations are not regulated in the US, and locally available products may actually be of higher quality.

24. Lack of compliance with International Standards and Practice Guidelines for the 70% of our patient's problems requiring health education and other preventative care.^{3, 4}

The WHO reports that one of the *most important problems in healthcare* throughout the world is “*Misdirected care: Resource allocation clusters around curative services at great cost, neglecting the potential of primary prevention and health promotion to prevent up to 70% of the disease burden...*”^{3, 4}

Curative care is needed for about 30% of our patient’s healthcare problems, and we must continue our efforts to provide and teach high quality curative services (includes proper use of essential medicines). However, if we wish to provide quality, evidence-based care for the remaining 70%, integration of community health with primary care in accordance with Christian Medical Commission originated HHS, AMA and WHO standards is essential, especially on the mission field.

Highly acclaimed Christian community health and evangelism texts are assisting long-term missions and their communities in meeting the above requirements.²⁴⁻²⁶

The number of guidelines available through the [WHO website](#) is now almost overwhelming, and they vary significantly in importance. The “Best Practices in Global Health Missions” website ⁹⁷ seeks to point to those guidelines that are especially required in host countries, such as the Integrated Management of Childhood Illness (IMCI) and Integrated Management of Pregnancy and Childbirth (IMPAC). ^{93, 94}

The above evidence-based, holistic guidelines have also been incorporated into educational programs for use by STMs, as well as long-term missions, at all levels of care (hospital, clinic and church/community). These and other lifesaving guidelines are available free for downloading from Christian websites. ^{95, 96, 143}

For example: The WHO's *Preventing chronic diseases: a vital investment* (Oct 2005) reports that at least 80% of Premature Heart Disease (#1 Cause of Death), 80% of Stroke (#3 Cause of Death), 80% of Type 2 Diabetes (#6 Cause of Death), and 40% of Cancer (#2 Cause of Death) *could be prevented* through just 3 things: (1) Not using tobacco. (2) Appropriate diet. and (3) Adequate exercise. ^{3,4,5, 24-26, 95,96}

STMs can use these free resources to empower missionaries and church educators, as well as local healthcare providers, to appropriately address their communities' most critical healthcare needs, and do so in a self-sustaining manner, without the adverse effects of drug treatment. ^{95,96}

25. STM use of drugs impairs and often delays local community health worker's efforts to resolve true causes of illness, resulting in increased morbidity and mortality. Even on those occasions when our drugs are safe and highly effective, such as for treatment of worm infections, our patients will soon be re-infected unless latrines are built and appropriately utilized.⁴ In addition, lack of adequate latrines causes numerous deadly bacterial and viral infections and far more problems than just worms. For these reasons, missionary mentors such as Dan Fountain (See Section 33c) *never* treated worm infections with medicines until *after* a proper latrine had been built and he had inspected it. Treating with Albendazole before that happens just gives patients the belief that drugs are the answer, and leads to more unnecessary deaths.

Delays in appropriate treatment due to reliance on STM drugs can also result in more immediate deaths. For example, a moribund little girl was brought to a STM clinic in Nepal after being ill with vomiting for 5 days. She had a ruptured appendix. When the parents were asked why they had not taken her to the local hospital where she could have been saved, they replied, “We would have, but we knew the Americans were coming with their wonderful medicines and thought it was better to wait.”

So even if the STM drugs could result in some, at least temporary, benefit for the occasional patient, it comes at a cost of tremendous harm.

26. STM use of drugs impairs local health worker's efforts to promote self-reliance, independence and personal dignity. Highly acclaimed texts by our missionary mentors report the following:

“If an outside change agent (i.e. STM) is viewed as a supplier of goods (i.e. relief), it is very difficult to switch to a developmental, self-reliant process...Eighteen months later the project was still trying to overcome this dependence attitude.”p82 ²⁵

“BEWARE THE CURSE OF MALINCHE. Malinche was a Mexican who helped the foreign soldier Cortes invade Mexico and conquer the country. The Curse of Malinche is the belief that anything foreign or western is good and must be better than things made in our own country. The Curse of Malinche makes poor people want to buy the latest drink, food, cigarette, or drug from the nearest ‘smart’ country...This in turn leads them deeper into poverty.”²⁴

"Each year drug manufacturers, especially multinational corporations, are developing new and more effective ways of persuading ordinary people that a whole range of medicines and injections are necessary...Two examples illustrate the pressures against rational drug use. Example (1) recently one drug company offered Peruvian pharmacists a bottle of wine if they ordered three boxes of its cough and cold remedy. Example (2) another company told doctors to suspect Giardia or amoeba in all cases of diarrhea and treat immediately with metronidazole In

fact, this drug is only needed in a very small proportion of diarrhea cases.”²⁴ (See also Section 33, Dr. Ted Lankester.)

We often hear “But we give out mostly vitamins, what’s the harm in that?” By our actions patients are led to believe these preparations are important and will use their *food money* to purchase more of them. Although vitamins are sometimes indicated, evidence-based guidelines clearly document that natural unprocessed foods are far superior to vitamins and other supplements in nearly all cases. And instead of providing nutritional information to promote self-sufficiency, we promote further dependence on the drug industry.

Dr. Carl Taylor, long-term missionary to India and co-author of the *Declaration of Alma-Ata*, recently reported the following: “If you really understand what we mean, doctors automatically get not only resistant, they get angry. Because what we are saying is the most important health workers in the world are *mothers*. It is that reality that we have not been willing to face...the arrogance with which we have carried out our professional roles--taking ownership from the community and assuming that the ownership of the health system is in the hands of the doctors and other health workers...*That simple message is that if we are really going to do what Jesus showed us to do, it is building up the capacity of the people to solve their own problems.*”¹⁴⁴ (See also Section 33, Dr. Carl Taylor.)

27. Because our patients are poor and drugs are expensive, medicines are often sold on the “black market” in developing countries.⁹⁸ Long-term missionaries report major increases in these sales at local markets after STM clinics.⁹⁹

This also leads to STM patients presenting with “shopping lists” of complaints. And after the second or third day of clinic, many patients are quite adept at presenting the kinds of history necessary to obtain a variety of drugs. (This is not to criticize our STM patients--most of us would do the same if our families were desperately poor and we were placed in their position.)

Interviews with STM patients document that even if the drugs are not sold, they are often given to relatives or friends.

28. STM use of drugs supports and increases the effectiveness of pervasive worldwide drug advertising. Numerous studies have documented that health care, especially in the U.S., is now increasingly based on advertising--*Not* truth or scientific evidence or patient education.^{46, 100-105, 108, 115}

Advertising of prescription drugs is of relatively recent onset (1982); and over 200 prominent medical professors from our best medical schools as well as medical editors from our best journals, have pleaded with Congress and the FDA to withdraw the approval for such advertising, even in the U.S. with our educated population. As reported on the FDA website:

“Direct-to-consumer marketing of prescription drugs should be prohibited... Advertising does not promote public health. It increases the cost of drugs and the number of unnecessary prescriptions, which is expensive to taxpayers, and can be harmful or deadly to patients... All drugs, including those that can heal, can also cause harm... Prescription drug advertising is *not* educational. It is inherently misleading because it features emotive imagery and omits crucial information...”¹⁰⁰

Medical journals, U.S. consumer groups, the AMA¹⁵¹ and the WHO¹⁵⁰ also report that drug advertising is responsible for much of the harm due to the “irrational use” of medicines. For example:

-“In 2006, drug companies spent nearly \$5 billion on direct ads to consumers. Every dollar spent results in \$6 in increased sales.”

-“Doctors do not have time to argue with patients and so give in to their requests.”

-“An additional \$7 billion/year is spent on drug advertising to doctors.”

-Scientific medical journals as well as Consumer Reports warn: “Don’t be taken in (or deceived) by drug ads” and “Drug advertising is misleading, results in unnecessary treatment and cost and is harmful or deadly to patients.”^{46, 101-105, 108, 115, 150}

The same is true concerning industry representatives as the source of medical information provided to *physicians*. As noted in the *New England Journal of Medicine* and elsewhere “94%

of even the information drug companies provide to doctors was shown to have “*no basis in scientific evidence.*”^{106, 107, 108, 115}

As also documented in sections 23, 26 and 33, the *economic impact alone, of this irrational use of drugs and their adverse effects can be devastating*, especially for the children of poor families in developing countries. The WHO reports “Over 100 million people annually fall into poverty because they have to pay for health care.”⁴ In contrast to the integrated holistic primary care advocated by our Christian missionary mentors; drug-based STMs very strongly support this advertising-based drug culture.²⁴⁻²⁶ If you carry in drugs on your STM, yours is a drug promoting mission. You may not think of your mission in that way, but our Baja patients certainly do.

29. In spite of our best intentions, the previously listed problems inherent in the typical STM setting magnify our drug-based system’s harmful effects. As noted previously, we believe “properly trained physicians providing primary care can be of great value under numerous circumstances, such as assisting host country providers in their hospitals or long term clinics and participating in healthcare provider and promoter education and training programs.”^{95,96,143,148,149}

Our *intentions* for the drug-based STM treatment of our primary care patients also meet the very highest of ethical and moral standards.

The story of the boy throwing starfish back into the sea is often used as a justification for STM, “At least I made a difference for that one.” However, it is not the intention to do good, but the *unintended harm* that is the problem. Providing safe and effective healthcare is far different than throwing starfish into the sea. And as repeatedly documented throughout this report, our primary care drugs have numerous adverse effects and are a leading cause of death, *even in the US long-term setting, with all our safeguards in place*. So in spite of our very best intentions, the previously listed problems inherent in the typical STM setting magnify the very worst of our drug-based system’s harmful effects.

The WHO reports a critical, world-wide need for teaching and demonstrating quality health care.^{109, 110} However, even *minimum quality care by the most skilled and experienced physician takes time* (and for the reasons listed above, the amount of time required is many times multiplied in the STM setting). In contrast, a *prescription can be done in seconds* by anyone, regardless of their competence. The WHO reports: “Irrational use of medicines is a major problem worldwide. It is estimated that half of all medicines are inappropriately prescribed, dispensed or sold.”³³

So even the very least qualified provider can easily see extremely large numbers of patients, especially in the typical STM setting where there is little oversight and virtually no legal consequences (Autopsies are rarely performed and lethal drug adverse effects are rarely considered as a cause of death of poor people in developing countries).

And, unfortunately, even on the mission field, the true emphasis is often no longer on providing and teaching meaningful quality care and thus demonstrate Christ’s love and healing; but on “How many patients did we see?” or even “How many prescriptions did we dispense?”

“Best Practices” and “Quality care” are often mentioned in STM literature and, as noted above, that is certainly always our intention and our fondest hope. However, we were unable to find a single study to indicate that this optimism was in any way justified for drug-dispensing primary care in the STM setting.

This is in sharp contrast to the historical record of our physician missionary mentors (See Section 33) and other long-term mission colleagues who have been world leaders in establishing WHO standards and guidelines, as well as medical schools and hospitals, for the provision and teaching of the highest possible quality care throughout the world.^{24-26, 119, 129-135}

30. For the above reasons, the typical STM primary care setting provides a very poor teaching example for medical students and local health care providers and results in perpetuation of irrational use of medicines and resulting poor quality care.^{1-38,108-110} The WHO *World Health Report for 2008* states “Moving towards health for all requires that health systems respond to the challenges of a changing world and growing expectations for better performance.”⁴ Yet we sometimes hear “We know our STM care is not very good quality, but it’s

the best we can do. God will have to take care of the rest.” Unfortunately, this has no Biblical basis. Jesus in Luke 4:12 clearly states “Do not put the Lord your God to the test.”

The primary justification for drug-based STMs is often “evangelism” and the “opportunity to demonstrate Christ’s love.” However, this requires more than just an emotional feeling and “good intentions.” *Practice by the Book-A Christian Doctors Guide to Living and Serving* states: “The quality of our work and service is more than just a part of our professional persona; it is an important part of our witness for Christ...We are commanded to be excellent... Jesus healed the sick because he loved them...Love does not reach out with leftovers.”¹¹¹

And as also emphasized by our missionary mentors, there are far better ways to evangelize and demonstrate Christian love than the STM drug-dispensing system (See Section 33).

31. STM use of drugs inappropriately utilizes the placebo (belief or self-healing) effect, resulting in drug dependency. Our missionary mentors have long emphasized the critical importance of our beliefs and self-healing (See Section 33 and references). This has now been overwhelmingly confirmed by the scientific community. As reported by National Institutes of Health (NIH) *The Science of the Placebo*, “The placebo has been considered a ‘nuisance factor’ in clinical trials when, in fact, it represents a powerful therapeutic ally in health care.”¹¹²

The critical importance of the placebo (Belief or self-healing) effect for *all* our treatments has been unequivocally documented, and is now being increasingly emphasized in evidence-based reports.^{108, 112-115}

A review of almost any medical journal will also document that the benefit of most of our most frequently used drugs is very often *primarily* due to the placebo (Belief or self-healing) effect, even for those drugs that have been shown to be “highly effective”.^{108, 112-115}

For example, drug company physician literature for one of our most expensive NSAIDs, Celecoxib, report (correctly) that it is very highly effective with $p = .008$. This study was very highly promoted by the drug industry and also showed that herbal medicines, though probably safer, were of no benefit at all. However, a review of the original article shows that the placebo (or belief or self-healing effect) helped 6 times more patients than the Celecoxib itself (Number needed to treat to benefit one patient = 10).¹¹⁶

So it is not Celecoxib’s p value of .008 that is so remarkable, but the *six-fold greater* numbers who responded to belief and self-healing. If we allow patients to falsely believe it was the drug that healed them instead of their own natural healing, *we create a dependency on a drug that did not previously exist*, and is based on *false* belief (6 of 10 responded to self healing, only 1 of 10 to Celecoxib). Contrary to all scientific evidence, our culture and STM drug-based therapy give credit for this self-healing to the drug and drug companies. Our physician missionary mentors, however, gave the credit to a loving Creator for this healing. (See the *Evidence-based Alternatives* below.)

Our missionary mentors have long emphasized the critical importance of the adverse effects of our drug treatment on the *spiritual and psychological wellbeing* of our patients (See Section 33 and its references). And as noted above, this *scientifically proven false belief* also *always* comes with the NSAIDs tens of thousands of deaths per year due to adverse effects alone, as well as major contributions to poverty related and other deaths.

a. The Belief-Healing Relationship--The Scientifically Proven Blessing. In contrast, this same belief/self-healing relationship has been appropriately utilized for centuries in a manner that does not result in dependency, but rather empowerment of the patient, primarily through teaching and prayer. Although the above belief/self-healing relationship has in the past sometimes been classified as “miraculous,” our missionary mentors are *not* referring to “supernatural” healing here (See also Section 33).

Though they (and we) strongly believe that supernatural healing can also take place, many healings can now be explained by medical science such as reported by the NIH’s *The Science of the Placebo*: “Beliefs/Values initiate a neuro-hormonal cascade that results in the healing response.”¹¹²

This type of healing no longer needs to be classified as “miraculous” in the supernatural sense. Rather, as especially noted by Dr Paul Brand¹²⁹⁻¹³¹ and Dr Dan Fountain¹³¹⁻¹³⁵ and Section 33, *a loving God created our bodies to be naturally self-healing and to respond to our beliefs*. Their teaching is now being *overwhelmingly* confirmed by the above scientific reports as well as, every day, in our very best medical journals: For example, in the above Celecoxib and similar studies, we now know that patients with pain who believed they were being given the drug or other treatment were responding with their own belief-induced natural endorphins.¹¹²⁻¹¹⁵

In the view of many Christian physicians, this belief induced “natural” self-healing, although it can now be explained scientifically, is no less a wonderful gift from God than “supernatural” healing.

b. Evidence-based Medicine, Prayer Ministries and Supernatural Healing. The randomized controlled trial (RCT) is absolutely essential for evaluating the effectiveness of drugs, and is therefore of utmost importance in a drug-based culture. However, it must be emphasized that although the RCT is considered the “gold standard” for drugs, it does a very poor job of measuring the effectiveness of other treatments; and is very poor at even evaluating the safety of drugs which is often much more important than the drug’s effectiveness.^{108, 112-115}

For the same reasons, although RCTs quantifying love and faith and the resulting healing effects are not possible, there is now an overwhelming abundance of non-RCT *scientific* evidence that Jesus’ and our missionary mentors’ teaching and holistic methods are as valid and relevant today as 2000 years ago.^{4, 112-123}

Jesus repeatedly emphasized the critical importance of the belief-healing relationship and time and again told his patients “Your *faith* has healed you” (Mark 11:24, Luke 8:48, Luke 8:50, Luke 18:42, etc.) And numerous additional books by pastors, evangelists and our Christian colleagues in the healing prayer ministries now contain *thousands of case reports* of healing as a result of belief in Jesus’ words and prayer.¹¹⁷⁻¹²³

Unfortunately, Jesus’ instructions concerning the “Great Commission” and his holistic teaching on the importance of Love and Faith for healing are no longer considered relevant by most modern western-trained doctors and are not reflected in their practice.

However, the large numbers of case reports and the overwhelming strength of the scientific evidence concerning the healing power of belief can no longer be ignored. (Google search April 2009 shows 4,740 entries for books and references on “healing prayer” alone.)

c. Evidence-based Alternatives to Drug-Based Adverse Effects, False Beliefs and Dependency. As most studies are now funded by drug companies, it often takes many years before evidence-based guidelines have enough information to appropriately evaluate the safety of drugs, or the effectiveness of non-drug therapy¹¹⁵ However, as guidelines become more evidence-based, drugs very rarely remain the first-line treatment, especially for chronic conditions.

For example, the December 2000 issue of *Clinical Evidence* listed NSAIDs as “Likely to be Beneficial”(Second highest rating) for treatment of Chronic Low Back Pain. However, with more evidence over the years, NSAID’s rating fell to the current “Tradeoff Between Benefits and Harms,” while the benefit of “Back Exercises” now has the *highest* possible rating “Beneficial.”¹²⁴ This example is important for a number of other reasons. Chronic low back pain is one of the most common STM conditions and is nearly always treated with NSAIDs. However, NSAIDs are now only #3 rated (“Tradeoff Between Benefits and Harms.”) for at very best, *temporary symptomatic* relief of pain, which therefore must often be continued indefinitely, and also results in all the drug related dependency problems (as well as the significant morbidity and mortality) documented above.¹²⁴

In contrast, the *best possible (#1 rated) evidence-based treatment* (Back Exercises) is not only safe and effective and patient empowering, but often results in *therapeutic* benefit (Beneficially effects the course of the condition).^{95,96} *When combined with prayer, it also strengthens the patient’s personal relationship with God*, and it is God who is given the glory for self-healing (as well as endorphins) vs. drugs or their “magic” described above.

32. Drugs as used in the typical STM setting do *not* support Jesus’ teaching and holistic (Mind, Body, Spirit) approach to healing, but rather support a belief in drugs and magic. The sign on Tenwek Hospital has long stated, “We treat, Jesus heals.” The use of essential medicines in accordance with current international standards and guidelines for integrated holistic (Mind, Body, Spirit) primary care is very much in accord with the teaching and example of Jesus. In fact, we have not been able to find a better example of holistic curative care than that demonstrated by our missionary mentors in the long-term clinic or hospital setting (See especially Dr. Paul Brand¹²⁹⁻¹³¹ and Dr. Dan Fountain¹³³⁻¹³⁵).

However, as noted throughout this report, the typical STM practice setting is *far different* from the typical long-term setting. And the resulting use of drugs in the typical STM setting has absolutely no Biblical basis.

The words of Jesus are often used as a rallying call, and the reason why Christian doctors should sign up for drug-based STMs. The following are most often quoted: Mark 6:6-13, Jesus Sends Out the Twelve. Luke 10:1-17, Jesus Sends Out the Seventy-two. Matthew 28:19-20, The Great Commission.

However, a review of those Biblical passages, as well as the entire Bible, finds nothing that supports the use of drugs in the STM setting. In fact we find just the *opposite*. Though medicines had been used for healing for millennia before Christ, that is *not how Jesus instructed his followers to heal* patients on their STMs, ever. Not even in the writings of Luke the physician.

It is, rather, our pastors, evangelists and Christian colleagues in the healing prayer ministries who are actually following the STM instructions of Jesus.¹¹⁷⁻¹²³

a. Missionaries, the Bible and Scientific Evidence. Dr. Paul Brand¹²⁹⁻¹³¹, Dr. Dan Fountain¹³³⁻¹³⁵ and Stan Rowland²⁵ especially, have for many years emphasized the critical importance of the holistic healing example and teaching of Jesus. And Dr. Paul Brand¹²⁹⁻¹³¹ and Dr. Ted Lankester²⁴, especially, have emphasized the harm of our culture’s over-emphasis and dependency on drug treatment. And the scientific evidence confirming the truth of their Biblically based teaching in these areas continues to accumulate and is now overwhelming.

Missionary physician warnings concerning drugs have now been unequivocally proven, and drugs are now documented to be among the most frequent causes of death worldwide.^{1, 2, 29-35, 125} And contrary to drug industry claims, the great majority of adverse drug reactions are due to *non-preventable* causes “Most adverse reactions are the result of an exaggerated but otherwise *usual* pharmacologic effect of the drug.”¹²⁶ In addition, the IOM concludes “there are at least 1.5 million preventable adverse drug events that occur in the United States each year. The true number may be much higher.”¹²⁷

It is also important to evaluate the *effectiveness* side of the drug treatment balance from an evidence-based standpoint. Evidence-based medicine and Jesus’ ministry are based on Truth. In sharp contrast to advertising claims, evidence-based sites such as *Clinical Evidence* “The State of Our Current Knowledge” continue to report that *only 13-15%* of our *current, modern treatments* have actually been proven to be beneficial (Beneficial = Same level of effectiveness as “Back Exercises” in “Chronic Low Back Pain”).¹²⁸

There are many reasons for this, though it seems nonsensical until we review the scientific evidence for the placebo (Belief-Self-healing) effect in each of our treatments,¹¹²⁻¹¹⁶ and the thousands of case reports of healing due to belief in prayer.¹¹⁷⁻¹²³

It should also be noted that many of our pastors, evangelists and colleagues in the healing prayer ministries, by following the teaching and example of Jesus, have experienced beneficial success rates much greater than 13-15%; and *without* the harm side of the treatment balance, inherent in each and every drug.

b. Evangelism and Deception. The use of STM clinics with free or low cost drugs is often justified as a means to attract large crowds of people for evangelical purposes. And it is true that such clinics attract large crowds. We also very much agree with the importance of evangelism, and also with those who believe true supernatural healing can take place on STMs (John 14:12).

However, the above does not justify placing large numbers of patients at the unnecessary increased risk of the harmful and lethal effects of drugs in the STM setting. And when healing (supernatural as well as natural self-healing) does take place, we believe it should be done in a setting that gives appropriate credit to a loving Creator, and not scientifically proven *false* belief in drugs and drug companies. *Evangelism should not require deception.*

For example: Nearly all symptoms have a psychosomatic component. Although physicians know this, patients often do not. Because of our patient's strong belief in the power of our pills, they are very insistent that they receive them. (Long-term missionaries report that patients often put our medicines in the *same* category as witch-doctor's *magic* potions.⁹⁹)

Some STMs intentionally purchase red pills whenever possible, as many cultures view these as especially powerful. Some STM providers even boast of "Bringing people to Christ" after scientifically unexplainable apparent cures, "and all I gave him was a multivitamin." Unfortunately, unless the patient eventually becomes aware of the truth, he will likely remain dependent on purchasing pills, rather than a loving God, for his psychosomatic healing. (His eventual discovery of the deception could also do great harm to the host missionary's ministry.)

The patient's apparent healing response to this deception is not at all unusual or unexpected. Even patients who don't believe in "magic" place an extremely high value on our drugs, and many have walked for miles and/or waited for hours to obtain them. For these reasons, an inexpensive baggie of drugs brings STM patients great joy, and results in heartfelt demonstrations of appreciation for the healthcare team members.

As a result, nearly *every* STM family leaves with at least one package of pills. *And with every package of pills, we reinforce their beliefs in drugs and/or magic, and not the beliefs and example of Jesus, our Christian colleagues in the healing prayer ministries, our missionary mentors, or evidence-based medicine.*

Irrefutable scientific studies have now proven what these Christian healers have long reported, that our bodies were created by a loving God to be self-healing and that our beliefs affect that healing. This is the very *same* God-honoring, self-empowering effect Jesus repeatedly taught and emphasized 2000 years ago: "Therefore I tell you, whatever you ask for in prayer, *believe* that you have received it, and it will be yours." Mark 11:24 (Over 150 additional references to "Belief/Faith" just in Matthew-John.)¹⁴¹

As demonstrated throughout this report and in the next section, there are numerous approaches to STMs and evangelism that do not promote deception. As long emphasized by our Christian physician missionary mentors, in all of evidence-based modern medicine, it is rather the above Biblical and scientific *truths* that are most important for our patients, as well as our medical students, to understand.^{117-123, 112-115, 129-141}

33. Drugs as used in the typical STM setting also impairs the efforts of the WHO and our Christian physician missionary mentors to promote an evidence-based holistic (mind, body, spirit or Christ-centered) approach to healing.²⁴⁻²⁶

Curative care (including appropriate use of essential medicines) is needed for about 30% of our patient's healthcare problems and is very much a part of integrated holistic primary care.^{4,96} Our missionary mentors' integrated holistic approach to care has been adopted by the WHO, and its scientific validity again reconfirmed in the 2008 WHO World Health Report devoted entirely to primary care.^{4,26}

The following and numerous other Christian missionary authors offer time-tested, scientifically sound, Biblically based alternatives to the STM drug-dispensing approach to missions:^{95, 96, 129-149}

*a. Dr. Paul Brand--Long-term missionary to India. Globally recognized for contributions to leprosy research. Author of Fearfully & Wonderfully Made; In His Image; Pain-The Gift Nobody Wants.*¹²⁹⁻¹³¹:

"We in medicine need to restore our patients' confidence in the most powerful healer in the world: the human body."

"Doctors tend to exaggerate their own significance in the scheme of things..."

“The mind, not the cells of the injured (part) will determine the final extent of rehabilitation.”

“In the United States advertising further feeds the victim mentality by conditioning us to believe that staying healthy is a complicated matter far beyond the grasp of the average person.”

“A human being, unlike any machine, contains what Schweitzer called ‘the doctor within, the ability to repair itself and to affect consciously the healing process’”

b. Dr. Carl E Taylor--Long-term missionary to India and China. Co-author of WHO's Declaration of Alma Ata. Founding chair of the International Health Section of the American Public Health Association. Author of Just and Lasting Change: When Communities Own Their Futures.²⁶

“The key to better lives is not technological breakthroughs, but changing behavior at the community level. p17

“The most important health workers in the world are not physicians or surgeons, but mothers.” p29

“Outsiders and outside resources are crucial...however their role is to stimulate commitment and practical alternatives, not to do the actual work.” p33

“When officials and experts demonstrate humility, community energy becomes contagious.” p36

“Behaviors do change when, one by one, individuals and families see that a particular change is in their self-interest.” p36

“Six criteria help participants...monitor whether particular events...are positive, or will create later problems: 1.Collaboration. 2. Equity. 3. Sustainability. 4.Interdependence not dependency. 5. Holistic action. 6. Iterative action.” p41

c. Dr. Dan Fountain--Long-term missionary to Africa. Author of God, Medicine & Miracles-The Spiritual Factor in Healing; Health the Bible & the Church; Let's Build Our Lives.¹³³⁻¹³⁵

“The biomedical approach to healthcare separates physical care from psychological, social and spiritual care. The heavy investment of time and resources in physical care and technology largely precludes consideration of care for the other dimensions of human life.”

“This model is in sharp contrast to what Jesus did and to what the Bible teaches about wholeness. Furthermore, the health sciences are now recognizing the interdependence of body, mind, and spirit. Integrating medicine, pastoral care, prayer, and Christ's power to heal body, mind, and spirit will make healing of the whole person possible.”

“Putting into practice an approach to caring for the whole person requires a major paradigm shift from the biomedical compartmentalized view of human life to the biblical view of wholeness.”

“This paradigm shift is essential for health professionals who must learn new patterns of history-taking so as to include questions about the personal and social life of their patients, about emotions, feelings, and attitudes, and about their faith and spiritual activities.”¹⁴

d. Dr. Ted Lankester--Long-term missionary to India. Author of Setting Up Community Health Programs: A Practical Manual for Use in Developing Countries.²⁴

“Many health program staff spend most of their time running clinics and curing illnesses. They give health education only if there is time left over. Such an approach will never improve the health of a community...”

“Health teaching with the active involvement of the people is probably the most important of all community health activities. It must be the top of our priority list...” p.38

“One of our main tasks as community health workers is to educate the people about correct and incorrect use of medicine. If we succeed, communities will become healthy and self-reliant. If we fail, communities will become poorer, more exploited and more dependent...”

“The commonest reason why doctors over-prescribe is this: Patients expect many medicines ... If they don't receive them they seek out another doctor willing to provide them.” p327

“Unless the whole health team understands and practices the appropriate use of medicines at all times, community members will never be taught how to change their expectations.” p331

“It must be our aim to create awareness in the people so successfully that, when tempted by glossy advertisements or TV commercials promoting the latest health tonic, they refuse to buy it.”
p332

CONCLUSIONS

Because of the 33 systems problems listed above, the use of medicines in the typical STM setting, although well intentioned, is not in accordance with:

- the recommendations of our physician missionary mentors,
- the teaching and example of Jesus and his disciples,
- the teaching and example of our pastors and colleagues in the healing prayer ministries,
- evidence-based medicine, or
- Biblical and international standards and guidelines.

These systems problems place our patients at very high risk of serious harm. Even in areas where there is no or limited healthcare, this approach cannot be justified, and for the reasons listed above, may cause even greater harm.

ALTERNATIVE STM SYSTEMS

Fortunately, as described throughout this report, there are *numerous* alternative STM systems that enable us to provide high quality critically needed care, without the harm of the drug-based system.^{95,96,143,148,149,154-158} These approaches are based on the work of our missionary mentors, and are especially needed in areas where there is no, or limited healthcare. They are also far superior to the drug-based approach for enabling the local church (or missionary) to build long-term relationships in restricted access countries and with unreached people groups. These can be summarized in 3 main categories:

1. STM Evidence-based Curative Care. The very same references that condemn our use of drugs in the STM setting, also document the tremendous need for qualified physicians and pharmacists to teach safe and effective drug use to healthcare providers, as well as patients, throughout the world. So if we in STM would *simply leave our drugs at home**, we could *not only prevent the harm of our current STM drug-based approach, but also simultaneously free up the time and resources needed:*

a. to enable STMs to appropriately utilize the truly important and *far more valuable* assets of our STMs: not the drugs, but the wonderful skills and abilities of the Christian physicians, pharmacists, nurses, and other providers and educators that make up our specific STM teams, and

b. to match these up with the needs and assets of the local church and Ministry of Health to most effectively assist them in building up *their* capacity to resolve their most important health care problems. Specialty clinics to assist local providers in the management of their cardiac and other more complex patient conditions are just one area of tremendous need and opportunity.

*Note re *simply leave our drugs at home*: This review documents the tremendous harm that is done with drug-based systems in the STM setting. There are also very few areas in the world that do not have access to medicines. If we are going to supply drugs to a community, from a patient safety and ethical standpoint it needs to be:

---in accordance with international standards and practice guidelines.

---in collaboration with the Ministry of Health and local health care providers who are familiar with the use and adverse effects of the medicines.

---with our commitment to *continue this service as long as necessary* (Much unnecessary harm is done [such as lethal rebound hypertension] when patients are required to discontinue, change and re-adjust medicine dosages-- See also section 23).

Instead of reinforcing our patients' belief in drugs, why not adopt Jesus' and his disciples' approach and promote other alternatives for healing? If local healthcare is inadequate, why not actually follow the instructions of the Great Commission (Matthew 28:18-20) and *teach*?

Please see the [BPGHM](#) Pharmacovigilance and Medical Donations references for additional information. Organizations such as Christian Medical & Dental Associations [Medical Education International](#) have been providing outstanding services in this area for many years.

2. STM Primary Prevention / Health Promotion /Education and the Local Church. From an evidence-based standpoint, this is of far more importance than drug-based care, even if the drugs could be provided safely and effectively. Fortunately, there much that STMs can do to truly assist the church (in the US as well as globally) with the greater than 70% of their healthcare problems that can be resolved by primary prevention, health education and promotion.

As reported by the first director of the CMC, James McGilvray, “When Christ commissioned his disciples to heal, He was not addressing the graduating class of a healing profession. He was laying an obligation on all who would follow Him.”¹⁵⁶

Paul Brand, Carl Taylor, Dan Fountain, Ted Lankester, Stan Rowland and the Christian missionary authors included in the references offer a number of Biblically-based, now *scientifically proven*, alternatives to the typical STM drug-based approach..^{3,4,5,24-26,93-96}

3. STM Integrated Primary Care. Our missionary mentor’s *integration* of the above two approaches (Evidence-based curative care with primary prevention/health promotion/education.) has been adopted by the WHO as the foundation of healthcare for both developed and developing countries worldwide.^{3,4,145,146,154-158}

The local church is a desperately needed, highly effective, and largely unutilized healing resource in most communities.¹⁵⁴⁻¹⁵⁸ STM vision trips focusing on collaboration with the local church, Ministry of Health and local community leaders are a wonderful opportunity to implement the above process. Instead of a high risk, poor quality, drug-promoting approach, STMs can demonstrate an evidence-based, high quality, holistic (Christ-centered) approach to healing in which the local church is key.¹⁵⁴⁻¹⁵⁸

Health education resources based on Biblical and international standards and guidelines are available free for downloading in numerous languages.⁹⁶ These were specifically designed to enable integration of health promotion/prevention at all levels of the WHO healthcare pyramid (hospital, clinic and community) and to facilitate collaboration between the local church and the Ministry of Health. It is this area where the Church is most desperately needed, and it is this area where STMs can safely and effectively assist the local church in meeting its healing responsibilities for its members and its community.¹⁵⁴⁻¹⁵⁸

For example, health screening and education for the global epidemic of non-communicable diseases is desperately needed and is safely and effectively accomplished in a church-based setting. Patients requiring medical follow-up can be referred to local providers. If local curative care is suboptimal, team physicians and pharmacists can use their expertise to assist them in the best possible use of available assets. If curative care is completely unavailable, then health education and prevention are even more important and provide far more benefit to the local church and community than a few weeks supply of pills, even if there were no adverse effects.¹⁵⁴⁻¹⁵⁸

The need for integration of community health into primary care practice has also recently been stressed by the U. S. Department of Health and Human Services and the AMA, even for patients in the U.S.^{4,5} And very highly respected secular medical journals such as the *Lancet* continue to report that the very “*future of healthcare*” is dependent upon implementing this community (includes Church-based) approach.¹⁴⁷

So from a modern, scientific, evidence-based standpoint, primary care, even in the U.S., needs to return to our missionary mentors’ scientifically proven, integrated, holistic, Biblically-based approach; and their work is essential reading for all who wish to enable Christ-centered health and healing at home as well as throughout the world.^{4,5,24-26,129-131,133-135, 154-158}

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END NOTE: Request for Evidence-based Peer Review and Call for Papers.

As part of our work for Best Practices in Global Health Missions (BPGHM), we plan to continue our ongoing review of healthcare missions and international standards and practice guidelines.

We are confident that future evidence will continue to strongly support the work of our Christian missionary mentors. However, if you find any areas where you are in disagreement with this report, please send the evidence-based documentation (with references) to: arnoldgorske@gmail.com (As noted previously, opinions based on experience differ widely among physicians and organizations, and remain our lowest level of evidence. As demonstrated by this paper's references, the more our practice becomes evidence-based, the closer we come to our missionary mentors' and Jesus' holistic approach to healing. Evidence-based recommendations for improvement are, therefore, essential to high quality Christ-centered care, and are *very much* appreciated.)

We continue to very much need your help. Our greatest need is for additional papers that document resolution of the quality of care problems identified by our in-country colleagues. Our goal is to continue to provide missions with additional "best practices" solutions to those problems.

Please see the [BPGHM website](#) for information on how to submit your papers for publication. Thank very much in advance for your help,
 Arnold Gorske, MD, FAAP for Best Practices in Global Health Missions Working Group.
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