

Lifetime Health Diary™

**MEDICATION OPTIMIZATION FOR PATIENTS WITH CHRONIC DISEASE,  
COMPLEX CO-MORBIDITIES, AND MULTIPLE MEDICATIONS  
*FOR PHARMACY BENEFIT MANAGERS AND MEDICINE MANAGERS***

Lifetime Health Diary Ltd has developed an innovative tool to help manage potential long-term medication risks for patients with complex medicine regimes and multiple co-morbidities.

Expert medical opinion in New Zealand and the USA advises that our medication management tool also facilitates effective communication between health carers and patients for potentially better health outcomes and provides a communication framework facilitating continuous medicine reconciliation and cost savings.

**“Poor medication adherence leads to US\$290 billion in total annual costs or 13% of all healthcare expenditures in the USA.” (1)**

**“The Medication Therapy Management (MTM) patient uses 8.5 maintenance medications and spends \$4,000 annually on those medications, and non-adherence is an especially critical issue with this particular population.” (2).**

**“LHD Med View™ is a totally novel display, with transformational effect. Its application to patient medication regimes could significantly improve a patient’s health status through safer medicines management”**

***Professor Timothy Maling, Consultant Physician in Internal Medicine & Clinical Pharmacology & Director of postgraduate medical education and training, Capital & Coast District Health Board, New Zealand***

(1) NACDS 4/9/10 news release, citing July 2009 NEHI report  
[www.nacds.org/wmspage.cfm?parm1=6779](http://www.nacds.org/wmspage.cfm?parm1=6779)

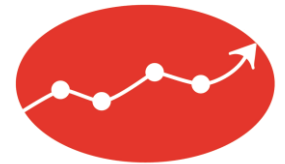
(2) Food Marketing Institute’s 2008 Food Retailing Technology Benchmarks study.



### ***HELPING TO DISCERN THE MOST EFFECTIVE THERAPIES AT THE LOWEST NET COST – AT A GLANCE***

- Close gaps in care by assisting communication with patients, pharmacists, physicians & specialists.
- Identify clinical issues of a patient graphically, including drug-drug interactions and background longitudinal factors.
- Encourage patient adherence and physician compliance, including reducing physician time required to view medication records.
- Assist in management of high-risk patients, and improving patient outcomes
- Enable the most care-and cost-effective medications to be prescribed at the outset of treatment.

- Enable real time recommendations or else flag regimes with potentially better outcome regimes for members buying online and via mail order.
- Enable personalised models of care in real time
- Demonstrate improved clinical outcomes from new therapies
- Enable comparative effectiveness studies in real time.
- Educational assistance for less experienced members of a care team.
- Provide client organisations with real time assistance in monitoring dispensing regimes costs and effectiveness.



Lifetime Health Diary™

## THE SOLUTION (1): LHD MEDVIEW™

LHD MedView™ enables care providers to quickly comprehend and optimize multiple-medication regimes in real-time at the point-of-care, also helping to prevent error and enhancing oversight by the care team. Real-time oversight by the care purchaser is also possible.

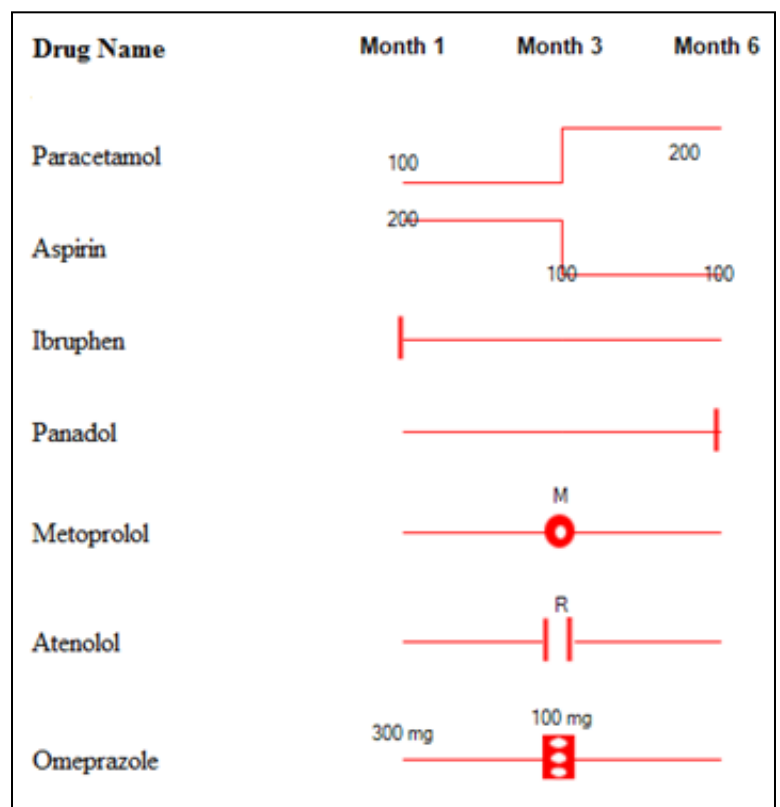
When combined with Lifetime Health Diary™ as a patient opt-in adherence tool to help capture physiology changes as well as patient self-assessment data, the care team and patients can better manage high-cost chronic conditions, with better health outcomes and efficiencies

**“LHD MedView™ combined with Lifetime Health Diary™ can help us and our patients better manage their health, increasing Medication Adherence from current 50% levels to over 90%.”**

**David Holt, Dip Clin Pharm, Co-founder of TONIQ Pharmacy Software (market leader in New Zealand) and co-owner of Carterton and Featherston Pharmacies.**

### BENEFITS:

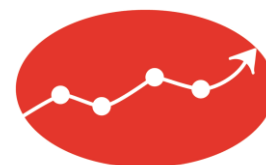
- Reduce inappropriate prescribing by physicians.
- Reduce medication errors (including Never Events).
- Improve patient adherence, health outcomes & utilization.
- Increase cost effectiveness of medication regimes.
- Provide pharmacists with an effective “Medicines Reconciliation Tool”.



**“Placing GPs, pharmacists, specialists and patients on the same page will lead to exciting new possibilities for better healthcare, both clinically and for research purposes. It will also help engage patients in their own healthcare”**

**David Mitchell, Dip Pharm, Dip Business Admin, Director of Pharmacy Partners Ltd, Community Pharmacist (Moera Pharmacy, Lower Hutt), and former Contracts Manager for the Pharmacy Guild of New Zealand.**

## LHD MEDVIEW™ CLINICAL BENEFITS



Lifetime Health Diary™

1. Already integrated into the internationally compatible New Zealand Universal List of Medicines (NZULM), it uses the ULM to provide clear and easily understood medication data for clinicians. Lifetime Health Diary Ltd is working closely with the NZULM team in Wellington to create new and important clinical linkages in the ULM data framework.

**WHY IMPORTANT?** Harness the complete ULM data set, complete with unified naming, enabling analysis of complex medication regimes.

2. Already pulling in data from TONIQ (the majority market share pharmacy software in New Zealand).

**WHY IMPORTANT?** Works with majority of pharmacies in New Zealand, in an automated data process, reducing manual inputs and harnessing pharmacy databases.

3. Shows GP, pharmacist, specialist and patient a running record of what is happening. Displays clearly medication changes, and can be aligned with patient symptomatology.

**WHY IMPORTANT?** Better health outcomes because the health professional and patient can monitor all medication changes and patient symptomatology.

4. Crucially, while the patient owns the record, medication data is populated with integrity direct from health professionals and software vendors. Thus hospitals, pharmacies, nursing homes etc. can also view the patient record, which contains a true record of medication history across healthcare settings. Facilitates secondary care processing and outcomes.

**WHY IMPORTANT?** Individualized consistent patient medication records across the continuum of each patient's care.

5. Opportunity to link patient data with / clinics / hospitals / pharmacies throughout care settings.

**WHY IMPORTANT?** A genuine Treatment Reconciliation Tool, making admissions and discharge aftercare easier for pharmacists and hospitals.

6. The long term display opens up new possibilities not practical before, since piecing together and viewing a long term medication record has been up to now been considered too much time and effort. For example, a 5 year medication data chart is now easy to view.

**WHY IMPORTANT?** Health Professionals can at last view and comprehend a patient's complete medication record quickly and efficiently.

7. LHD MedView™ provides a platform for Lifetime Health Diary Ltd and its pharmacology and pharmacy associates to create a Medication Optimization and Training Tool for clinicians and providers.

**WHY IMPORTANT?** This new Medication Optimization and Training Tool will help the entire care team to not only view and track medication regimes as per LHD MedView™ above, but also optimize medication regimes (see next page).

## THE SOLUTION (2) NEW PRODUCT EXTENSION

### MEDICATION OPTIMIZATION AND TRAINING TOOL FOR CLINICIANS AND CARE PROVIDERS

Lifetime Health Diary Ltd is now in the planning process of working with our clinical pharmacology and pharmacy partners to build on top of LHD MedView™ a “Medication Optimization and Training Tool” that will help guide prescribers and dispensers down optimal decision pathways to minimise cumulative medicines risk in patients with long term conditions.

The new tool has two prime purposes:

- 1) to optimize complex medication for patients with long term conditions and multiple co-morbidities, and
  - 2) To 'upskill' prescribers to manage effective medicines reconciliation and regular medicines reviews in community settings.
- Substantial savings can also be applied to patients on multiple medication regimes by harnessing appropriate medication optimization.
  - Our clinical pharmacology and pharmacy partners and Lifetime Health Diary Ltd are planning the creation of a medication optimization and training tool that will systematise, automate and display medication data and decision priorities in a structured way that assists care providers to manage potential medicines risks and optimize complex medication regimes in patients with long term conditions and multiple co-morbidities. The tool will also provide ongoing real time training in regular medicines review, using each patient as a training opportunity.
  - Managing potential long-term medication risks for patients with complex medicine regimes and multiple co-morbidities is an ongoing challenge for prescribers and clinical pharmacists. The Medication Optimization and Training Tool will be a package that educates, trains and guides clinicians and care providers to be able to confidently initiate regular medication reviews and optimise medication for their patients, with a focus on high risk medicines and taking account of individual social and environmental factors which may impact on medicines risk.
  - The process uses the patient's medications and co-morbidities to trigger key prescribing principles and warnings (including critical drug-drug and drug-disease interactions) in the particular patient's clinical context, to reinforce good prescribing behaviour and to support regular medicines review and optimisation of complex medication regimes.
  - The background work for this tool has already been done by both Professor Timothy Maling and Lifetime Health Diary Ltd;
  - Lifetime Health Diary Ltd is integrating into a clinical trial (Maling T. OPTIMED: A model to minimise medicines risk in patients with chronic disease. *Internal Medicine Journal* 2010, 40 (Supp 1), demonstrating a reduction in medicine dispensing costs of 35%, with an average GP compliance rate with specialist medicines review recommendations of 66%, and facilitating communication between community pharmacists, patients and their health carers. *Our product has been chosen in order to automate, make seamless and scale these benefits across the care team, in real-time. (See Clinical Trials, Appendix I).*
  - Lifetime Health Diary Ltd has developed algorithms and technology that automatically captures, sorts, analyses and displays health and medication data, allowing the reconciliation of disparate and difficult to read data records of patient medication regimes into a real-time, easily comprehended display of relevant data that will allow patient care team members (and the patient too) to better manage, reconcile, optimize and adhere to their care regime.

## APPENDIX 1: CLINICAL TRIALS



- 1) Lifetime Health Diary™ is integrating into an ongoing medicine optimization clinical trial that during a 16 month period for a New Zealand District Health Board has demonstrated reduced medicine dispensing costs of 35% for patients on more than 6 medications, with an average GP compliance rate with specialist medicines review recommendations of 66%, and facilitated communication between community pharmacies, patients and their carers in a community setting rather than relying on expensive secondary care. Lifetime Health Diary™ and LHD MedView™ have been chosen to automate, make seamless and scale these benefits across the care team, in real-time. In particular, pharmacists and pharmacologists will be able to more easily perform medicine reconciliations and observe the impact of a particular medication regime so as to mitigate the reaction of one medication over another, particularly within a multiple-medication regime.
- 2) Integration into a New Zealand clinical trial at a nursing home for the purposes of elderly patient medication monitoring via body sensors attached to biometric feedback devices. A robot-powered dispensing mechanism will be monitoring and recommending more efficient medication optimization, and Lifetime Health Diary Ltd will upload and download data to the robot portal, presenting the data in ways easier and quicker to comprehend for the care team and researchers.
- 3) Planning has begun for a clinical trial to test LHD MedView™ to clinically demonstrate efficacy of improved medication regime analysis and optimization.

## COMPANY INFORMATION AND PROFILE

Lifetime Health Diary Ltd is a product of in-depth research, observation, analysis and inspiration by the inventor Dr. Atsushi Matsunaga, physician and owner of the 700-year-old Ohkita Medical Clinic, situated in Osaka, Japan. Started in Dunedin, New Zealand, Lifetime Health Diary Ltd (NZ) was established to build out the concept envisaged by Dr. Matsunaga and extend it internationally. Co-Founder is Hamish MacDonald, a New Zealand entrepreneur.



Originally from New Zealand, Hamish MacDonald recently spent most of the last 18 years in Japan where he twice built multi-million dollar businesses in consumer marketing, both times helping to adapt US products to the Japanese market. Hamish has also owned his own Japan-entry marketing and media consultancy, before serving as CEO for an e-payments and loyalty points venture in Japan.

Hamish is a dedicated entrepreneur, with experience in both bootstrapping ventures and building out sales organizations. Hamish was inspired by Dr. Matsunaga's vision for patients and health professionals to view and analyze health data. Hamish has spent the past few years working with Dr. Matsunaga to refine the vision, build upon the core ideas, and commercialize it as a product line for global markets

**“Lifetime Health Diary™, which provides a complete lifetime health record, was awarded Second Prize as New Zealand’s best new start up business ideas by the Telecommunications Industry Group NZ at the Planet 2010 Telecommunications Conference”**

***New Zealand Herald, March 13, 2010***

**“Lifetime Health Diary™ is a big idea that has the potential to develop into a huge global business, while also answering a critical social need...With such a credible, committed owner and with substantial time and money already invested in the business, we have no doubt that Lifetime Health Diary will succeed”**

***Rob Spray, Chief Executive, Telecommunications Industry Group NZ***

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# TO VIEW LHD MEDVIEW™ FOR A “PROBLEM PATIENT”



## PLEASE GO TO THE FOLLOWING SECURE LOCATION

Go to **www.lifetimehealthdiary.net** (not .com)

- In the login box, enter <problempatient>
- In the password box, enter <problem123>
- Click on the “My Medication” tab. →

You will now see three drop down menus...

- 1) GP Data for Just One Day's Prescriptions
- 2) Same Data as through TONIQ and presented in Spreadsheet format (TONIQ is New Zealand's leading pharmacy software).
- 3) LHD MedView™ Data Extraction and Presentation

Click on each item in the menu to open or collapse the view within.

Under the “LHD MedView™ Data Extraction” tab, you will see a Time Scale dropdown menu... select any of them to instantly view the data in that time frame...

- 1) Six Months
- 2) One Year
- 3) Two Years
- 4) Five Years

It only takes seconds to now view an entire medication regime for a patient in multiple time frames – each time frame on a single page saves time and increases comprehension. Physicians, pharmacists, specialists and patients alike can find this very enlightening.

**Secondly, go to the top right tab MY HEALTH SUMMARY**, scroll down the modules to the LHD MedView™ module amongst all the regular Lifetime Health Diary™ self-assessment data. The default view displays the last 9 weeks data. (We may add longer term views for medications on this page later – although there are inherent spacing challenges in terms of displaying a lot of historical medication data on this total summary page.)

*For the first time to the knowledge of our pharmacology experts, this view gives clinicians much deeper insight by overlaying medication regimes with patient physiology (e.g. blood pressure versus medication regime change).*