Health care professionals learning online: A case study review of educational effectiveness

Volume II of II

University Department of Rural Health

University of Tasmania

Submitted in fulfilment of the requirements for the Degree of

Master of Medical Science

by

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December 2004
APPENDIX 1

GLOSSARY OF TERMS
A

Accessibility: A characteristic of technology that enables people with disabilities to use it. For example, accessible Websites can be navigated by people with visual, hearing, motor, or cognitive impairments. Accessible design also benefits people with older or slower software and hardware. See Section 508.

ADL (Advanced Distributed Learning): Initiative by the U.S. Department of Defense to achieve interoperability across computer and Internet-based learning courseware through the development of a common technical framework, which contains content in the form of reusable learning objects. See also SCORM and the ADL Website.

ADSL (Asymmetric Digital Subscriber Line): A type of DSL that uses the majority of the bandwidth to transmit information to the user and a small part of the bandwidth to receive information from the user.

AICC (Aviation Industry Computer-Based Training Committee): An international association of technology-based training professionals that develops training guidelines for the aviation industry. AICC has and is developing standards for interoperability of computer-based and computer-managed training products across multiple industries. See the AICC Website.

Amplitude: The amount of variety in a signal. Commonly thought of as the height of a wave.

Analog: A signal that's received in the same form in which it is transmitted, although the amplitude and frequency may vary.

AoD (audio on demand): See CoD.

API (application program interface): The set of tools used by a programmer to create a computer program.

Applet: A small application. See also Java applet.

Application: Computer software; also called a program. There are many types of software that fit into the category of application. Application software is distinct from other forms of software, such as operating system and utility software.
ASCII (American Standard Code for Information Interexchange): A computer code in which characters such as letters and symbols are converted into numbers that the computer can understand.

ASP (Active Server Pages): A programming environment that combines elements of HTML and scripting. Webpages built with ASP can change dynamically based on user input.

ASP (application service provider): A third-party organization that supplies software applications and/or software-related services over the Internet. ASPs allow companies to save money, time, and resources by outsourcing some or all of their information technology needs.

Assessment: The process used to systematically evaluate a learner's skill or knowledge level.

Assessment item: A question or measurable activity used to determine whether the learner has mastered a learning objective.

Asset: 1) Intellectual property. See knowledge asset. 2) Hardware and software owned by an organization.

Asynchronous learning: Learning in which interaction between instructors and students occurs intermittently with a time delay. Examples are self-paced courses taken via the Internet or CD-ROM, Q&A mentoring, online discussion groups, and email.

ATM (asynchronous transfer mode): A network technology for high-speed transfer of data. Packets of information are relayed in fixed sizes, enabling smooth transmission. ATM supports real-time voice and video as well as data and can reach speeds of up to 10 Gbps.

Audio bridge: A device used in audioconferencing that connects multiple telephone lines.

Audioconferencing: Voice-only connection of more than two sites using standard telephone lines.

Audiographics: Computer-based technology that enables simultaneous transmission of voice, data, and graphic images across local telephone lines for instructor-learner interaction.

Authoring tool: A software application or program used by trainers and instructional designers to create e-learning courseware. Types of authoring tools include instructionally focused authoring tools, Web authoring and
programming tools, template-focused authoring tools, knowledge capture systems, and text and file creation tools.

**Avatar:** In online environments, a virtual digital image representing a person. In e-learning avatars usually represent the learners. The term comes from a Sanskrit word meaning an incarnation in human form.

**B**

**Backbone:** A primary communication path connecting multiple users.

**Band:** A range of frequencies between defined upper and lower limits.

**Bandwidth:** The information carrying capacity of a communication channel.

**Baud:** A measure of data transmission speed. At low speeds, baud is equal to the bits transmitted per second (bps). At higher speeds, one baud can represent more than one bit.

**BBS (bulletin board system):** An online community run on a host computer that users can dial or log into in order to post messages on public discussion boards, send and receive email, chat with other users, and upload and download files. BBSs are text-based and often related to the specific hobbies or interests of their creators.

**Binary code:** A coding system made up of numbers expressed in base-2 notation, using only the digits 0 and 1.

**Bit:** The most basic unit of information on a computer. In accordance with binary code, each bit is designated as either a 1 or a 0; all other information stored on the computer is composed of combinations of bits.

**Blended learning:** Learning events that combine aspects of online and face-to-face instruction.

**Blog (Weblog):** An extension of the personal Website consisting of regular journal-like entries posted on a Webpage for public viewing. Blogs usually contain links to other Websites along with the thoughts, comments, and personality of the blog's creator.

**Bluetooth:** A wireless networking technology using radio waves that enables users to send data and voice signals between electronic devices over short distances.
**Bookmark:** A Webpage link stored in a browser for quick and easy retrieval.

**Bps (bits per second):** A measurement of data transmission speed in a communications system; the number of bits transmitted or received each second.

**Bridge:** A device linking two or more sections of a network.

**Broadband:** 1) In layperson's terms, high speed transmission of data. In this use, the specific speed that defines broadband is subjective; the word often implies any speed above what is commonly used at the time. 2) In technical terms, transmission over a network in which more than one signal is carried at a time. Broadband technology can transmit data, audio, and video all at once over long distances. See also narrowband.

**Broadcast:** (noun) Television or radio signals designed to reach a mass audience. (Some Websites offer original or redistributed broadcasts--see Webcast.)

(verb) 1) To transmit television or radio signals. 2) To email or fax a message to multiple recipients simultaneously; to transmit information simultaneously to everyone on a network.

**Browser:** A software application that displays World Wide Web pages originally written in the text-based HTML language in a user-friendly graphical format.

**Business requirements:** The conditions an e-learning solution should meet to align with the needs of such stakeholders as the content developer, subject matter expert, learner, manager, and training administrator.

**Byte:** A combination of 8 bits.

**Cable modem:** A modem that uses cable television's coaxial cables to transmit data at faster speeds than modems using telephone lines.

**CAI (computer-assisted instruction):** The use of a computer as a medium of instruction for tutorial, drill and practice, simulation, or games. CAI is used for both initial and remedial training, and typically does not require that a computer be connected to a network or provide links to learning resources outside of the course. See also CBT.
Case study: A scenario used to illustrate the application of a learning concept. May be either factual or hypothetical.

CBL (computer-based learning): See CBT.

CBT (computer-based training): An umbrella term for the use of computers in both instruction and management of the teaching and learning process. CAI (computer-assisted instruction) and CMI (computer-managed instruction) are included under the heading of CBT. Some people use the terms CBT and CAI interchangeably.

CD-ROM (compact disc read-only memory or compact disc read-only media): A computer storage medium similar to the audio CD that can hold more than 600 megabytes of read-only digital information.

Certification: 1) The awarding of a credential acknowledging that an individual has demonstrated proof of a minimum level of knowledge or competence, as defined by a professional standards organization. Professional certification can be used as a screening tool and verification of an individual's skills and knowledge. 2) Program that evaluates products or tools according to predetermined criteria, such as ASTD's E-Learning Courseware Certification (eCC).

Chat: Real-time text-based communication in a virtual environment. Chat can be used in e-learning for student questions, instructor feedback, or even group discussion.

Chat room: A virtual meeting space on the Internet, an intranet, or other network, used for real-time text discussions. Unlike one-to-one instant messenger applications, chat rooms enable conversations among multiple people at once.

Chunk: (noun) A discrete portion of content, often consisting of several learning objects grouped together. (verb) To separate content into discrete portions or aggregate smaller content elements into customized configurations.

CLO (Chief Learning Officer): The executive with primary responsibility for strategic human capital development. The CLO ensures that all learning investments focus on accomplishing the organization's mission, strategy, and goals; provides a single point of accountability for those investments; develops the corporate learning strategy; creates a culture of continuous learning; fosters communities of practice; integrates training functions; drives cultural transformation; and measures the impact on organizational performance. The CLO increasingly reports to either the CEO or senior vice president of HR. He or she is to learning what the CFO and CIO are to finance and information technology.
Classroom training: See instructor-led training.

C-learning: See instructor-led training.

CMI (computer-managed instruction): The use of computer technology to oversee the learning process, including testing and record keeping.

CMS (content management system): A centralized software application or set of applications that facilitates and streamlines the process of designing, testing, approving, and posting e-learning content, usually on Webpages.

Coaching: A process in which a more experienced person, the coach, provides a worker or workers with constructive advice and feedback with the goal of improving performance. (See also mentoring, which focuses on career development and advancement)

CoD (Content on demand): Delivery of an offering, packaged in a media format, anywhere, anytime via a network. Variants include audio on demand (AoD) and video on demand (VoD).

Codec (coder/decoder): Device used to convert analog signals to digital signals for transmission, and to reconvernt signals upon reception at the remote site, while allowing for the signal to be compressed for less expensive transmission.

Collaboration technology: Software, platforms, or services that enable people at different locations to communicate and work with each other in a secure, self-contained environment. May include capabilities for document management, application sharing, presentation development and delivery, whiteboarding, chat, and more.

Common carrier: A government-regulated private company that furnishes the public with telecommunications services (for example, phone companies).

Community: See online community.

Competency management: A system used to evaluate skills, knowledge, and performance within an organization; spot gaps; and introduce training, compensation, and recruiting programs based on current or future needs.

Compliant (standards-compliant): E-learning that meets established standards of, and has received official approval from, an accrediting organization. See also conformant.
Compressed file: A computer file that has been reduced in size by a compression software program. The user must decompress these files before they can be viewed or used.

Compressed video: Video signals downsized to allow travel along a smaller carrier.

Conformant (standards-conformant): E-learning that meets the standards of an accrediting organization but that has not gone through the formal application process to be deemed compliant.

Connect time: The amount of time that a terminal or computer has been logged on to a computer or server for a particular session.

Content: Information captured digitally and imparted to learners. Formats for e-learning content include text, audio, video, animation, simulation, and more.

Convergence: A result of the digital era in which various types of digital information, such as text, audio, and video, and their delivery mechanisms—television, telecommunications, and consumer electronics—are combined together in new integrated forms. WebTV is an example of convergence between televisions and computer technology.

Cookie: Information stored on a user's computer after he or she visits a Website. The cookie tracks data about that user but can be disabled in the browser.

Corporate university: A learning organization with a governance system that aligns all learning with the corporate or agency mission, strategy, and goals. The governance system typically includes a governing board consisting of the CEO and other senior executives and a chief learning officer (CLO) who has overall responsibility for managing the organization's investment in learning. CEOs of best-practice learning organizations leverage their corporate university to achieve performance goals, drive cultural transformation, reform and integrate training departments, and establish and sustain competitive advantage through learning.

Courseware: Any type of instructional or educational course delivered via a software program or over the Internet.

CPU (central processing unit): The part of the computer that contains the microprocessor, power supply, hard drive, and disk drives.

CRM (customer relationship management): Methodologies, software, and Internet capabilities that help a company identify and categorize customers and manage relationships with them.
CSS (cascading style sheets): An HTML feature that enables Webpage developers and users to specify the way a Webpage appears when displayed in a browser, by applying a number of different style sheets to the page. Each style sheet controls a different design element or set of design elements.

Customer-focused e-learning: Technology-based learning programs offered by a company and targeted at their current and prospective customers. The intent is to increase brand loyalty among existing customers and attract new business.

Cyberspace: The nebulous "place" where humans interact over computer networks; term coined by William Gibson in *Neuromancer*.

D

De facto standard: An e-learning specification that hasn't been officially established by an accrediting agency but that is accepted and used as a standard by a majority of practitioners.

Default: A setting that the computer system uses automatically, unless it is changed by the user.

Delivery: Any method of transferring content to learners, including instructor-led training, Web-based training, CD-ROM, books, and more.

Desktop videoconferencing: Videoconferencing on a personal computer.

Development: 1) Learning or other types of activities that prepare a person for additional job responsibilities and/or enable him to gain knowledge or skills. 2) The creation of training materials or courses, as in content development or e-learning development.

Dial up: To open a connection between a user's computer and another computer via a modem.

Digital: An electrical signal that varies in discrete steps in voltage, frequency, amplitude, locations, and so forth. Digital signals can be transmitted faster and more accurately than analog signals.

Digital Divide: The gap that exists between those who can afford technology and those who cannot.
Discussion boards: Forums on the Internet or an intranet where users can post messages for others to read.

Disc/Disk: See floppy disk or CD-ROM.

Disk drive: The part of a computer that reads and writes data onto either a floppy disk, a hard disk, or an optical disk (CD, CD-ROM, DVD, DVD-ROM, WORM, and so forth).

Distance education: Educational situation in which the instructor and students are separated by time, location, or both. Education or training courses are delivered to remote locations via synchronous or asynchronous means of instruction, including written correspondence, text, graphics, audio- and videotape, CD-ROM, online learning, audio- and videoconferencing, interactive TV, and FAX. Distance education does not preclude the use of the traditional classroom. The definition of distance education is broader than and entails the definition of e-learning.

Distance learning: The desired outcome of distance education. The two terms are often used interchangeably.

Download: (noun) A file that's transferred or copied to a user's computer from another connected individual computer, a computer network, a commercial online service, or the Internet. (verb) To transfer or copy a file to a user's computer from another connected individual computer, a computer network, a commercial online service, or the Internet.

DS (Digital Signal): The rate and format of a digital signal, for example, DS-1 or DS-3. Often used synonymously with T, as in T1 or T3, although the T technically refers to the type of equipment. See T1 and T3.

DSL (digital subscriber line): A broadband Internet access method that sends data over standard phone lines at speeds up to 7 Mbps. DSL is available to subscribers who live within a certain distance of the necessary router.

DVD (digital versatile disc): Optical disks that are the same size as CDs but are double-sided and have larger storage capacities.

DVI (digital video interactive): A format for recording digital video onto compact disk, allowing for compression and full-motion video.
Echo cancellation: The process of eliminating the acoustic echo in a videoconferencing room.

E-learning (electronic learning): Term covering a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, CD-ROM, and more.

Email (electronic mail): Messages sent from one computer user to another.

Email list: A form of one-to-many communication using email; a software program for automating mailing lists and discussion groups on a computer network.

End-to-end solution: A marketing term used by large e-learning suppliers; meant to imply that their products and services will handle all aspects of e-learning.

End user: The person for whom a particular technology is designed; the individual who uses the technology for its designated purpose. In e-learning, the end user is usually the student.

Enterprise-wide e-learning: E-learning that's intended for all or most employees within a company. It's often part of a strategic change of direction with a very short timeline, but is also used to support a core process such as sales.

EPSS (electronic performance support system): 1) A computer application that's linked directly to another application to train or guide workers through completing a task in the target application. 2) More generally, a computer or other device that gives workers information or resources to help them accomplish a task or achieve performance requirements.

Ergonomics: Design principles relating to the comfort, efficiency, and safety of users.

ERP (enterprise resource planning): A set of activities supported by application software that helps a company manage such core parts of its business as product planning, parts purchasing, inventory management, order tracking, and customer service. Can also include modules for finance and HR activities. The deployment of an ERP system can involve considerable business process analysis, employee retraining, and new work procedures.
**Ethernet**: A type of local area network, originally developed at Xerox, in which computers communicate through radio frequency signals sent over coaxial cable.

**E-training**: See TBT.

**Evaluation**: Any systematic method for gathering information about the impact and effectiveness of a learning offering. Results of the measurements can be used to improve the offering, determine whether the learning objectives have been achieved, and assess the value of the offering to the organization.

**Extensibility**: The ability to expand and adapt an e-learning application or infrastructure by adding features, components, or services to a core set of capabilities.

**Extranet**: A local-area network (LAN) or wide-area network (WAN) using TCP/IP, HTML, SMTP, and other open Internet-based standards to transport information. An extranet is only available to people inside and certain people outside an organization, as determined by the organization.

**F2F (face-to-face)**: Term used to describe the traditional classroom environment. Also see ILT.

**Facilitative tools**: Electronic features used to deliver online courses. Examples include mailing lists, chat programs, streaming audio, streaming video, and Webpages.

**Facilitator**: The online course instructor who aids learning in the online, student-centered environment.

**False-starter**: A person who registers for but does not complete an e-learning course.

**FAQ (frequently asked questions)**: An informational list, in question and answer format, of common inquiries from users about a topic or application and standard responses. FAQs appear on Websites and discussion boards and within desktop applications.

**Fax (facsimile)**: (noun) The print-out of information transmitted via text and/or graphic images over standard telephone lines. (verb) To transmit information via text and/or graphic images over standard telephone lines.
Feedback: Communication between the instructor or system and the learner resulting from an action or process.

Fiber-optic cable: Glass fiber used for laser transmission of video, audio, and/or data. Fiber-optic cable has a much greater bandwidth capacity than conventional cable or copper wire.

File server: A computer on a network with the primary task of storing files that can be shared by network users.

Firewall: A technology that gives users access to the Internet while retaining internal network security.

FireWire: Apple Computer's trademarked name for its high-speed serial bus supporting the IEEE 1394 data transfer standard. FireWire enables the connection of up to 63 devices and transfers data at a speed of up to 400 mbps.

Flash: Software by Macromedia that enables designers to use simple vector graphics to create computer animations, which can be viewed by any browser with the correct plug-in.

Floppy disk (floppy diskette): A data storage medium used with a personal computer. Current floppy disks can store up to 1.44 MB of data and are usually 3 1/2 inches in size. Older floppy disks were 5 and 1/4 inches. Also spelled as floppy disc.

Footprint: 1) The regions to which a communications satellite can transmit. 2) The floor or desk surface space occupied by a piece of computer equipment.

Frequency: The space between waves in a signal; the amount of time between waves passing a stationary point.

FTP (File Transfer Protocol): A protocol that enables a user to move files from a distant computer to a local computer using a network like the Internet.

Full-motion video: A signal that allows the transmission of the complete action taking place at the origination site.

Fully interactive video (two-way interactive video): Two sites interacting with audio and video as if they were colocated.
GB (gigabyte): Just over one billion bytes. 1,000 megabytes.

GIF (Graphics Interchange Format): The file format developed by CompuServe to store images. GIFs support 256 colors and are often used for Web images because they compress well.

Globalization: 1) The tailoring of an offering to include clear, grammatically correct text that eliminates slang, gender references, and cultural or generational idioms. 2) The process of deploying a single system worldwide that meets a variety of needs. 3) Integrating several working systems into one.

Granularity: The degree of detail something can be broken down into, or the number of discrete components making up any type of system. In e-learning, granularity is defined by the number of content chunks.

Grok: To reach total understanding of a subject. From Robert Heinlein's *Stranger in a Strange Land*.

GUI (Graphical User Interface): A computer interface using icons or pictures. For example, Windows.

H

Hard disk: A computer's main data storage component, usually housed within the CPU. Hard disks generally hold more data and can be read faster than floppy disks.

Hard drive: A disk drive that reads a computer's hard disk.

Hard skills: Technical skills. See also soft skills.

HDTV (High-definition TV): A television signal that has over five times the resolution of standard television and requires extraordinary bandwidth.

Homepage: A document that has an address (URL) on the World Wide Web, is maintained by a person or an organization, and contains pointers to other pieces of information.

Host: (noun) A computer connected to a network. (verb) To store and manage another company's technology and/or content on your own servers.

HRD (Human Resource Development): 1) A term coined by Leonard Nadler to describe the organized learning experiences, such as training, education, and development, offered by employers within a specific timeframe to improve
employee performance or personal growth. 2) Another name for the field and profession sometimes called training or training and development.

**HTML (Hypertext Markup Language):** The programming language used to create documents for display on the World Wide Web.

**HTTP (Hypertext Transfer Protocol):** The set of rules and standards that govern how information is transmitted on the World Wide Web.

**Hub:** A network device that connects communication lines together.

**Hypermedia:** Applications or documents that contain dynamic links to other media, such as audio, video, or graphics files.

**Hypertext:** A system for retrieving information from servers on the Internet using World Wide Web client software. Hypertext consists of key words or phrases in a WWW page that are linked electronically to other Webpages.

**IEEE (The Institute of Electrical and Electronics Engineers):** An organization whose Learning Technology Standards Committee is working to develop technical standards, recommended practices, and guides for computer implementations of education and training systems.

**ILS (Integrated Learning System):** A complete software, hardware, and network system used for instruction. In addition to providing curriculum and lessons organized by level, an ILS usually includes a number of tools such as assessments, record keeping, report writing, and user information files that help to identify learning needs, monitor progress, and maintain student records.

**ILT (Instructor-led Training):** Usually refers to traditional classroom training, in which an instructor teaches a course to a room of learners. The term is used synonymously with on-site training and classroom training (c-learning).

**IMS (Instructional Management System) Global Learning Consortium:** Coalition of government organizations dedicated to defining and distributing open architecture interoperability specifications for e-learning products. See the IMS Website.

**Information Architecture:** A description or design specification for how information should be treated and organized. In Web design, the term describes
the organization of online content into categories and the creation of an interface for displaying those categories.

**Infrastructure:** The underlying mechanism or framework of a system. In e-learning, the infrastructure includes the means by which voice, video, and data can be transferred from one site to another and be processed.

**Instant messenger (IM):** Software that lists users' selected "buddies" (friends, family, co-workers, and so forth) who are online and enables users to send short text messages back and forth to them. Some instant messenger programs also include voice chat, file transfer, and other applications.

**Instructional designer (ID):** An individual who applies a systematic methodology based on instructional theory to create content for learning.

**Integration:** Combining hardware, software (and, in e-learning, content) components together to work as an interoperable system. The process of integration may also include front-end planning and strategy.

**Intellectual property:** An idea, invention, formula, literary work, presentation, or other knowledge asset owned by an organization or individual. Intellectual property can be protected by patents, trademarks, service marks, and/or copyrights.

**Interactive media:** Allows for a two-way interaction or exchange of information.

**Internet:** An international network first used to connect education and research networks, begun by the US government. The Internet now provides communication and application services to an international base of businesses, consumers, educational institutions, governments, and research organizations.

**Internet-based training:** Training delivered primarily by TCP/IP network technologies such as email, newsgroups, proprietary applications, and so forth. Although the term is often used synonymously with Web-based training, Internet-based training is not necessarily delivered over the World Wide Web, and may not use the HTTP and HTML technologies that make Web-based training possible.

**Internet Explorer:** Browser software that enables users to view Webpages.

**Interoperability:** The ability of hardware or software components to work together effectively.
Intranet: A LAN or WAN that's owned by a company and is only accessible to people working internally. It is protected from outside intrusion by a combination of firewalls and other security measures.

IP (Internet Protocol): The international standard for addressing and sending data via the Internet.

IP multicast: Using the Internet Protocol, delivery of a learning event over a network from a single source to multiple participants.

ISDN (Integrated Services Digital Network): A telecommunications standard enabling communications channels to carry voice, video, and data simultaneously.

ISO (International Organization for Standardization): An international federation of national standards bodies. See the ISO Website.

ISP (Internet service provider): A hosting company that provides end user access to such Internet services as email, the World Wide Web, FTP, newsgroups, and so forth.

IT (information technology): The industry or discipline involving the collection, dissemination, and management of data, typically through the use of computers.

ITFS (Instructional Television Fixed Service): Microwave-based, high-frequency television used in educational program delivery.

IT training: A combination of desktop training and information systems and technical training. Includes training in areas such as system infrastructure software, application software, and application development tools.

Java: An object-oriented programming language developed by Sun Microsystems. Java isn't dependent on specific hardware and can be launched from within an HTML document or stand-alone.

Java applet: A small Java program launched through a browser.

JavaScript: A scripting language that's simpler than Java and can add interactivity to Webpages. JavaScript commands allow tasks to be completed
by the Web browser when a user views a Webpage. (For example, making a graphic change when a user moves the cursor over it.)

**JDBC (Java Database Connectivity):** An application program interface used to connect programs written in Java to the data in databases.

**Job aid:** Any simple tool that helps a worker do his or her job (for example, a flow chart to follow when answering a customer service call). Job aids generally provide quick reference information rather than in-depth training.

**JPEG (Joint Photographic Experts Group):** 1) A format for image compression that enables the user to weigh image quality against file size. JPEG is a lossy compression method, meaning that when the image is compressed, the file is made smaller by discarding some of its information. The more the file is compressed, the more information is discarded, and the more the image quality is degraded. 2) The subgroup of the International Organization for Standardization responsible for setting the standards for the image file format that bears its name.

**Just-in-time:** Characteristic of e-learning in which learners are able to access the information they need exactly when they need it.

**K**

**KB (kilobyte):** 1,024 bytes.

**Kbps (Kilobits per second):** Measurement of data transmission speed in a communication system. The number of kilobits transmitted or received each second.

**KMS (knowledge management system):** See knowledge management.

**Knowledge asset:** Intellectual content possessed by an organization. Any piece of information that a worker at a company knows, from customer names to how to fix a piece of machinery, can be considered a knowledge asset. Assets can be codified in a variety of formats, such as PowerPoint slides, Word documents, audio and video files, and so forth.

**Knowledge base:** A specialized database that stores knowledge assets.

**Knowledge management:** The process of capturing, organizing, and storing information and experiences of workers and groups within an organization and making it available to others. By collecting those artifacts in a central or
distributed electronic environment (often in a database called a knowledge base), KM aims to help a company gain competitive advantage.

**LAN (local-area network):** A group of personal computers and/or other devices, such as printers or servers, that are located in a relatively limited area, such as an office, and can communicate and share information with each other.

**LCMS (learning content management system):** A software application (or set of applications) that manages the creation, storage, use, and reuse of learning content. LCMSs often store content in granular forms such as learning objects.

**Learning:** A cognitive and/or physical process in which a person assimilates information and temporarily or permanently acquires or improves skills, knowledge, behaviors, and/or attitudes.

**Learning environment:** The physical or virtual setting in which learning takes place.

**Learning object:** A reusable, media-independent collection of information used as a modular building block for e-learning content. Learning objects are most effective when organized by a meta data classification system and stored in a data repository such as an LCMS.

**Learning objective:** A statement establishing a measurable behavioral outcome, used as an advanced organizer to indicate how the learner's acquisition of skills and knowledge is being measured.

**Learning platforms:** Internal or external sites often organized around tightly focused topics, which contain technologies (ranging from chat rooms to groupware) that enable users to submit and retrieve information.

**Learning portal:** Any Website that offers learners or organizations consolidated access to learning and training resources from multiple sources. Operators of learning portals are also called content aggregators, distributors, or hosts.

**Learning solution:** 1) Any combination of technology and methodology that delivers learning. 2) Software and/or hardware products that suppliers tout as answers to businesses' training needs.
**Learning space:** An imaginary geography in which the learning enterprise flourishes. Mapped by market analysts and mined by consultants, this territory is a recent annexation to the business landscape.

**Link:** The result of HTML markup signifying to a browser that data within a document will automatically connect with either nested data or an outside source. Used in the design of hypertext.

**LISTSERV:** Email list management software developed by L-Soft International. See also email list.

**LMS (learning management system):** Software that automates the administration of training. The LMS registers users, tracks courses in a catalog, records data from learners; and provides reports to management. An LMS is typically designed to handle courses by multiple publishers and providers. It usually doesn't include its own authoring capabilities; instead, it focuses on managing courses created by a variety of other sources.

**Localization:** The tailoring of an offering to meet the specific needs of a geographic area, product, or target audience.

**Log in/Log on:** To establish a connection over a network or modem with a remote computer to retrieve or exchange information.

**Log off:** To terminate a connection to a computer or network.

**LRN:** Microsoft's Learning Resource Interchange, a format that gives content creators a standard way to identify, share, update, and create online content and courseware. LRN is the first commercial application of the IMS Content Packaging Specification.

**LSP (learning service provider):** A specialized ASP offering learning management and training delivery software on a hosted or rental basis.

**Lurking:** Reading the postings in a discussion forum or on a listserv but not contributing to the discussion.

**M**

**M-learning (mobile learning):** Learning that takes place via such wireless devices as cell phones, personal digital assistants (PDAs), or laptop computers.
**Markup:** Text or codes added to a document to convey information about it. Usually used to formulate a document's layout or create links to other documents or information servers. HTML is a common form of markup.

**MB (megabyte):** 1,048,576 bytes, often generically applied to 1,000,000 bytes as well.

**Mbps (megabits per second):** A measurement of data transmission speed in a communication system; the number of megabits transmitted or received each second.

**Mentoring:** A career development process in which less experienced workers are matched with more experienced colleagues for guidance. Mentoring can occur either through formal programs or informally as required and may be delivered in-person or by using various media.

**Meta data:** Information about content that enables it to be stored in and retrieved from a database.

**Metatag:** An HTML tag identifying the contents of a Website. Information commonly found in the metatag includes copyright info, key words for search engines, and formatting descriptions of the page.

**Microwave:** Electromagnetic waves that travel in a straight line and are used to and from satellites and for short distances up to 30 miles.

**Modem:** A device that enables computers to interact with each other via telephone lines by converting digital signals to analog for transmitting and back to digital for receiving.

**Modular:** E-learning that's made up of standardized units that can be separated from each other and rearranged or reused.

**MOO (MUD, object oriented):** A MUD created with an object-oriented programming language.

**MPEG (Moving Picture Experts Group):** 1) A high-quality video file format that uses compression to keep file sizes relatively small. 2) The subgroup of the International Organization for Standardization responsible for setting the standards for this format.

**MP3:** A format for music file compression that enables users to download music over the Internet.

**MUD (multi-user dimension or multi-user domain):** A simulated virtual world in which users interact with each other, often by taking on character
identities called avatars. Originally created for game-playing, MUDs are growing in popularity for online learning and virtual community-building.

**Multicasting:** The transmission of information to more than one recipient. For example, sending an email message to a list of people. Teleconferencing and videoconferencing can also use multicasting. See also broadcasting and unicasting.

**Multimedia:** Encompasses interactive text, images, sound, and color. Multimedia can be anything from a simple PowerPoint slide slow to a complex interactive simulation.

**N**

**Narrowband:** 1) In data transmission, a limited range of frequencies. 2) More specifically, a network in which data transmission speeds range from 50 Bps to 64 Kbps. See also broadband.

**Navigation:** 1) Moving from Webpage to Webpage on the World Wide Web. 2) Moving through the pages of an online site that may not be part of the WWW, including an intranet site or an online course.

**Nesting:** Placing documents within other documents. Allows a user to access material in a nonlinear fashion, the primary requirement for developing hypertext.

**Net:** Common nickname for the Internet.

**Netiquette:** Online manners. The rules of conduct for online or Internet users.

**Netscape Navigator:** Browser software that enables users to view Webpages.

**Network:** Two or more computers that are connected so users can share files and devices (for example, printers, servers, and storage devices).

**Newsgroup:** An online discussion hosted on the Usenet network. Sometimes also called a forum.

**O**
Object-oriented programming: A type of computer programming that allows programmers to define the following as objects: data types, data structures, and the functions or operations that are to be applied to the objects. Object-oriented programming languages include Java, Smalltalk, and C++.

ODBC (Open Database Connectivity): An application program interface to access information from numerous types of databases, including Access, dbase, DB2, and so forth.

Online: The state in which a computer is connected to another computer or server via a network. A computer communicating with another computer.

Online community: A meeting place on the Internet for people who share common interests and needs. Online communities can be open to all or be by membership only and may or may not be moderated.

Online learning: Learning delivered by Web-based or Internet-based technologies. See Web-based training and Internet-based training.

Online training: Web- or Internet-based training.

Open source software: 1) Generally, software for which the original program instructions, the source code, is made available so that users can access, modify, and redistribute it. The Linux operating system is an example of open source software. 2) Software that meets each of nine requirements listed by the non-profit Open Source Initiative in its Open Source Definition.

Origination site: The location from which a teleconference originates.

Packet: A bundle of data transmitted over a network. Packets have no set size; they can range from one character to hundreds of characters.

Page turner: A derogatory term for e-learning that offers little to no graphics or interaction, instead comprising mainly pages of text.

PDA (personal digital assistant): Handheld computer device used to organize personal information such as contacts, schedules, and so forth. Data can usually be transferred to a desktop computer by cable or wireless transmission.

PDF (portable document format): File format developed by Adobe Systems to enable users of any hardware or software platform to view documents.
exactly as they were created—with fonts, images, links, and layouts as they were originally designed.

**Peer-to-peer network (P2P):** A communications network that enables users to connect their computers and share files directly with other users, without having to go through a centralized server. *Groove* is an example of an application that runs on a peer-to-peer network.

**Personalization:** Tailoring Web content to an individual user. Can be accomplished by a user entering preferences or by a computer guessing about the user's preferences.

**Pixel (Picture Element):** Tiny dots that make up a computer image. The more pixels a computer monitor can display, the better the image resolution and quality. On a color monitor, every pixel is composed of a red, a green, and a blue dot that are small enough to appear as a single entity.

**Plug-and-play:** The ability of a personal computer's operating system to recognize and install—with little to no intervention by the user—new peripheral devices that are added to the computer. Also spelled plug-n-play or plug 'n' play.

**Plugfest:** A biannual event sponsored by the Advanced Distributed Learning Network that brings together early adopters of the SCORM specifications to validate and document their process in meeting requirements for reuse, adaptability, interoperability, cost-effectiveness, and global access.

**Plug-in:** An accessory program that adds capabilities to the main program. Used on Webpages to display multimedia content.

**PNG (Portable Network Graphics):** The patent-free graphics compression format developed by Macromedia expected to replace GIF. PNG offers advanced graphics features such as 48-bit color.

**Point-to-multipoint:** Transmission between multiple locations using a bridge.

**Point-to-point:** Transmission between two locations.

**POP (Post Office Protocol):** The set of rules and standards that govern the retrieval of email messages from a mail server.

**Portal:** A Website that acts as a doorway to the Internet or a portion of the Internet, targeted towards one particular subject. Also see learning portal.

**Post:** To place a message in a public message forum. Also, to place an HTML page on the World Wide Web.
**Power users**: Advanced, sophisticated users of technology (usually a computer application or an operating system) who know more than just the basics needed to operate it.

**PPP**: A software package that enables a user to connect directly to the Internet over a telephone line.

**Practice item**: 1) A question or learning activity that serves as an informal validation and reinforcement of instruction. 2) A sample question that precedes a test, designed to ensure that the learner understands the mechanics of the testing system.

**Practices**: A set of methods or procedures to be followed, as in *best practices* or *standard practices*. In e-learning, the methods used to communicate the content to the learner.

**Prescriptive learning**: A process in which only coursework that matches a learner's identified skill and knowledge gaps is offered to him or her, with the goal of making the learning experience more meaningful, efficient, and cost-effective.

**Program**: See application.

**Projection system**: A device for showing video, television, or computer images on a large screen.

**Protocol**: A formal set of standards, rules, or formats for exchanging data that assures uniformity between computers and applications.

**Pull technology**: In reference to the Internet or other online services, the technology whereby people use software such as a Web browser to locate and "pull down" information for themselves. See also push technology.

**Push technology**: In reference to the Internet or other online services, the technology whereby information is sent directly to a user's computer. See also pull technology.

**RAM (random-access memory)**: Temporary storage built into a computer system that functions as a "workspace" for data and program instructions.
Raster graphic: A computer image made up of a collection of dots. Can become ragged or otherwise distorted when the image is enlarged or shrunk. See also vector graphic.

Real-time communication: Communication in which information is received at (or nearly at) the instant it's sent. Real-time communication is a characteristic of synchronous learning.

Receive site: A location that can receive transmissions from another site for distance learning.

Repurpose: To reuse content by revising or restructuring it for a different purpose than it was originally intended or in a different way.

Resolution: The clarity of the image on the video display screen.

Reusable: E-learning content that can be transferred to various infrastructures or delivery mechanisms, usually without changes.

RFID (radio frequency identification): A wireless information-transmission technology set to take the place of bar codes. A tag is placed on the object and then read by an antenna and transceiver. The object does not need to be in the same line of sight as the transceiver, as products with bar codes do, and the transceiver can function over greater distances than bar code readers.

RFP (request for proposal): A document produced by a company seeking goods or services and distributed to prospective suppliers. Suppliers then provide proposals based on the criteria specified within the RFP.

RIO (reusable information object): A collection of content, practice, and assessment items assembled around a single learning objective. RIOs are built from templates based on whether the goal is to communicate a concept, fact, process, principle, or procedure. (Pronounced "REE-O")

RLO (reusable learning object): A collection of RIOs, overview, summary, and assessments that supports a specific learning objective. (Pronounced "R-L-O")

ROI (return on investment): Generally, a ratio of the benefit or profit received from a given investment to the cost of the investment itself. In e-learning, ROI is most often calculated by comparing the tangible results of training (for example, an increase in units produced or a decrease in error rate) to the cost of providing the training.

Role play: (noun) A training technique in which learners act out characters in order to try out behaviors, practice interactions, communicate for a desired
outcome, and/or solve a dynamic problem. Role plays can reinforce learning and help people apply new information, skills, and techniques. (verb) To participate in a role play.

Satellite TV: Video and audio signals relayed via a communication device that orbits around the earth.

Scalability: The degree to which a computer application or component can be expanded in size, volume, or number of users served and continue to function properly.

Scanner: A device that converts a printed page or image into an digital representation that can be viewed and manipulated on a computer.

Schema: 1) A relatively simple textual description or representation of the internal structure of a database, including table names, element names, and relationships between elements. 2) One of several new entities that define the structure and content parameters for XML documents.

SCORM (Sharable Content Object Reference Model): A set of specifications that, when applied to course content, produces small, reusable learning objects. A result of the Department of Defense's Advance Distributed Learning (ADL) initiative, SCORM-compliant courseware elements can be easily merged with other compliant elements to produce a highly modular repository of training materials.

Screen reader: Computer software that speaks text on the screen. Often used by individuals who are visually impaired.

Screenshot: A picture of a computer display that shows the display at a given point in time. Also called a screen capture. Annotated screenshots are often used in software manuals and training programs.

Script: A program or set of instructions not carried out by the computer processor but by another program. Code is interpreted at run time rather than being stored in executable format.

Scripting language: See Script.

Scroll: To move text and images on a computer screen in a constant direction--down, up, right, or left.
**Section 508:** The section of the 1998 Rehabilitation Act that states that all electronic and information technology procured, used, or developed by the federal government after June 25, 2001, must be accessible to people with disabilities. Affected technology includes hardware such as copiers, fax machines, telephones, and other electronic devices as well as application software and Websites. See [http://www.section508.gov/](http://www.section508.gov/).

**Seamless technology:** Technology that's easy to use, intuitive in nature, and isn't the focus of the learning experience. Also called transparent technology.

**Self-assessment:** The process by which the learner determines his or her personal level of knowledge and skills.

**Self-paced learning:** An offering in which the learner determines the pace and timing of content delivery.

**The Semantic Web:** A concept proposed by World Wide Web inventor Tim Berners-Lee. States that the Web can be made more useful by using methods such as content tags to enable computers to understand what they're displaying and to communicate effectively with each other. That, says Berners-Lee, will increase users' ability to find the information they see.

**Serial bus:** A channel through which information flows, one bit at a time, between two or more devices in or connected to a computer. A bus typically has multiple points of access through which devices can attach to it.

**Serial port:** A connection point for peripheral devices to be attached to a computer, through which data transmission occurs one bit at a time.

**Server:** A computer with a special service function on a network, generally to receive and connect incoming information traffic.

**Simulations:** Highly interactive applications that allow the learner to model or role-play in a scenario. Simulations enable the learner to practice skills or behaviors in a risk-free environment.

**Skill gap analysis:** Compares a person's skills to the skills required for the job to which they have been, or will be, assigned. A simple skill gap analysis consists of a list of skills required along with a rating of the employee's level for each skill. Ratings below a predetermined level identify a skill gap.

**Skills inventory:** A list of skills or competencies that an individual possess, usually created by self-evaluation.
SLIP (Serial Line Internet Protocol): A means of allowing a user to connect to the Internet directly over a high-speed modem. Also see PPP. SLIP is older and used less frequently than PPP.

Slow scan converter: A transmitter or receiver of still video over narrowband channels. In real time, camera subjects must remain still for highest resolution.

SME (subject matter expert): An individual who is recognized as having proficient knowledge about and skills in a particular topic or subject area.

Soft skills: Business skills such as communication and presentation, leadership and management, human resources, sales and marketing, professional development, project and time management, customer service, team building, administration, accounting and finance, purchasing, and personal development.

Software: A set of instructions that tell a computer what to do; a program.

Source code: Program instructions written by a software developer and later translated (usually by a compiler) into machine language that a computer can understand.

Spam: (noun) Junk email that is sent, unsolicited and in bulk, to advertise products or services or publicize a message. The term may have originated from a Monty Python song. (verb) To send unsolicited bulk email to advertise products or services or publicize a message.

Specification: A plan, instruction, or protocol for e-learning that's established or agreed upon. Specification is often used interchangeably with standard, but the two terms are not truly synonymous. Specifications become standards only after they've been approved by an accrediting agency.

SQL: Language for accessing information in a database and updating entries.

Stakeholder: A person with a vested interest in the successful completion of a project. Stakeholders in e-learning often include the developer, the facilitator, the learners, the learners' managers, customers, and so forth.

Standard: An e-learning specification established as a model by a governing authority such as IEEE or ISO to ensure quality, consistency, and interoperability.

Storyboard: (noun) An outline of a multimedia project in which each page represents a screen to be designed and developed. (verb) To create a storyboard.
Streaming media (streaming audio or video): Audio or video files played as they are being downloaded over the Internet instead of users having to wait for the entire file to download first. Requires a media player program.

Studying: The self-directed practice of reviewing instructional material (usually as a follow-up to instruction) to improve retention and understanding. Aims to increase or improve skills or knowledge in the long-term, although some people argue that studying only places information in the short-term memory and mainly serves the goal of improving performance on tests.

Style sheets: In traditional print publishing and on the Web, style sheets specify how a document should appear, standardizing such elements as fonts, page layout and line spacing, repeated content, and so forth. Web style sheets help ensure consistency across Web pages, but HTML coding can also override the sheets in designated sections of the pages. Also see CSS.

Synchronous learning: A real-time, instructor-led online learning event in which all participants are logged on at the same time and communicate directly with each other. In this virtual classroom setting, the instructor maintains control of the class, with the ability to "call on" participants. In most platforms, students and teachers can use a whiteboard to see work in progress and share knowledge. Interaction may also occur via audio- or videoconferencing, Internet telephony, or two-way live broadcasts.

Synergy: The dynamic energetic atmosphere created in an online class when participants interact and productively communicate with each other.

System requirements: The technological conditions required to run a software application. Includes the operating system, programming language, database, hardware configuration, bandwidth, processing power, and so forth.

T-1 (DS-1): High-speed digital data channel that is a high-volume carrier of voice and/or data. Often used for compressed video teleconferencing. T-1 has 24 voice channels.

T-3 (DS-3): A digital channel that communicates at a significantly faster rate than T-1.

TBT (technology-based training): The delivery of content via Internet, LAN or WAN (intranet or extranet), satellite broadcast, audio- or videotape, interactive TV, or CD-ROM. TBT encompasses both CBT and WBT.
TCP (Transmission Control Protocol): A protocol that ensures that packets of data are shipped and received in the intended order.

Teaching: A process that aims to increase or improve knowledge, skills, attitudes, and/or behaviors in a person to accomplish a variety of goals. Teaching is often driven more toward the long-term personal growth of the learner and less toward business drivers such as job tasks that are often the focus of training. Some people characterize teaching as focused on theory and training as focused on practical application. See also Training and Learning.

Telecommunication: The science of information transport using wire, radio, optical, or electromagnetic channels to transmit and receive signals for voice or data communications.

Telecommuting: Working at home but connecting to one's office by way of a computer network.

Teleconferencing: Two-way electronic communication between two or more groups in separate locations via audio, video, and/or computer systems.

Telnet: A utility that enables a user to log onto a computer or server and access its information remotely, for example, from home or a work location in the field.

Template: A predefined set of tools or forms that establishes the structure and settings necessary to quickly create content.

Thin client: 1) A network computer without hard- or diskette drives that accesses programs and data from a server instead of storing them locally. 2) Software that performs the majority of its operations on a server rather than the local computer, thus requiring less memory and fewer plug-ins.

Thread: A series of messages on a particular topic posted in a discussion forum.

Touch screen: An input device used to simplify user input and response. The user touches the screen to control the output, working with menus or multiple-choice decision points. Allows some simulation of hands-on training; for example, pointing to parts on a machine.

Training: A process that aims to improve knowledge, skills, attitudes, and/or behaviors in a person to accomplish a specific job task or goal. Training is often focused on business needs and driven by time-critical business skills and knowledge, and its goal is often to improve performance. See also Teaching and Learning.
Training management system: See LMS.

Transparent technology: Technology that is easy to use, intuitive in nature, and not the focus of the learning experience. Also called seamless technology.

Transponder: Satellite transmitter and receiver that receives and amplifies a signal prior to retransmission to an earth station.

Trojan horse: A malicious computer program that appears legitimate but masks a destructive file or application. Unlike viruses, Trojan horses usually do not replicate themselves but can still cause a great deal of damage, such as creating an entryway into your computer for malevolent users.

Tutorial: Step-by-step instructions presented through computer or Web-based technology, designed to teach a user how to complete a particular action.

24/7: Twenty-four hours a day, seven days a week. In e-learning, used to describe the hours of operation of a virtual classroom or how often technical support should be available for online students and instructors.

Unicasting: Communication between a sender and a single receiver over a network. For example, an email message sent from one person to another.

Uplink: The communication link from a transmitting earth station to a satellite.

Upload: To send a file from one computer or server to another.

URI (uniform resource identifier): Name and address of information--text, graphics, audio, video, and so forth--on the Internet. A URI usually identifies the application used to access the resource, the machine the resource is located on, and the file name of the resource. A Webpage address or URL is the most commonly used type of URI.

URL (uniform resource locator): The address of a page on the World Wide Web. For example, .

Usability: The measure of how effectively, efficiently, and easily a person can navigate an interface, find information on it, and achieve his or her goals.
**Value-added services:** In the context of the e-learning industry, value-added services include custom training needs assessment and skill-gap analysis, curriculum design and development, pre- and posttraining mentoring and support, training effectiveness analysis, reporting and tracking tools, advisor services and implementation consulting, hosting and management of Internet- or intranet-based learning systems, integration of enterprise training delivery systems, and other services.

**Vector graphic:** An image created based on mathematical formulas rather than by an array of dots. Vector images look cleaner when they’re enlarged or shrunk because the mathematical formulas on which they’re based redraw the images to scale. See also raster graphic.

**Videoconferencing:** Using video and audio signals to link participants at different and remote locations.

**Virtual:** Not concrete or physical. For instance, a completely virtual university does not have actual buildings but instead holds classes over the Internet.

**Virtual classroom:** The online learning space where students and instructors interact.

**Virtual community:** See online community.

**Virus:** A destructive type of computer program that attempts to disrupt the normal operation of a computer, rewrite or delete information from storage devices, and in some cases, cause physical damage to the computer.

**Virus detection program:** A software program to detect, diagnose, and destroy computer viruses.

**VoD (video on demand):** See CoD.

**VoIP (voice over IP):** Voice transmitted digitally using the Internet Protocol. Avoids fees charged by telephone companies.

**Vortal:** Vertical portal; a portal that targets a niche audience.

**VPN (virtual private network):** A private network configured inside a public network. Offers the security of private networks with the economies of scale and built-in management capabilities of public networks.
W

W3C: World Wide Web Consortium, an organization developing interoperable specifications, software, and tools for the WWW. See the W3C Website.

WAN (wide-area network): A computer network that spans a relatively large area. Usually made up of two or more local area networks. The Internet is a WAN.

WAP (wireless application protocol): Specification that allows Internet content to be read by wireless devices.

WBT (Web-based training): Delivery of educational content via a Web browser over the public Internet, a private intranet, or an extranet. Web-based training often provides links to other learning resources such as references, email, bulletin boards, and discussion groups. WBT also may include a facilitator who can provide course guidelines, manage discussion boards, deliver lectures, and so forth. When used with a facilitator, WBT offers some advantages of instructor-led training while also retaining the advantages of computer-based training.

Web-based learning: See Web-based training.

Webcast: (Web + broadcast) (noun) A broadcast of video signals that's digitized and streamed on the World Wide Web, and which may also be made available for download. (verb) To digitize and stream a broadcast on the World Wide Web.

Web conference: (noun) A meeting of participants from disparate geographic locations that's held in a virtual environment on the World Wide Web, with communication taking place via text, audio, video, or a combination of those methods. (verb) To participate in a Web conference.

Webinar: (Web + seminar) A small synchronous online learning event in which a presenter and audience members communicate via text chat or audio about concepts often illustrated via online slides and/or an electronic whiteboard. Webinars are often archived as well for asynchronous, on-demand access.

Webpage: A document on the World Wide Web that's viewed with a browser such as Internet Explorer or Netscape Navigator.
Website: A set of files stored on the World Wide Web and viewed with a browser such as Internet Explorer or Netscape Navigator. A Website may consist of one or more Webpages.

Whiteboard: An electronic version of a dry-erase board that enables learners in a virtual classroom to view what an instructor, presenter, or fellow learner writes or draws. Also called a smartboard or electronic whiteboard.

Wi-fi (wireless fidelity): 1) Term developed by the Wi-Fi Alliance denoting products that can connect to each other without wires, acting as either wireless clients or base stations. Products bearing a “Wi-fi certified” label should always be interoperable; some non-logoed products will interoperate as well. 2) Any network adhering to the IEEE 802.11 standard, including 802.11a, 802.11b, 802.11g, and so forth.

Wizard: A mini-application that prompts a user through the steps of a particular computer-based action. The user provides necessary information as he or she proceeds through the wizard's screens, while the wizard completes the actual steps behind the scenes.

WML (Wireless Markup Language): XML-based language that allows a reduced version of Webpages' text to be displayed on cellular phones and personal digital assistants.

Workstation: 1) A device, often a microcomputer, that serves as an interface between a user and a file server or host computer. 2) More generally, a computer or a computer terminal.

Worm: A computer virus that replicates itself many times over for the purpose of consuming system resources, eventually shutting down a computer or server. This type of virus is most often directed at mail servers such as Microsoft Exchange and is usually unleashed when an unsuspecting user opens an email attachment.

WORM (write once, read many): A type of data storage disk that allows information to be saved to it only once, archiving permanent data. WORM disks must be read by the same kind of drive that wrote them, thus hindering widespread acceptance of this technology.

WWW (World Wide Web): A graphical hypertext-based Internet tool that provides access to Webpages created by individuals, businesses, and other organizations.

WYSIWYG (what you see is what you get): Pronounced "wizzy wig," a WYSIWYG program allows designers to see text and graphics on screen.
XML (Extensible Markup Language): The next-generation Webpage coding language that allows site designers to program their own markup commands, which can then be used as if they were standard HTML commands.

XSL (eXtensible Stylesheet Language or eXtensible Style Language): A Webpage design language that creates style sheets for XML pages, which separate style from content so that developers can specify how and where information is displayed on the page.

Zip file: 1) A file that has been compressed, often with the .ZIP format originated by PKWARE. 2) A file on a Zip disk, not necessarily compressed. 3) A compressed file with the .EXE extension that is self-extracting (can be unzipped simply by opening it).

Zip drive: An external data storage device that reads Zip disks.

Zip disk: Portable storage disk that can hold 100 or 250 MB of information, manufactured by the Iomega corporation. Used in a Zip drive, Zip disks can archive or back up large amounts of data.
APPENDIX 2

LIST OF MODULES
Message from the Medical Director, Dr Lynne Robinson:

Hello Darren,

Do you need to update your details? CPD points are regularly reported to various accrediting bodies. Make sure you don’t miss out by ensuring your details are accurately recorded, including RACGP and ACRRM numbers for those eligible. You can also choose to receive a text only or HTML (web based) version of the PriMeD newsletter.

Catalogue

<table>
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<th>New units</th>
<th>Recently revised units</th>
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<td>Men's health</td>
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<tr>
<td>Communication</td>
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</table>
Accreditation

Workshops are accredited by RACGP (Group 1 - 5 points per hour), RACP (Practice Related CME - 2 points per hour) and ACCRM (Professional Development Program - 5 points per hour). Mental Health Workshops are endorsed by the GPMHSC.

All other units if completed outside the context of a workshop are accredited by RACGP (Group 2 - 2 points per hour), RACP (Practice Related CME - 0.5 points per hour) and ACCRM (Professional Development Program - 1 point per hour).
### Workshop

**Showing 1-20 of 42 units**

<table>
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<tr>
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<th>Title</th>
<th>Description</th>
<th>Your status</th>
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<tbody>
<tr>
<td><img src="image" alt="Ophthalmology Workshop (LMO-001)" /></td>
<td>This is a comprehensive ophthalmology Workshop that covers both paediatric and adult disorders. This Workshop will help you to become confident in approaching the assessment and management of ophthalmological conditions. It will also familiarise you with the legal implications of vision impairment.</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Women and mental health Workshop (LMO-002)" /></td>
<td>This workshop focuses on the mental health of women, which may be affected by many factors, including hormonal influences, life experiences and cultural issues. There are several mental health disorders that occur commonly in women. Some of these conditions are specific to women, e.g. postnatal depression, while others affect women more frequently than men, e.g. eating disorders, depression. There are also gender differences in the presentation of mental illness between men and women. Endorsed by the General Practice Mental Health Standards Collaboration.</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Mental health assessment in general practice - depression and anxiety Workshop (LMO-004)" /></td>
<td>Mental health problems make up a significant component of general practitioners' work. Depression and anxiety are very common - according to the National Mental Health Policy (1995), one in five Australians will be affected by a mental health problem or disorder during their lifetime. This module focuses on recognising, assessing and diagnosing mental health problems, with a particular focus on depression and anxiety. Endorsed by the General Practice Mental Health Standards Collaboration.</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Managing depression in general practice Workshop (LMO-005)" /></td>
<td>Depression is common and represents a particular challenge to general practitioners. This module uses mainly case presentations to review the essential issues of assessing and initiating management for a variety of patients. Endorsed by the General Practice Mental Health Standards Collaboration.</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Depression - Practical techniques to help your patients get well and stay well Workshop (LMO-008)" /></td>
<td>In over 50% of patients who experience depression, the condition will recur at least once in their lifetime. One third of patients with depression remain in partial remission or develop chronic depression. Therefore, adopting a long-term approach to managing depression, with strategies to reduce risk of recurrence, is an appropriate model in many situations. Endorsed by the General Practice Mental Health Standards Collaboration.</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Practical counselling techniques for the everyday GP Workshop (LMO-009)" /></td>
<td>Are you a counsellor? Unsure? Are you nervous about setting out on the counselling journey? Are you lost in amidst patients’ tales of woes with no road map to lead you home? Don’t worry, help is at hand! This module is designed to provide GPs with some useful tools for everyday counselling situations in General Practice. Endorsed by the General Practice Mental Health Standards Collaboration.</td>
<td>![ ]</td>
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</tr>
</tbody>
</table>
Depression is the most common mental illness affecting people of all ages, including elderly people, with prevalence figures ranging from 8 to 35% and up to 50% in patients with dementia. Unfortunately, depression often remains undiagnosed in elderly patients, as the symptoms may be masked by, or attributed to, medical illnesses or considered to be part of ageing. This workshop helps you to improve your knowledge and skills in understanding, diagnosing and managing depression in the elderly. Endorsed by the General Practice Mental Health Standards Collaboration.

This workshop was revised on the 1 August, 2003 and I encourage you to do QUS-007 again, even if you have done so previously.

Many patients with chronic pain are suffering from some form of neuropathic pain. Post-herpetic neuralgia, painful diabetic neuropathy, trigeminal neuralgia, complex regional pain syndrome and neuropathic contributions to back pain, persistent post-operative and cancer pain are all common. Do you appreciate the importance to management of this diagnosis?

Digestive diseases are common and important causes of ill health in Australia. The Gastroenterological Society of Australia has recently revised its guidelines for diagnosis and treatment of reflux disease and recommends some important changes in approach.

Abnormal bowel motions are a common presentation in the general practice setting, and often cause a significant decrease in a patient's quality of life. This workshop details three causes of abnormal bowel motions; irritable bowel syndrome, inflammatory bowel disease and travellers' diarrhoea.

Gastroenteritis, chronic diarrhoea and constipation are common problems in a paediatric population, and cause many a headache for parents and general practitioners alike. This module examines these conditions and provides some important take-home messages particularly in regard to the assessment of dehydration.

When should I do faecal occult blood testing on my patients? Do I need to do endoscopies for my patients with dyspepsia? If these thoughts are going through your head, then this is the workshop for you. This workshop examines the rational use of gastrointestinal investigations, such as endoscopy, Helicobacter pylori testing, faecal occult blood testing and colonoscopy.

Nocturnal enuresis, urinary tract infections and routine care of the uncircumcised male child are everyday problems in primary care. Moreover, there have been some recent changes in best practice, particularly in the management of nocturnal enuresis. Spend an hour and a half to update on these paediatric topics. This workshop was updated on the 1 July, 2003 and I encourage you to read lectures LPR-072 and LPR-073 again, even if you have done so previously.

How often do you inquire about urinary incontinence in your female patients? Despite relatively low...
preparation rates, female urinary incontinence is actually very common. This module is designed to help you hone your skills in the assessment and management of female urinary incontinence. This workshop was updated on the 1 July, 2003 and I encourage you to read lectures LPR-086 and LPR-087 again, even if you have done so previously.

Men attend the GP less often than women, and continue to die in greater numbers and at earlier ages. Why is men's health poor and how can we improve health outcomes for male patients? This workshop provides some answers to these questions as well as exploring the problem of erectile dysfunction and the vexed issue of screening for prostate cancer.

Although anxiety is a common problem in the general population, it often remains unrecognised. Anxiety can present in many ways and reaching a diagnosis can be complicated by the presence of a physical illness or other mental illness. In this workshop you will read about the different types of anxiety disorders that affect both children and adults, and various approaches in managing them. Endorsed by the General Practice Mental Health Standards Collaboration.

Infant care is well within the domain of the family physician. This module helps you to understand the major areas of paediatric gastroenterology that commonly challenge the family GP. Use this module as a guide to develop your skills in the assessment and management of paediatric gastroenterological problems from infant nutrition through to jaundice.

There have been significant changes in the recommended management for chronic heart failure over recent years, with resultant improvements in long-term prognosis and survival. This LMO contains the comprehensive document, Guidelines on the Contemporary Management of the Patient with Chronic Heart Failure in Australia, as developed by the National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand in 2002. These guidelines provide clear advice based on best current evidence. The module also contains four GP-oriented study guides intended to complement the guidelines and assist with the day-to-day issues of managing patients with chronic heart failure.

Many of the factors that place a person at risk of a first or subsequent stroke can be prevented or altered with intervention. This unit outlines common risk factors for stroke, management of primary and secondary prevention, acute management principles, rehabilitation, potential complications and long-term sequelae of stroke.

Being able to safely assess and manage an acutely psychotic patient is a challenging experience that many GPs encounter at some point in their career. This workshop covers the principles of the assessment and management of acute psychosis, including first episode psychosis and when past psychiatric history is unknown. There are various causes of psychotic symptoms and two of these are covered in more detail in this workshop: the long-term management of schizophrenia (the most common cause of psychotic
symptoms) and substance-induced psychosis. 
Endorsed by the General Practice Mental Health Standards Collaboration.
<table>
<thead>
<tr>
<th>Type</th>
<th>Title</th>
<th>Description</th>
<th>Your status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition, activity and</td>
<td>Workshop (LMO-027)</td>
<td>In Australia, two-thirds of adult men and over half of adult women are overweight or obese. When set against this background, nutrition is more relevant than ever to general practice. This module looks at the fundamentals of weight management, including nutritional assessment, diagnosis and treatment. It covers maintenance of a healthy weight, through healthy food choices and activity, and the treatment of overweight and obesity. Tools are provided to assist in nutrition counselling.</td>
<td></td>
</tr>
<tr>
<td>Clinical investigations</td>
<td>Workshop (LMO-028)</td>
<td>Befuddled by abnormal liver test results? Feel like there is no way you can maintain your rationality when investigating electrolyte abnormalities? Or do you just want to feel confident that you are sending your pathologist good quality Pap smear specimens? This workshop may have the answers for you. It focuses on four main subject areas: gynaecological cytology, molecular pathology, haematology and biochemistry. And if that's not enough to entice you, when this workshop is completed, general practitioners will be the proud owners of 20 CPD points!</td>
<td></td>
</tr>
<tr>
<td>Update on cancer</td>
<td>Workshop (LMO-029)</td>
<td>GPs are often involved in the care of patients with cancer – from the early diagnostic and treatment planning stage, through the active phase of treatment, and also when cancers recur or present in an advanced state, through to end of life care. In this module we will address the GP's role in the management of patients with early and advanced cancer. Comprehensive palliative care issues will be covered in a future educational module. This module aims to provide a conceptual framework enabling GPs to feel better equipped to triage the problems that a patient with cancer may present with and to know what actions to take.</td>
<td></td>
</tr>
<tr>
<td>Asthma in adults</td>
<td>Workshop (LMO-031)</td>
<td>This workshop provides practical tools and information on the diagnosis, assessment and management of adults with asthma. Refresh your understanding of the pathophysiology of asthma and the roles of various asthma medications. Take the short quiz and self-assessment audit and revise your asthma knowledge and skills.</td>
<td></td>
</tr>
<tr>
<td>Menopause - an</td>
<td>Workshop (LMO-034)</td>
<td>Menopausal medicine was thrown into the spotlight in July 2002, due to the massive media attention afforded to the results of the oestrogen plus progesterin arm of the Women's Health Initiative, ceased early due to the increased incidence of invasive breast cancer seen in the treatment group. This module hopes to answer some of the questions posed to general practitioners as a result of this trial, and includes some helpful practice tools to assist in the counselling of menopausal patients.</td>
<td></td>
</tr>
</tbody>
</table>
Substance abuse and mental health Workshop (LMO-035) Estimate 2 hours to complete

Substance abuse can have a significant impact on the mental and physical health of the individuals using the substances and their families. Many patients in general practice have been directly or indirectly affected by substance abuse. There are several effective interventions for rehabilitation and harm minimisation. These and many other issues are covered in this workshop. Endorsed by the General Practice Mental Health Standards Collaboration.

Upper abdominal pain Workshop (LMO-036) Estimate 1 hour 30 minutes to complete

This workshop on upper abdominal pain addresses some of the many causes including the management of peptic ulcer disease. This module has been developed in conjunction with the Gastroenterological Society of Australia and also contains the professional guidelines on *Helicobacter pylori*.

Lower abdominal pain Workshop (LMO-037) Estimate 1 hour 30 minutes to complete

In this workshop, we look at an approach to the patient with lower abdominal pain and the management of some common conditions, such as diverticular disease and constipation.

Paediatric abdominal pain and gastroenterological emergencies Workshop (LMO-038) Estimate 1 hour 30 minutes to complete

This workshop provides a thorough review of common causes of abdominal pain and gastroenterological emergencies in children. There are also some very practical units to help you update your skills in calculating fluid replacement for dehydrated children. This workshop has been developed in conjunction with the Digestive Health Foundation, the educational arm of the Gastroenterological Society of Australia.

Chronic non-cancer pain Workshop (LMO-039) Estimate 2 hours to complete

A workshop about the definition, aetiology, assessment and management of chronic non-cancer pain.

Cancer pain Workshop (LMO-040) Estimate 2 hours to complete

A workshop about the assessment and management of cancer-related pain.

Osteoporosis Workshop (LMO-041) Estimate 2 hours to complete

Osteoporosis is a problem commonly encountered in general practice. Up to 60% of women over the age of 60 years have fractures attributable to osteoporosis. However, osteoporosis is not just a women’s issue; one-third of hip fractures in Australians who are 65 years or older occur in men. This unit will provide GPs with up-to-date information on treatment options for osteoporosis, as well as information on primary prevention.

Assessment and management of hypertension Workshop (LMO-042) Estimate 2 hours to complete

What constitutes normal blood pressure? Why all the fuss about hypertension? These, and other questions will be answered in this workshop about hypertension and its management.

Disorders of the menstrual cycle Workshop (LMO-043) Estimate 2 hours to complete

Women often present in general practice with ‘funny periods’ or disordered menstrual bleeding. Thorough assessment of a patient, along with appropriate investigations, will usually identify the cause of abnormal per vaginal (PV) bleeding. This workshop will assist you in guiding patients through the wide range of medical and surgical therapeutic options for abnormal PV bleeding.

Basic critical thinking skills Workshop (LMO-049) Estimate 7 hours to complete

This course has been written by primary care clinicians for primary care clinicians. It aims to introduce you to the basic skills required for informing your clinical decisions with the best available research-based...
knowledge. With as many as 30,000 new clinical trials published every year, it is clearly impossible to always know the latest information. What we need are the skills to access what we need, when we need it. Spend an hour a fortnight and learn how to efficiently equip yourself to access the best available knowledge to make good clinical decisions. Even if you don't want to complete all 7 hours, you will still find that browsing and picking from this course will offer you great practical skills that will save you much time and angst in the future.

This workshop introduces the basic principles of a variety of research skills and practice assessment methods for general practice. This workshop is divided up into five modules of 4 units each. Each module covers a different topic. Two of the workshop modules aim to provide the basic skills and knowledge to conduct single patient trials to determine optimum treatment for patients, and to assess the standards of your practice using Clinical Audit. The module on medical writing covers writing for medical and non-medical writing for the general public, professionals and peer-reviewed journals. The course also includes a module on clinical trials in general practice settings and the issues a GP may encounter. Finally, a module outlining the processes involved in developing a simple research question to pursue within your practice is also included. Spend an hour a fortnight or browse and pick from this course to equip yourself with new knowledge and skills to allow you to explore new possibilities for research, practice assessment and publication in your practice.

Adolescents in trouble

Depression and suicide are two major issues for young people in Australia. Depression is under-detected and under-treated amongst adolescents. Australia's suicide rate among young people is amongst the highest in the Western world. GPs can help turn this situation around by being sensitive to these issues amongst their adolescent patients. This module helps you to build trust with your adolescent patients and so be in a good position to help through early detection and treatment of depression. We also help you develop techniques for recognising suicide risk and strategies to try to prevent such tragedies. Endorsed by the General Practice Mental Health Standards Collaboration.

Confusional states in the elderly

Confusion in elderly patients poses diagnostic and management challenges to the GP and is a difficult time for the patients and their families. Understanding the 3 D's – delirium, dementia and depression, is crucial in caring for elderly patients with confusion. This workshop helps you to understand the many complex issues surrounding both acute and gradual onset of confusion in elderly people and important management strategies. This workshop is endorsed by the General Practice Mental Health Standards Collaboration.

Learning in the clinical setting

In this workshop you will gain an understanding of adult learning principles and how they can be applied to teaching in the general practice setting. You will have the opportunity to consider the characteristics of good clinical teachers and discover ways in which you can become a more effective teacher. This workshop also highlights the role of a clinical teacher in identifying and
assisting students in difficulty.

Teaching the 'science' and 'art' of general practice
Workshop (LMO-055)
Estimate 1 hour to complete

Students are spending an increasing amount of time learning in the community setting, including general practice. The general practice learning environment is quite different from the teaching hospital environment. As such, teaching strategies in general practice are often different from those utilised in hospital settings. This workshop explores some teaching strategies that aim to maximise learning in the general practice setting.
Teaching about working in the community and the professional responsibilities of general practice
Workshop (LMO-056)
Estimate 1 hour to complete

Developing a learning plan and giving feedback
Workshop (LMO-057)
Estimate 1 hour to complete

Aside from clinical knowledge and practical skills, what do you think students need to know about general practice? This workshop explores the community perspective of general practice and the many professional responsibilities of a GP. It outlines some ways in which GP teachers can help students to learn about these aspects of general practice.

Do you feel overwhelmed by the prospect of teaching students about general practice? This workshop will explain the value of developing a learning plan with a student early in their clinical placement. It also highlights the importance of giving constructive feedback to students throughout their attachment. In the activity, you will have the opportunity to practise creating a learning plan for a student, based on their learning needs.
APPENDIX 3A

Level 1

Course Evaluation Survey (CES) and
Demographic Profile Survey (DPS)
Effectiveness of web-based continuing professional education

### Course Structure

- **Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable (NA)**

<table>
<thead>
<tr>
<th>The objectives of the course were clear to me.</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course was well organised.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
<td>NA</td>
</tr>
<tr>
<td>The course content related to the course objectives.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Content

- **Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable (NA)**

<table>
<thead>
<tr>
<th>I believe the subject matter of this course is relevant to my professional practice.</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>The content was representative of possible clinical scenarios and encouraged professional problem solving.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
<td>NA</td>
</tr>
<tr>
<td>The subject matter presented through this course enhanced my professional knowledge of this area.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
<td>NA</td>
</tr>
<tr>
<td>The subject matter expanded upon by prior knowledge of this area.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Graphics and media

- **Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable (NA)**

| The use of different media components (audio, video, text images, photos) serves a clear purpose. | SA | A | N | D | SD | NA |
and present the subject matter effectively.

0 SA  A  N  D  SD  NA

The overall presentation of the web pages was attractive.

0 SA  A  N  D  SD  NA

The screen design and layouts were clear, uncluttered, and well organised.

0 SA  A  N  D  SD  NA

The use of the following medium was the most effective in helping me to learn.

0 Sound  Pictures  Graphics  Video  Text  Hyperlinks

The use of the following medium was the least effective in helping me to learn.

0 Sound  Pictures  Graphics  Video  Text  Hyperlinks

**Navigation, organization, and instructional design**

Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable (NA)

I was able to control the rate of presentation of subject matter.

0 SA  A  N  D  SD  NA

It was easy to find out what you have completed already and what is still to be completed.

0 SA  A  N  D  SD  NA

This course provided interactivity, which increases its instructional value.

0 SA  A  N  D  SD  NA

The website is well organised for ease of use.

0 SA  A  N  D  SD  NA

It was easy to navigate, so I could concentrate on learning the material rather than learning to use the courseware.

0 SA  A  N  D  SD  NA

All links and navigation buttons were clearly labelled and serve an easily identified purpose.

0 SA  A  N  D  SD  NA

**Instruction page/Home page**

Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable (NA)

The instruction page was complete, clearly organised, and easily understood.

0 SA  A  N  D  SD  NA

The instruction page provided good advice/examples on how to work through the course.

0 SA  A  N  D  SD  NA

**Overall impressions**

Strongly agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly disagree (SD), Not applicable
I would participate in another online course offering of this type.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

This courseware learning system is an effective way to participate in continuing education.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Overall, the instruction I received through this courseware learning system was appealing, interesting, and motivating.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

This method of education compares favourably with other available means of obtaining similar education.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

This courseware was easy to use.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

This courseware makes me confident in using computers and technology.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Feedback on my learning or queries was available from the course provider.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Feedback on my learning or queries from the course provider was appropriate.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Feedback on my learning or queries from the course provider was timely.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Interaction with other participants was available.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Interaction with other participants was appropriate.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Interaction with other participants was timely.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Overall, the course was value for money.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Overall, I believe online courses are more effective for learning than traditional 'face-to-face' courses for my continuing educational needs.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- Not Applicable

Having completed the course how would you rate the courseware package in terms of usability.
- Excellent
- Good
- Poor
- Very poor
Having completed the course how would you rate the courseware package in terms of layout.
- Excellent
- Good
- Poor
- Very poor

Having completed the course how would you rate the courseware package in terms of academic content.
- Excellent
- Good
- Poor
- Very poor

Having completed the course how would you rate the courseware package in terms of attainment of learning objectives.
- Excellent
- Good
- Poor
- Very poor

Learning approach supported by courseware
Which of the following best describes the type of approach you were encouraged to adopt as you worked through the courseware?
(Choose only one)
- Deep approach (looking to an overall understanding of the material)
- Strategic approach (driven towards high attainment i.e. not to make mistakes)
- Surface approach (minimal interaction, no need to understand the material)

Demographic material
Age Range.
- 20-30
- 31-40
- 41-50
- 51+

Gender.
- Male
- Female

Years in occupation.
- 0-10
- 11-20
- 21-30
- 31+

Occupation.
- GP
- Nurse
- Allied Health
- Other
Level of Internet competency.
- Excellent
- Good
- Poor
- Very poor

Level of computer competency.
- Excellent
- Good
- Poor
- Very poor

Number of online courses previously taken (including this one)
- 1
- 2-3
- 4-5
- 6-7
- 8+

Where do you mostly study your online course?
- Work
- Home

Additional comments
Please enter any additional comments you may have.

Submit your vote!
APPENDIX 3

Level 1

Course Evaluation Survey (CES)

Cronbach’s Alpha
### RELIABILITY ANALYSIS - SCALE (ALPHA)

<p>| | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CS1</td>
<td>course structure - objectives</td>
</tr>
<tr>
<td>2</td>
<td>CS2</td>
<td>course structure - organisation</td>
</tr>
<tr>
<td>3</td>
<td>CS3</td>
<td>course structure - content</td>
</tr>
<tr>
<td>4</td>
<td>C1</td>
<td>content - relevancy</td>
</tr>
<tr>
<td>5</td>
<td>C2</td>
<td>content - PBL</td>
</tr>
<tr>
<td>6</td>
<td>C3</td>
<td>content - knowledge</td>
</tr>
<tr>
<td>7</td>
<td>C4</td>
<td>content - experience</td>
</tr>
<tr>
<td>8</td>
<td>GANDM1</td>
<td>graphics/media - purpose</td>
</tr>
<tr>
<td>9</td>
<td>GANDM2</td>
<td>graphics/media - presentation</td>
</tr>
<tr>
<td>10</td>
<td>GANDM3</td>
<td>graphics/media - organisation</td>
</tr>
<tr>
<td>11</td>
<td>MEDIUM1</td>
<td>medium - effective</td>
</tr>
<tr>
<td>12</td>
<td>MEDIUM2</td>
<td>medium - least effective</td>
</tr>
<tr>
<td>13</td>
<td>NOID1</td>
<td>instructional design - rate</td>
</tr>
<tr>
<td>14</td>
<td>NOID2</td>
<td>instructional design - pacing</td>
</tr>
<tr>
<td>15</td>
<td>NOID3</td>
<td>instructional design - interactivity</td>
</tr>
<tr>
<td>16</td>
<td>NOID4</td>
<td>instructional design - organisation</td>
</tr>
<tr>
<td>17</td>
<td>NOID5</td>
<td>instructional design - navigation</td>
</tr>
<tr>
<td>18</td>
<td>NOID6</td>
<td>instructional design - purpose</td>
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</tr>
<tr>
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<td>IPHP2</td>
<td>home page - instruction</td>
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</tr>
<tr>
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<td>OI2</td>
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</tr>
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<td>OI7</td>
<td>impressions - feedback provided</td>
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**RELIABILITY ANALYSIS - SCALE (ALPHA)**

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**Reliability Analysis - Scale (Alpha)**

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### Statistics for Variables

- **Scale**
  - Mean: 190.8571
  - Variance: 343.4645
  - Std Dev: 18.5328
  - N of Variables: 39

- **Item Means**
  - Mean: 4.8938
  - Minimum: 2.4821
  - Maximum: 5.7619
  - Range: 3.2798
  - Max/Min Variance: 2.3213
  - Variance: .7050

---

N of Cases = 168.0
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Reliability Coefficients: 39 items

Alpha = .9221

Standardized item alpha = .9494
APPENDIX 4

SAMPLE MODULE MATERIAL
Managing depression in general practice

Welcome to this workshop, Darren. In this module, we deal with common presentations of mood disorders. In particular we will help to assess and manage several different (and challenging) patients who present to our hypothetical GP colleagues.

The workshop will take you about 2 hours to complete and is accredited for 10 RACGP Group 1 points if you complete all elements.

Once you have completed the 'Starting Out' Activities, you can do the units in any order you wish - for example, start with the cases if you like.

Most units automatically mark themselves complete as you finish them. LPRs are the exception - you must hit the 'mark entire document complete' button yourself. In other words, you decide when you are finished with lecture notes (LPR units).

I look forward to meeting you properly, Darren, in the welcome discussion.

[Contact Dr Natalie Burch]

Starting off...

Welcome discussion
Introduce yourself to the group

Pre-test
It's not really a test, more a 'where is your thinking at now?' survey. Your answers are not available to the group. It won't take long and it is mandatory for 5 points per hour.

Workshop Units...

Depression — from suspicion to Initiating management (LPR-049)
Are you recognising all of your depressed patients?
Are you aware of the initial management options available when you make a diagnosis of depression?
Do you always ask about suicide?

Hormones and depression (LPR-050)
An overview of the current views on depression and hormones for both men and women. This lecture was updated on the 4 March, 2003.

Overview of antidepressants (LPR-056)
Summary of the currently available antidepressants. This unit was updated on the 26 March 2003.

Bernadette's hormones are driving her crazy! (CBL-032)
Is it menopause or is something else going on?

Heather presents with her 9 week old baby (CBL-034)
Managing depression in general practice

Workshop (LMO-005)

Your Facilitator, Dr Natalie Burch

Dr Natalie Burch (B.Sc., M.B.B.S., DRANZCOG, FRACGP) works as a rural general practitioner in Scottsdale, Tasmania. Her special interests in medicine include mental health, family planning and low risk obstetrics, minor surgery and emergencies.

Contact Dr Natalie Burch

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Managing depression in general practice

Workshop (LMO-005)

[ Home ] [ Facilitator ] [ Goals ] [ Authority ] [ Points ]

Status: [ ]

[ Notes ]

Estimate: 120 mins

Authority

This module was developed by the PriMeD education team with assistance from Dr Carolyn Russell (GP, Brisbane) and Dr Bill Lyndon (Psychiatrist, Sydney). Dr Lyndon is a Clinical Lecturer for the Department of Psychological Medicine, University of Sydney. He is also Co-Director of the Mood Disorders Unit, Northside Clinic and a Psychiatrist in Private Practice, North Sydney. Prior to 1985, Dr Lyndon worked as a GP in rural NSW.

PriMeD education team:-
Dr Lynn Robinson - GP and Medical Director of Med-E-Serv
Dr Cherri Ryan - GP and Educator
Dr Anne Thomas - GP and Educator
Dr Patricia Smart - GP and Educator
Dr Jean Ann Edsall - GP and Educator
Ms Nancy Emmanuel - Clinical Educator
Ms Nina Cruickshank - Clinical Educator
Ms Annette Harris - Project Officer
Mr Peter Hendy - Clinical Writer
Mr Torben Wentrup - Clinical Writer

The PriMeD curriculum is developed with the assistance of the National Advisory Committee (NAC).

Prof Dimity Pond - Chairperson of the NAC
Professor and Head of the Discipline of General Practice, The University of Newcastle
Dr Peter Roush - GP, Brisbane, QLD
Dr Richard Smith - GP, Beechworth, VIC
Dr Natalie Burch - GP, Scottsdale, TAS
Dr Jenny Robson - Physician and Microbiologist, Brisbane, QLD

Workshop Home

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Managing depression in general practice

Workshop (LMO-005)

Available points for this unit
LMO-005 is endorsed by the GPMHSC (Level One Skills Training - Core).

The General Practice Mental Health Standards Collaboration (GPMHSC) has endorsed PriMeD mental health workshops for Level One Skills Training. This workshop is a core workshop in the PriMeD Level One Skills Training.

NOTE: GPs who undertake a total of six hours of PriMeD mental health workshops including at least one 2 hour core skills workshop will be considered to have completed the skills training requirement for registration to Level One of the Better Outcomes in Mental Health Care initiative.

All PriMeD mental health workshops, core and non-core, have been endorsed by the GPMHSC, and can be used to complete the required 30 points of mental health education by December 2004.

PriMeD does not report directly to GPMHSC, however all PriMeD Mental Health Workshops are included in the PriMeD report to RACGP QA and CPD Program which is used by GPMHSC as a record of completion of mental health workshops endorsed by GPMHSC.

LMO-005 is accredited within the RACGP QA&CPD program (Activity 475217). This workshop is a Group 1 activity. Provided you complete all the workshop requirements, including the finishing up activities, you will receive the maximum Group 1 points (i.e. 10.0 points). If you do not complete all the Group 1 workshop requirements, you will still be eligible for Group 2 points at the rate of 2 points per hour for any completed units within the workshop.

LMO-005 is accredited within the RACP MOPS program. This workshop is an accredited workshop (2 point per hour program) for MOPS, provided you complete all the workshop requirements, including the finishing up activities. Completion of the workshop means you are eligible for 4.0 accredited workshop points. If you do not complete all the workshop requirements, you will still be eligible for practice related CME points at the rate of 0.5 points per hour for any completed units within the workshop.
Managing depression in general practice

Learning Goals:

- Be able to assess depressed patients
- Be able to formulate rational initial management plan
- Have a current view of the contribution of hormones to depression (pregnancy, childbirth and menopause)
- Develop the particular skills required to identify and initiate management in masked depression and somatisation

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.
Managing depression in general practice

Sue Bussell (age 41) wants to run again!

Learning Goals:

- Be aware that depression can present with somatisation
- Be able to recognise masked depression
- Be able to engage patients with a management plan in circumstances where they find it difficult to accept a diagnosis of mental disorder

Material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.
Managing depression in general practice

Workshop (LMO-005)

Status: ★★★

Estimate: 120 mins

Self Assessment - managing depression

Quiz (QUS-021)

Status: ★★★

Estimate: 15 mins

Learning Goals:

- Self assess your knowledge about the management of depression

Material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

---

Mr Pullen, here is a PriMeD workshop. I look forward to liaising and providing the services below!

RSVP for the "Managing Mental Health Issues for Young People" two-day workshop

---

Tell a colleague about PriMeD!

Colleague's name:

[ ]

Colleague's email address:

[ ]

Your name:

[ ]

Your email address:

[ ]

Preview Draft

Back to Top
Managing depression in general practice

Status: [ ] [ ] [ ]

Workshop (LMO-005)

Goals [ ] Authority [ ] Points [ ] Notes [ ] Estimate: 120 mins

Hormones and depression

Status: [ ] [ ] [ ]

Lecture notes (LPR-050)

Goals [ ] Authority [ ] Points [ ] Notes [ ] Estimate: 15 mins

Goals:

- Be able to recognise presentations of depression in patients in menopause, pregnancy and post-partum.
- Be aware of risk factors for developing depression at times of hormonal change.
- Have a rational approach to management of depression presenting at times of hormonal change.

Home

Workshop Home

Finished with this item?

Review this workshop

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Managing depression in general practice

Workshop (LMO-005)

<table>
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Estimate: 120 mins

Depression – from suspicion to initiating management

Lecture notes (LPR-049)

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<th>Goals</th>
<th>Authority</th>
<th>Notes</th>
</tr>
</thead>
</table>

Estimate: 15 mins

Learning Goals:

- To have a high index of suspicion for the diagnosis of a major depressive disorder
- Be able to recognise the different presentations of depression
- Have a rational approach to the initial management of depression

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Managing depression in general practice

Overview of antidepressants

Learning Goals:

- Have a rational approach to prescribing antidepressants.
- Be aware of the different classes of drugs and their rational use.
- Understand the side effect profile of the drugs commonly used for depression and be aware of risk factors.

material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.
Managing depression in general practice

Workshop (LMO-005)

Bernadette’s hormones are driving her crazy!

Status: 120 mins

Status: 15 mins

Earning Goals:

• Be able to recognize depression in a peri-menopausal woman
• Have a rational approach to the management options, particularly the decisions around HRT and/or antidepressants
• Be aware of the psycho-social issues associated with menopause

Fed-E-Serv Pty. Ltd.
Managing depression in general practice

Heather presents with her 9 week old baby

Learning Goals:
- Be aware of the risk factors that may help identify women at risk of post-natal depression
- Be aware of the importance of assessing severity of depression and useful techniques to assist
- Have a rational approach to initiating management, including appropriate prescribing for breast-feeding women
Managing depression in general practice

Workshop (LMO-005)
Status: [ ] [ ] [ ]

About PriMeD
Contact Us

Ben Hunter (age 24) – accident prone?
Case (CBL-031)
Status: [ ] [ ] [ ]

Learning Goals:
- Be aware of the risk factors that may help identify patients suffering from depression
- Be aware of the importance of assessing severity of depression and useful techniques to assist
- Use a rational approach to initiating management, including appropriate pharmacological agents and other appropriate strategies

Estimate:
- Managing depression in general practice: 120 mins
- Ben Hunter (age 24) – accident prone?: 15 mins

Material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

Mr Pullen, here is a PriMeD workshop. I look forward to liaising and providing the services below!

RSVP for the "Managing Mental Health Issues for Young People" two-day workshop [ More... ]

Tell a colleague about PriMeD!

Colleague's name: 
Colleague's email address: 
Your name: Darren Pullen
Your email address: Darren.Pullen@ut

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Managing depression in general practice

Status: IN

Home \ Facilitator \ Goals \ Authority \ Points \ Notes

Notes

Record Notes for your personal use. Notes cannot be seen by other participants or facilitators. Notes do not support formatting or html e.g. links.

Notes for LMO-005

Use this area to jot down personal notes related to this unit. Blank (use the Edit link below to add notes)

[ Edit ] [ Notes for other units ]

General Notes

Use this area as your general PriMeD education notepad. These Notes will be available to you from any PriMeD unit.

Blank (use the Edit link below to add notes)

[ Edit ]

Workshop Home

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.
Mr Pullen,
here Is a PriMeD
workshop. I look forward to
liaising and providing the
services below!

Messages
Product Briefings
Starter Packs
Support
Material
Medical Enquiries

RSVP for the "Managing
Mental Health Issues for
Young People" two-day
workshop

Contribute to this discussion
Welcome Discussion
Introduce yourself to the group

Messages: 1

Posted by Dr Natalie Burch at 3:31PM on October 9, 2003

Facilitators comment
Hello everyone and welcome. Don’t worry, you’re not the first here. Have a look at the hello’s in the archive and feel free to add your
own. It is nice to know who’s out there and to see what other GP’s
are doing.

Messages: 1
Archived Messages: 111

Choose another
workshop item

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Managing depression in general practice
Workshop (LMO-005)

Message from your Facilitator, Dr Natalie Burch:
Hi Darren. Please say hello and tell us a little about yourself. Tell us where you are from and what your practice is like. Why have you decided to do this workshop?

Convenor message
Welcome! This workshop deals with a very common presentation in General Practice - that of depression. I feel like I have spent a lot of my General Practice years firstly underdiagnosing depression, then perhaps overdiagnosing (all of my patients seemed to be in tears for a while there) and so for me personally, I am very interested in this area from a diagnostic perspective. The other issue that I am interested in is time management and depressed patients!! I am currently working in a private women's health centre in suburban Brisbane, and keeping people waiting is not viewed favourably!! The complicating factor is that a lot of the women I see are depressed or anxious! Are these issues that anyone else has problems with?

I look forward to talking to people further as we go through the workshop - feel free to give me a yell if there is anything further that you need, or if you have any comments that you would like to make. Otherwise, enjoy the workshop, and I hope that you find it useful!

Anne

Anxiety - Depression
It is always a confusion which element prevails in a patient. I have been dealing with a patient with GAD with elements of depression for a year. The progress is frustrating. There is no definite sign of "cure".

Depression
I am an addictions counsellor in private practice in WA. Most people I see are suffering from some level of depression. Diagnosing and treating this problem is a very interesting area of study.

Most Topical Subjects
I am very senior and I practice as a G.P. only a few hours in the mornings and in emergency.
I specially try and solve the more complex problems which I see and this of course involves human emotions and often depression/anxiety

David Ruddiman

Posted by Dr Muhammed Aqeel Baig at 7:15PM on April 7, 2002

workshop

I am a Diabetic Specialist working at Karachi, Pakistan. Almost all diabetic persons have depression. The problem is during depression phase they have no desire to keep good glycemic control, most of them think that there family is not supportive to them as this causes severe conflict between family members and diabetic persons. Some patients after the passage of time stop taking medicines and there desire to live a normal life becomes vanished.

Posted by Dr John Burke at 6:53AM on April 8, 2002

welcome

I am a 65 graduate working in tasmania. Depression is so common in my practice I often think ssri's should be added to the drinking water.

Posted by Dr Riva Roberts at 8:23PM on April 10, 2002

depression

I mainly treat substance abuse patients in my practice and many of them complain of anxiety and depression.

Posted by Dr Michael Tan at 10:23PM on April 10, 2002

Depression in GP

Hi everyone, Eventhough I have done other workshops on Depression in GP, I stil would like to learn as much as possible as it is so common and I can always learn more about it.

Posted by Dr Michael Tan at 10:23PM on April 10, 2002

Depression in GP

Hi everyone, Eventhough I have done other workshops on Depression in GP, I stil would like to learn as much as possible as it is so common and I can always learn more about it.

Posted by Dr Madeleine Wilcock at 10:41AM on April 11, 2002

intro

I am working in remote East Arnhem Land. I have done several of these workshops and find them interesting and most useful. I intend to return to general practice in 2003.
Managing depression in general practice

Status: [ ]

Message from your Facilitator, Dr Natalie Burch:
Darren, welcome back. Check the status bars (your automatic journal log) of the units to see where you are up to. If you have any problems, you can contact me or the Facilitator of the individual units as you work through the module.

Most units automatically mark themselves complete as you finish them. LPRs are the exception - you must hit the 'mark entire document complete' button yourself. In other words, you decide when you are finished with lecture notes (LPR units).

Please note that the lecture LPR-050 has been updated as of the 4 March, 2003, and I encourage you to read it again, even if you have done so previously.

You may find it useful, Darren, to download the Kessler Psychological Distress Scale (K10) and the 3 Step Mental Health Process proformas as part of this unit. They are recommended outcome tools in the Better Health Care Initiative. (Don't forget to bookmark this page by adding it to 'favorites', so you can find your way back easily.) See TAT-007 and TAT-008.

Starting off...

Welcome discussion
Introduce yourself to the group

Pre-test
It's not really a test, more a 'where is your thinking at now?' survey. Your answers are not available to the group. It won't take long and it is mandatory for 5 points per hour.

Workshop Units...

Depression - from suspicion to Initiating management (LPR-049)
Are you recognising all of your depressed patients?
Are you aware of the initial management options available when you make a diagnosis of depression?
Do you always ask about suicide?

Hormones and depression (LPR-050)
An overview of the current views on depression and hormones for both men and women. This lecture was updated on the 4 March, 2003.

Overview of antidepressants (LPR-056)
Summary of the currently available antidepressants. This unit was updated on the 26 March 2003.

Bernadette's hormones are driving her crazy! (CBL-032)
Is it menopause or is something else going on?
Heather presents with her 9 week old baby (CBL-040).
An easy diagnosis to miss!

Ben Hunter (age 24) – accident prone? (CBL-031)
A tricky situation for Dr Bob Blunt.

Sue Bussell (age 41) wants to run again! (CBL-037)
She’s had to give up her chosen and loved sport of distance running due to fatigue.

Self Assessment - managing depression (QUS-021)
This quiz tests your knowledge of the principles of assessing and managing depression.

Finishing up...

Post-test
The post-test serves two important purposes. We hope it provides an opportunity for your personal reflection on the module. It is also an important component of our program evaluation.

Evaluation
We value your feedback. This evaluation will take less than 3 minutes and will greatly assist us to continually enhance the PriMeD program.

Wrap up discussion
Share your thoughts with the group and say good bye.

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Managing depression in general practice
Workshop (LMO-005)
- Workshop (L140-005)
- Status: Estimate: 120 mins

Depression – from suspicion to initiating management
Lecture notes (LPR-049)
- Lecture notes (LPR-049)
- Status: Estimate: 15 mins

Message from your Facilitator, Dr Natalie Burch:
Welcome to this lecture on identifying presentations of depression and formulating a framework for their initial management.

Contact Dr Natalie Burch

Items
Depression – from suspicion to initiating management

Home
Workshop Home

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Managing depression in general practice
Workshop (LMO-005)

Depression – from suspicion to initiating management
Lecture notes (LPR-049)

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- 2.0 Presentation of depression
  - 2.1 Flat affect
  - 2.2 Negative thinking patterns
  - 2.3 Neurovegetative symptoms
  - 2.4 Masked depression
- 3.0 Disorders which may be associated with depression
- 4.0 Rational approach of the initial management of depression
  - 4.1 Management options for depression
    - 4.1.1 Hospitalisation
    - 4.1.2 Specialist referral
    - 4.1.3 Antidepressant medication
    - 4.1.4 Psychotherapy
- References

Message from your Facilitator, Dr Natalie Burch:
Hi, Darren. When you have finished, click the 'mark entire document complete' button so that it is recorded in your learning journal.

Display whole document
Use this if you want to print, but otherwise this will generally be too big to handle.

Mark entire document complete
You decide when you are finished. This button will annotate your personal learning journal. You can review the document at any time.
Managing depression in general practice

Workshop (LMO-005)

Status: [ ]

Estimate: 120 mins

Depression – from suspicion to initiating management

Lecture notes (LPR-049)

Status: [ ]

Estimate: 15 mins

Message from your Facilitator, Dr Natalie Burch:

Hi, Darren. When you have finished, click the ‘mark entire document complete’ button so that it is recorded in your learning journal.

1.0 Introduction

Our ability to detect, diagnose and effectively manage patients suffering from depression starts with a high index of suspicion. Lifetime risk of developing a depressive disorder is approximately 12% for men and 25% for women in most studies, though ranges vary from 5-12% and 10-25% respectively. The rates appear to be standard across ethnic, educational, income and marital status groupings. [1]

Major depressive disorder rates in men and women are highest in the 18 to 44 yr old age group, and lower in both men and women, over the age of 65 years. The disorder is twice as common in adolescent and adult females as in adolescent and adult males. In children, rates are the same for both sexes. The sequelae of significant untreated depressive disorders are wide-ranging; from family and work (therefore economic) disruption to suicide. [6]

- 1.1 Risk factors for depressive disorders
1.1 Risk factors for depressive disorders

Certain life events seem to prime any specific individual with an increased risk of depressive symptoms e.g. illness, bereavement, the puerperium. [1]

Risk factors to be aware of in a patient history include personal history or family history of:

- depression
- treatment for depression
- hospitalisation for depression
- post-partum depression
- major separation from a parent for > 12mths during childhood years
- marriage breakdown, illness, death, war separation, etc.

OR a current situation involving:

- female, adolescent or adult <44 years
- 3 or more children at home
- social disadvantage e.g. divorced, isolated, little family support
- unemployment, especially long-term
- middle aged males
- serious medical condition.

Combinations of these factors are associated with an increased risk of depression.
Managing depression in general practice

Workshop (LMO-005)

Status: Estimated: 120 mins

Depression – from suspicion to initiating management

Lecture notes (LPR-049)

Status: Estimated: 15 mins

Message from your Facilitator, Dr Natalie Burch:

Hi, Darren. When you have finished, click the 'mark entire document complete' button so that it is recorded in your learning journal.

[Contact Dr Natalie Burch]

2.0 Presentation of depression

Taking a full psychiatric history can be a lengthy process. Given the time constraints of general practice, it may be helpful to consider factors which may improve 'pick up rates' for depressive disorders.

It is important to be aware of and look for the cardinal signs of depressive illness. Such prime clinical features are:

1. a flat affect
2. negative thinking
3. neurovegetative symptoms
4. masking of depression.

Clinical thoroughness is essential and inherent in all good medical practice. A full history for each new patient is important, along with a regular review of risk factors for possible illness, alcohol and drug history, family history of illness, or a past psychiatric history.

Maintaining a level of suspicion for depressive disorders is crucial. Given the statistical evidence for a high incidence of depressive disorders in the general population, a high index of suspicion is one of the principal requirements for a general practitioner who wishes to treat this disorder effectively. This includes always considering psychiatric diagnoses in your differential diagnostic formulations.

Reflection!

Unipolar major depression

- high rate of occurrence - 17% lifetime prevalence [2]
- episodes of long duration - 33% of patients have episodes of longer than 2 years [2]
- high mortality (15%) from suicide of hospitalised depressed patients. [3]

Because there is a significant discrepancy between the population
incidence of depression and the rate of diagnosis of depression, many attempts have been made to produce screening instruments which might improve 'pick up rates', particularly for those patients where the diagnosis is less readily apparent. Screening tools developed specifically for clinician use with the patient are available in PriMeD unit TAT-017.

- 2.1 Flat affect
- 2.2 Negative thinking patterns
- 2.3 Neurovegetative symptoms
- 2.4 Masked depression

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Managing depression in general practice
Workshop (LMO-005)
[ Home ] [ Facilitator ] [ Goals ] [ Authority ] [ Points ] [ Notes ]

Depression - from suspicion to initiating management
Lecture notes (LPR-049)
[ Home ] [ Facilitator ] [ Goals ] [ Authority ] [ Notes ]

Message from your Facilitator, Dr Natalie Burch:
Hi, Darren. When you have finished, click the 'mark entire document complete' button so that it is recorded in your learning journal.

2.1 Flat affect

Affect is described as the external expression of the internal mood state. This is expressed through body language, posture, gait, facial expression and communication of emotion verbally.

The affect of another person has a profound effect on us. Consider the variation in response when you meet a friend who is elated and optimistic about a future event, as compared with your response to a person whom you consider to be often 'depressed' and hopeless. With the first, your response is usually similar and sharing of the elation occurs, whereas with the second, you feel flat, overwhelmed and weighed down. The same response occurs with our patients.

As a clinician, you must be sensitive to a patient's affect and be aware of the possibility of depression in patients who present with a 'flat' affect. The exception to this is in the case of masked depression, where a superficially positive affect may cover underlying depression.

Mr Pullen, here is a PriMeD workshop. I look forward to liaising and providing the services below!

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Managing depression in general practice

Workshop (LMO-005)

[Home] [Facilitator] [Goals] [Authority] [Notes]

Status: [ ]
Estimate: 120 mins

Depression – from suspicion to initiating management

Lecture notes (LPR-049)

[Home] [Facilitator] [Goals] [Authority] [Notes]

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Estimate: 15 mins

Message from your Facilitator, Dr Natalie Burch:

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[Contact Dr Natalie Burch]

2.2 Negative thinking patterns

As the depressive illness progresses, a person's thinking will become more negative. They focus their thoughts on life - past, present and future - and often on their relationships in negative thinking patterns.

Their language will also include increasing hopelessness and powerlessness. Feelings of self-worth will often change and vary from loss of self-value or esteem to almost delusional thinking about their own degraded nature and uselessness.

Ruminations or persistent thoughts of a morbid nature will be present and ideas of a suicidal nature may be present. Ruminant thinking may interfere with sleep and activities, and a loss of interest in things previously enjoyed or done spontaneously may ensue.

There may be a loss of interest in care of self or others for whom a patient is responsible.

[Contact Dr Natalie Burch]

Mark entire document complete

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Workshop Home

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2.3 Neurovegetative symptoms

Neurovegetative symptoms are the physical and physiological features of depression.

Either spontaneously, or in response to questioning, a person experiencing depressive symptoms may describe changes in sleep pattern, and alteration of mood throughout the day (the mood is often worse on waking and may result in a patient staying in bed). These changes are caused by an altered circadian rhythm.

A depressed patient may describe a change in appetite, which may have resulted in a weight change. Some patients may feel they have to force themselves to eat while others may have a heightened appetite and crave certain (especially sweet) foods. The ability to note weight variations is another good reason for clinical thoroughness.

Change in libido is a common presentation in depressive disorders amongst males. Altered bowel habit and even extreme constipation may be an early presentation. Tiredness, becoming fatigued easily and lack of energy are probably the most common presentations to a general practitioner after U.R.T.I., and they are also one of the first symptoms of a depressive disorder. Increasing severity of the disorder will result in this symptom becoming an obvious sign to the clinician, in that the patient becomes slowed in cognition and movement; that is, suffers from psychomotor retardation.

Less common, are presentations in which the patient describes increased sleep (hypersomnia), weight gain and increased libido, with increased psychomotor activity and agitation.
Managing depression in general practice

Workshop (LMO-005)

Lecture notes (LPR-049)

Message from your Facilitator, Dr Natalie Burch:

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2.4 Masked depression

The term masked depression is used to describe the presentation of significant depression in persons with the risk factors listed earlier (and others) but who do not volunteer their symptoms, or give positive responses to your questioning about possible symptoms. Suspect the diagnosis in patients who are frequent attendees of your clinic, often without significant illness.

People with masked depression may initially complain of physical aches and pains and make no reference to their low mood. The term somatisation applies to these patients, but should be differentiated from somatisation disorder as described in DSM-IV. Adolescents and children may also mask their depression by presenting with excessive irritability, hyperactivity and aggression rather than the characteristic sadness and apathy.
Managing depression in general practice
Workshop (LMO-005)
Status: [ ]
Estimate: 120 mins

Depression – from suspicion to initiating management
Lecture notes (LPR-049)
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Estimate: 15 mins

Message from your Facilitator, Dr Natalie Burch:
Hi, Darren. When you have finished, click the ‘mark entire document complete’ button so that it is recorded in your learning journal.
[Contact Dr Natalie Burch]

3.0 Disorders which may be associated with depression

Co-morbid mental disorders
Depressive symptoms commonly occur accompanied by symptoms and signs of other mental disorders including:

- generalised anxiety disorder
- panic disorders with or without agoraphobia
- dementia
- schizophrenia
- obsessive compulsive disorder
- personality disorders
- attention deficit disorders
- substance abuse (alcohol and drug abuse.)

If symptoms of a number of conditions occur, it is sometimes difficult to decide which is the most significant in terms of treatment urgency, and whether one is secondary to the other e.g. depressive symptoms commonly lead patients to use substances to ‘survive the day or night’. Treat the apparently predominant condition first, and then the other condition will be more clearly identified.

Co-morbid physical disorders
Depression is commonly associated with major physical illness or surgery and frequently accompanies chronic pain states. Untreated depression in physical illness interferes with the patient’s recovery rate and successful outcomes. Appropriate investigations for physical illness are imperative, as depressive symptoms are often the first presentation of occult malignancy. In this case both illnesses need treating, as each is associated with possible mortality.
Managing depression in general practice
Workshop (LMO-005)
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Depression – from suspicion to initiating management
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4.0 Rational approach of the initial management of depression

Your initial plan of management is dependent on your assessment of the severity of the patient’s illness and patient’s suicide risk. Major depressive disorder is associated with a high mortality, with 15% of patients with severe symptoms of the disorder dying by suicide. The risk of suicide is greatest in patients presenting early in the course of the disorder, in prolonged episodes and in any severe episode with loss of hope.

It is imperative to develop a strategy for asking patients about their thoughts of suicide or of any plan to commit suicide. This is one situation where clinician diffidence, embarrassment or ignorance of the significance of this line of questioning can be tragic.

Consider:

- level of intent to die
- fixed vs. ambivalent suicidal ideation
- ‘preparation’, e.g. making a will, ensuring affairs are in order, collecting tablets
- presence of a plan/suicide note
- lethality of chosen means
- access to and knowledge of how to use those means to self harm
- presence or absence of some protective individual/significant other/meaningful relationship
- presence of deterrents
- purpose/reason for self harm.

Remember that new events or changes in an individual’s psychosocial situation will alter his/her risk status.

The extent of the patient’s family and social support is another important consideration. It is important to be aware of the local
psychiatric services and the means of access, and to use them appropriately for each patient.

Assessment of any possible aetiological features is important. However, in a patient who is severely depressed, ruminations which take up the whole of the day's thoughts, may have no part in causation of the distress, although it may be difficult to convince the patient of this.

If there is an underlying cause e.g. conflict or marital distress, bereavement or loss of job, then treatment of purely the symptoms will not be successful in the long-term. If the patient's cognitive function is impaired at the time of presentation, then working with them at a level which helps to find solutions to the cause may be extremely difficult. On the other hand, if their depressive disorder is considered mild to moderate in severity, with only some impairment in functioning, finding solutions with them will almost certainly minimise the depressive symptomatology.

Awareness of premorbid functioning is important, and gives indications as to possible recovery and completeness of recovery. Remember that if an individual was highly dysfunctional prior to developing a major depressive disorder, or has a personality disorder, then that will continue after the illness is treated.

Practice Tip!
A patient whose predominant presentation is somatisation may represent a particular challenge - the diagnosis of depression is not easily accepted. It can be useful to provide a simple neurophysiological explanation and an analogy of depression to another disorder of body chemistry (such as thyroid disease or diabetes). Many patients have a completely psychosocial model for depression and the notion that chemicals are involved is quite novel for them!

- 4.1 Management options for depression
  - 4.1.1 Hospitalisation
  - 4.1.2 Specialist referral
  - 4.1.3 Antidepressant medication
  - 4.1.4 Psychotherapy
Managing depression in general practice

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Depression – from suspicion to initiating management

Lecture notes (LPR-049)

Message from your Facilitator, Dr Natalie Burch:
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4.1 Management options for depression

While the following all have a role in the treatment of depressive illness, the selection of the most appropriate management regime requires careful consideration of the patient, the nature and severity of the illness, his/her family and social situation, your own competence and confidence to manage depression and the availability of appropriate health services. Most depressive disorders can be successfully managed in a general practice setting.

Golden Rule!

Goal of Treatment

- In the acute phase, the goal of treatment with antidepressant medication is the remission of major depressive disorder (MDD) symptoms.

Definition!

Remission in Major Depression =

- Hamilton Psychiatric Rating Scale (HAM-D) score ≤7.
- patient asymptomatic
- psychosocial and occupational functioning restored.

- 4.1.1 Hospitalisation
- 4.1.2 Specialist referral
- 4.1.3 Antidepressant medication
- 4.1.4 Psychotherapy
Managing depression in general practice
Workshop (LMO-005)

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Depression – from suspicion to initiating management
Lecture notes (LPR-049)

Home [ Facilitator ] [ Goals ] [ Authority ] [ Notes ] Estimate: 15 mins

Message from your Facilitator, Dr Natalie Burch:
Hi, Darren. When you have finished, click the ‘mark entire document complete’ button so that it is recorded in your learning journal.

4.1.1 Hospitalisation

Consider hospitalisation:

- if there is an assessed suicide risk or the person is dangerous to others because of disturbed thinking e.g. psychosis in depression. (Mental Health Act regulation may be necessary in some situations. Obtain a copy of this and relevant mental health forms.)
- if the patient is severely agitated, or distressed
- if the patient has severe psychomotor retardation and is unable to care for themselves
- if there is significant medical care required e.g. intercurrent illness or dehydration.

Your Wyeth Rep, Julie Purnell

RSVP for the "Managing Mental Health Issues for Young People" two-day workshop [ More... ]

Message from your Facilitator, Dr Natalie Burch:
Mr Pullen, here is a PriMeD workshop. I look forward to liaising and providing the services below!

Tell a colleague about PriMeD!
Managing depression in general practice
Workshop (LMO-005)

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Depression – from suspicion to initiating management
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Message from your Facilitator, Dr Natalie Burch:
Hi, Darren. When you have finished, click the 'mark entire document complete' button so that it is recorded in your learning journal.

[ Contact Dr Natalie Burch ]

4.1.2 Specialist referral
Consider specialist referral:

- if further assessment is necessary, or
- if the diagnosis is not clear e.g. if schizophrenia or other illness is a possibility (O.C.D. or Bipolar Disorder).

You may wish to discuss the case and your management plan with a specialist and then refer later if necessary, that is, a 'shared care model'.

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Message from your Facilitator, Dr Natalie Burch:

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4.1.3 Antidepressant medication

Consider antidepressant medication as the first line of treatment:

- if the patient experiences severe and/or prolonged mood disturbance
- if neurovegetative symptoms are present
- if episodes are recurrent
- if medication has been effective in the past
- if the patient has a positive family history of mood disorder (either depressive or bipolar)
- if, as mentioned in the next section, supportive psychotherapy (the talking therapies) is not effective.

Combinations of therapies

Combination treatments involving antidepressant medication and a form of psychotherapy are often necessary in treating the depressed patient. Inpatient or outpatient treatment programmes may also be necessary. Lithium augmentation of the antidepressant can sometimes be a useful strategy, but consultation with a psychiatrist before proceeding is recommended.

Reflection!

Less than 10% of patients with major depression receive correct treatment, high enough dosage or sufficient duration. [4, 5]
Managing depression in general practice
Workshop (LMO-005)
[Home] [Facilitator] [Goals] [Authority] [Notes]

Estimate: 120 mins

Depression – from suspicion to initiating management
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Message from your Facilitator, Dr Natalie Burch:
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4.1.4 Psychotherapy
Psychotherapeutic intervention may target specific symptoms of the disorder, or deal with the current psychosocial problems that may be causative in the depression. Psychotherapy is recommended as a stand-alone first line treatment only for patients with their first onset of mild to moderate major depression.

- Cognitive andBehavioural Therapies target depressive symptoms and help patients to identify and challenge any negative thoughts or underlying unhelpful belief systems and assumptions. This form of psychotherapy minimises the relapse rate of depressive symptoms if skills in identifying unhelpful patterns of functioning are obtained. Behaviours which have become unhealthy in that they maintain depressive symptoms are replaced with others which promote problem solving, social skills, training and goal setting.

- Interpersonal Psychotherapies aim at resolving interpersonal or intrapersonal conflicts which again may maintain the depression. Various useful psychotherapeutic models are available, ranging from analytical to solution-focused and brief therapy. Consultation with a specialist is often advisable.
Managing depression in general practice

Workshop (LMO-005)

Status: 

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Depression – from suspicion to initiating management

Lecture notes (LPR-049)

Status: 

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Message from your Facilitator, Dr Natalie Burch:

Hi, Darren. When you have finished, click the 'mark entire document complete' button so that it is recorded in your learning journal.

References


Further reading

- Sculberg HC, Burns BJ. Mental Disorders in Primary Care: Epidemiologic, Diagnostic and Treatment Research Directions. General Hospital Psychiatry 1988;10:79-87.
Your Wyeth Rep, Julie Purnell, here is a PriMeD workshop. I look forward to liaising and providing the services below!

- Starter Packs
- Request a Visit
- Support Material
- Medical Enquiries

RSVP for the "Managing Mental Health Issues for Young People" two-day workshop

Sue Bussell (age 41) wants to run again!

Case (CBL-037)

Message from your Facilitator, Dr Natalie Burch:
What are some possible diagnoses at this point?

Contribute to this discussion

Differential diagnosis time
What do you think are the possible diagnoses for Sue at this stage?

Messages: 2

Summary View | 1 - 2
Show most recent message: First | Last

Posted by Dr Natalie Burch at 9:08AM on October 4, 2003

Facilitators comment
Can you think of what's going on yet or do you need to know some more?

Posted by Dr Medhat Magar at 1:12PM on October 6, 2003

DD
DD of Depression and Anxiety

Messages: 2

Archived Messages: 52

Contribute to this discussion

Next step: What clues did you find in the history?

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Managing depression in general practice

Sue Bussell (age 41) wants to run again!

Message from your Facilitator, Dr Natalie Burch:
What are some possible diagnoses at this point?

Contribute to this discussion

Differential diagnosis time
What do you think are the possible diagnoses for Sue at this stage?

Differential diagnosis
I think that Sue suffers from Depression but this could be secondary to an underlying organic illness I wonder if she has one of the following: Hypothyroid. Diabetes. Possible Neoplasm. Perimenopausal

Differential diagnosis
She is probably suffering from anxiety/depression but Chronic Fatigue Syndrome[if such a diagnosis really exists!], and perimenopause have to be considered and she has to be checked for hypothyroidism, diabetes, and possible malignancy.

http://www.medeserv.com.au/primed/myprimed/unit/index.cfm?txtUnitName=LMO-005&IngInteraction1D_B=376&IngInteraction1D_C=338&PD_Arc=1

Page 1 of 2
we need to exclude metabolic disorder for this lady

Sue Bessell
Depression
Hypothyroidism
?Anaemia
Do a few routine blood tests

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perimenopause(still on o.c. though)
DEPRESSION
c.f.s. ?
autoimmune condition
occult malign.

Sue diffdx
hypothyroid
NIDDM
perimenopause(still on o.c. though)
DEPRESSION
c.f.s. ?

Diff diagnosis
I agree, hypothyroidism, depression, also postviral syndrome are all possibilities

Archived Messages: 52

Return to current messages

Contribute to this discussion

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

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Sue Bussell (age 41) wants to run again!

Case (CBL-037)

Estimate: 15 mins
Status: IN

Message from your Facilitator, Dr Natalie Burch:
Thanks Darren for contributing.

Contact Dr Natalie Burch

Your Name: * Mr Darren Pullen
Your Email: Darren.Pullen@utas.edu.au
Subject: *

Differential diagnosis time
What do you think are the possible diagnoses for Sue at this stage?

Messages: 2

Posted by Dr Natalie Burch at 9:08AM on October 4, 2003

Facilitators comment
Can you think of what's going on yet or do you need to know some more?

Posted by Dr Medhat Magar at 1:12PM on October 6, 2003

DD
DD of Depression and Anxiety

Messages: 2
Panel Commentary 1

Possible diagnoses to consider include:

- depression
- OCP related depressed mood
- anxiety disorder
- hypothyroidism
- premature menopause
- chronic viral illness
- immunodeficiency, e.g. HIV

Historical features that could suggest depression include:

- Symptom list - especially her irritability and tiredness. Sue may be presenting with somatisation of her depression.
- Her admission that not being able to run made her feel "sad and frustrated".
- Negative comments about herself e.g. "...I am such a bad wife and mother!".
- Giving up on her loved sport of running could suggest anhedonia or social withdrawal, given that the sport was a large part of her family and social life.
- Sue has had lots of life changes recently - e.g. going back to Uni, husband being made redundant.
- The behaviour problems noted in her son would provide an ongoing significant stress. Further, these behaviour problems may be a reaction from the son to other stress at home.

Message from your Facilitator, Dr Natalie Burch:
The panel has some comments to make on the discussion topics.

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Managing depression in general practice  
Workshop (LMO-005)

Self Assessment - managing depression

Question 1. Which of the following are side effects associated with the use of tricyclic antidepressants?

There may be more than one correct answer.

☐ A) sedation  
☐ B) blurred vision  
☐ C) sexual dysfunction  
☐ D) urinary retention  
☐ E) postural hypotension

Question 2. Is the following statement true or false?
The use of tramadol (Tramal) in patients on selective serotonin reuptake inhibitors (SSRIs) may precipitate 'serotonin syndrome'.

☐ A) True  
☐ B) False

Question 3. Which of the following are recognised risk factors for the development of a depressive disorder?

There may be more than one correct answer.

☐ A) History of post-partum depression  
☐ B) Family history of depressive disorder  
☐ C) Female with 3 or more children at home  
☐ D) Serious medical condition  
☐ E) Unemployment

Question 4. Is this statement true or false?
Patients suffering from depression may have increased psychomotor activity and increased libido.

☐ A) True  
☐ B) False

Question 5. Is the following statement true or false?
When prescribing an antidepressant for a severely depressed patient, the
aim is to initially prescribe the highest tolerated dose.
☐ A) True
☐ B) False

**Question 6.** Is this statement true or false?
A patient that doesn’t volunteer any depressive symptoms, and gives normal or positive responses to evaluation questions, may still be suffering from depression.
☐ A) True
☐ B) False

**Question 7.** In the formulation of an initial management plan for depression, which of the following takes precedence?
*Choose one answer.*
☐ A) The patient’s preferred treatment option.
☐ B) The patient’s work history.
☐ C) The wishes of the patient’s family.
☐ D) The patient’s suicide risk.
☐ E) The severity of the patient’s depressive symptoms.

**Question 8.** Is the following statement true or false?
ECT is no longer used in the treatment of depression?
☐ A) True
☐ B) False

**Question 9.** Which of the following statements about ‘male menopause’ are true?
*There may be more than one correct answer.*
☐ A) The symptoms experienced are similar to female menopause, including depression, flushes and sweats, and poor concentration and memory.
☐ B) All males are thought to experience climacteric syndrome.
☐ C) It is associated with a decrease in bioavailable testosterone dependent on age and physical activity.
☐ D) The level of depressed mood experienced is dependent on age, weight change and level of physical activity.

**Question 10.** Which of the following statements about post-natal depression (PND) is false?
*Choose one answer.*
☐ A) PND is one of the most frequent and serious complications of childbirth.
☐ B) It is generally accepted that PND affects 10-20% of childbearing women.
☐ C) Risk factors include operative birth and infant health problems.
☐ D) Fluoxetine is safe to prescribe for PND because resultant infant plasma concentrations are negligible.
Managing depression in general practice  
Workshop (LMO-005)  
[ Home ]  
[ Facilitator ]  
[ Goals ]  
[ Authority ]  
[ Points ]  
[ Notes ]  

Self Assessment - managing depression  
Quiz (QUS-021)  
[ Home ]  
[ Facilitator ]  
[ Goals ]  
[ Authority ]  
[ Notes ]  

Message from your Facilitator, Dr Natalie Burch:  
You have successfully completed the quiz, Darren. You can repeat it at any time if you wish.

You answered 9 of 10 correctly.

Question 1. Which of the following are side effects associated with the use of tricyclic antidepressants?  
There may be more than one correct answer.

- ✔ A) sedation
- ✔ B) blurred vision
- ✔ C) sexual dysfunction
- ✔ D) urinary retention
- ✔ E) postural hypotension

Explanation

Side effects of tricyclic antidepressants may be divided into three categories:

- anticholinergic (blurred vision, dry mouth, urinary retention)
- alpha-adrenergic (sedation, postural hypotension, sexual dysfunction)
- histaminergic (sedation).

Question 2. Is the following statement true or false?  
The use of tramadol (Tramal) in patients on selective serotonin reuptake inhibitors (SSRIs) may precipitate 'serotonin syndrome'.

- ✔ A) True
- ✔ B) False

Explanation

Serotonin syndrome can occur when an additional serotonergic agent exacerbates the effect of an SSRI. It is characterised by abdominal cramps, tremulousness, hyperpyrexia, confusion, disorientation, profuse sweating and coma. The SSRI and any other serotonergic agents should be discontinued immediately. If symptoms are severe, the patient should be referred to an emergency department. Some drugs which can increase serotonin concentration include MAOIs, tramadol (Tramal), sumatriptan...
(Imigran), lithium, St. John’s Wort, ginkgo biloba and atypical antipsychotics. Please see LPR-056 for further details.

Question 3. Which of the following are recognised risk factors for the development of a depressive disorder?

There may be more than one correct answer.

☐ A) History of post-partum depression
☐ B) Family history of depressive disorder
☒ C) Female with 3 or more children at home
☐ D) Serious medical condition
☐ E) Unemployment

Explanation

All these, and a number of others, are recognised risk factors in the development of depressive disorder. Combinations of risk factors give increased risk.

Question 4. Is this statement true or false?

Patients suffering from depression may have increased psychomotor activity and increased libido.

☒ A) True
☐ B) False

Explanation

These symptoms are unusual but do occur in some patients. More commonly, symptoms include decreased psychomotor function and decreased libido.

Question 5. Is the following statement true or false?

When prescribing an antidepressant for a severely depressed patient, the aim is to initially prescribe the highest tolerated dose.

☒ A) True
☐ B) False

Explanation

When prescribing an antidepressant:

• give an adequate dose for an adequate duration
• avoid premature dosage increase
• avoid premature change of drugs
• avoid using antidepressant combinations.

Using a high initial dose of an antidepressant may lead to unacceptable side effects and consequently decrease patient compliance, leading to a delay in remission of depressive symptoms.

Question 6. Is this statement true or false?

A patient that doesn’t volunteer any depressive symptoms, and gives normal or positive responses to evaluation questions, may still be suffering from depression.

☒ A) True
B) False

Explanation

People with masked depression may initially complain of physical aches and pains and make no reference to their low mood. The term somatisation applies to these patients, but should be differentiated from somatisation disorder as described in DSM-IV. Adolescents and children may also mask their depression by presenting with excessive irritability, hyperactivity and aggression rather than the characteristic sadness and apathy.

Question 7. In the formulation of an initial management plan for depression, which of the following takes precedence?
Choose one answer.

- A) The patient's preferred treatment option.
- B) The patient's work history.
- C) The wishes of the patient's family.
- D) The patient's suicide risk.
- E) The severity of the patient's depressive symptoms.

Explanation

The patient's risk of suicide is of the utmost importance in the formation of an initial management plan for depression.

Question 8. Is the following statement true or false?
ECT is no longer used in the treatment of depression?

- A) True
- B) False

Explanation

ECT is still a very effective treatment for severe depressive episodes especially if there are multiple physiological symptoms and signs and/or if psychosis is present. Specialist referral is essential.

Question 9. Which of the following statements about 'male menopause' are true?
There may be more than one correct answer.

- A) Menopause, including depression, flushes and sweats, and poor concentration and memory.
- B) All males are thought to experience climacteric syndrome.
- C) It is associated with a decrease in bioavailable testosterone dependent on age and physical activity.
- D) The level of depressed mood experienced is dependent on age, weight change and level of physical activity.

Explanation

The male climacteric syndrome or 'male menopause', describes a drop in testosterone in later life characterised by symptoms similar those experienced in the female menopause. Such symptoms include: depression, nervousness, flushes and sweats, decreased libido, erectile dysfunction, increased fatigability and poor concentration and memory [5]. Not all males experience climacteric syndrome. The Rancho Bernado study [6] found a
graded, stepwise decrease in bioavailable testosterone was associated with an increased level of depressed mood. This was independent of age, weight change and physical activity.

Question 10. Which of the following statements about post-natal depression (PND) is false?

Choose one answer:

A) PND is one of the most frequent and serious complications of childbirth.
B) It is generally accepted that PND affects 10-20% of childbearing women.
X) C) Risk factors include operative birth and infant health problems.
D) Fluoxetine is safe to prescribe for PND because resultant infant plasma concentrations are negligible.

The correct answer is:

D) Fluoxetine is safe to prescribe for PND because resultant infant plasma concentrations are negligible.

Explanation

It is generally accepted that PND affects between 10-20% of childbearing women. At present, TCAs are considered the safest medication for PND as they have been on the market the longest, with few, if any, adverse effects on breastfed babies. Generally SSRIs are excreted into breast milk in low concentrations, with resultant infant plasma concentrations being negligible or not detected. However fluoxetine is the exception, as it, and its metabolites with long half-lives, have the potential to accumulate in the infant. Breastfed infants of mothers treated with fluoxetine have been shown to have clinically significant plasma concentrations of the drug.
The 3 Step Mental Health Process

Practice tool - assessment tool (TAT-007)

Message from your Facilitator, Dr Cherri Ryan:
These three proformas can be used when performing a mental health assessment, plan and review. There is also a page of information briefly explaining the use of the proformas.

Click on each PDF file to see the printable practice tool page. To get back from the printable screen, use your browser’s back button.

The 3 Step Mental Health Process proformas and operator instructions

The 3 Step Mental Health Process is an integral part of the Commonwealth Government’s Better Outcomes in Mental Health Care initiative. In order for GPs to become involved in the initiative and use the specific associated item numbers, they will need to make contact with their local Division of General Practice and participate in the Familiarisation Training prepared by the Australian Divisions of General Practice Ltd and funded by the Commonwealth Department of Health and Ageing.

Proformas for the 3 steps have been developed as a resource for general practitioners and can be downloaded and printed out by clicking on them below. Further training in their use is provided in the Familiarisation Training GP and Practice Manual - Better Outcomes in Mental Health Care.

The 3 Step Mental Health Process consists of:

1. an assessment
2. preparation of a mental health plan
3. a review of the mental health plan.

The mental health assessment must include:

- a detailed biological, psychological and social history, including the presenting complaint
- a mental state examination
- a risk assessment
- a diagnosis and/or formulation (assess biological, psychological and social factors predisposing, precipitating, perpetuating and/or protecting against a mental health problem)
- the administration of an outcome tool, except where it is considered clinically inappropriate.

The development of a mental health plan must include:

- a discussion with the patient about the mental health
formulation and/or diagnosis
- a discussion with the patient on treatment options, including appropriate support services
- the provision of psycho-education
- a plan for treatment of the assessed mental health disorder/s and crisis intervention where appropriate
- a plan for relapse prevention if appropriate at this stage.

The written mental health plan should be prepared in conjunction with the patient and/or carer (with patient's consent). One copy of the plan should be given to the patient and one copy kept in the notes. If the assessment suggests that a multi-disciplinary care plan is required, involving other health professionals, then an Enhanced Primary Care plan may be more appropriate.

The mental health review stage must include:
- a review of the patient's progress against the goals outlined in the mental health plan
- modification of the mental health plan if required
- checking, reinforcing and expanding education
- a plan for relapse prevention, if not previously provided
- re-administration of the outcome tool used in the assessment stage, except where considered clinically inappropriate.

This is a formal review stage as part of the 3 Step Process. However, this model can be used as a guide for regular ongoing reviews to monitor health plan outcomes.

In 'Assessment scales for psychological distress and depression' (TAT-008) you will find one of the recommended outcome tools, the Kessler Psychological Distress Scale (K10), which can be used in the assessment and review phase of the 3 Step Process.

Saving the PDF file:
Right-click on the link below and a dialogue box will appear. Select “Save Target/Link as...” You will then be asked where you wish to save the file. Select the directory where you want to save the file. Once saved, you can then open and review the file as per normal.

Printing the PDF file:
If your browser automatically loads PDF files in a window, select "File" and "Print". Use your "Back Button" to return to this Unit.

- Click here for a printable version of "Mental health assessment tool"
- Click here for a printable version of "Mental health plan tool"
- Click here for a printable version of "Mental health review tool"

Important
To view this tool, you will need Adobe Acrobat PDF Reader.

Finished with this item?
Mental health assessment

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**Mental health assessment continued...**

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<th>Patient Information</th>
<th>Mental Health Examination</th>
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<td>Insight</td>
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**Patient Education (please tick)**

Eligibility for the Better Outcomes in Mental Health Care Initiative (please tick)

This document will be maintained in accordance with the Commonwealth Privacy Legislation.
# Mental health plan

**Patient Name:** [ ]

**Date:** [ ]

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<th>Patient Diagnosis</th>
<th>Care</th>
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**Patient Education (please tick):**

- [ ] Box 

**Copy of MH plan given to patient:**

- [ ]

**Patient Signature:** [ ]

**GP Signature:** [ ]

**Date for mental health review (between 1–6 months):**

- [ ]

This document will be maintained in accordance with the Commonwealth Privacy Legislation.
Mental health review

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<th>Follow-up Action Plan</th>
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This document will be maintained in accordance with the Commonwealth Privacy Legislation.
Assessment Scales for Psychological Distress and Depression

Practice tool - assessment tool (TAT-008)

Status: [ ]
Estimate: 15 mins

Message from your Facilitator, Dr Cherri Ryan:

Hello, Darren. The K10 can be used to gain an understanding of a person's level of psychological distress and to monitor progress. It is one of the recommended outcome tools to be used in the 3 Step Mental Health Process as part of the Better Outcomes in Mental Health Care initiative. I also encourage you to consider using the patient self-assessment scale for depression that you may find useful in your practice.

Items

Kessler Psychological Distress Scale (K10) and operator instructions

The K10 is a scale of psychological distress developed for use in epidemiological surveys, with sensitivity and specificity data that indicate it is an appropriate screening tool to identify likely cases of people with a mental disorder in the community. It is one of the recommended outcome tools for use in the assessment and review process of the 3 Step Mental Health Process in the Better Outcomes in Mental Health Care initiative.

Self-assessment scale for depression

A visual analogue self-assessment scale for monitoring recovery from depression.

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

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Assessment Scales for Psychological Distress and Depression
Practice tool - assessment tool (TAT-008)

Learning Goals:

- Consider the use of an outcome tool, such as the Kessler Psychological Distress Scale (K10), when conducting a mental health assessment or mental health review, in your clinical practice.
- Consider using a patient self-assessment scale for monitoring recovery from depression in your practice.

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.
Assessment Scales for Psychological Distress and Depression

Practice tool - assessment tool (TAT-008)

Message from your Facilitator, Dr Cherri Ryan:

This scale can be used to gauge a person's level of psychological distress and to monitor their progress during treatment. It is one of the recommended outcome tools for use in the assessment and review process of the 3 Step Mental Health Process in the Better Outcomes in Mental Health Care initiative. See TAT-007, LPR-053 and LPR-054 for more information.

Click on the PDF file to see the printable practice tool page. To get back from the printable screen, use your browser's back button.

Kessler Psychological Distress Scale (K10) and operator instructions

As part of the 3 Step Mental Health Process, in the Commonwealth Government's Better Outcomes in Mental Health Care initiative (see TAT-007 and LPR-053 for more information), an outcome tool is to be utilised during the assessment and review phases, except where it is considered clinically inappropriate.

Outcome tools can be useful in monitoring a patient's progress. The choice of outcome tool is at the clinical discretion of the GP, however three tools are currently recommended under the initiative: the Kessler Psychological Distress Scale (K10); the Short Form Health Survey; and Health of the Nation Outcome Scales (HoNOS). The Familiarisation Training for the initiative (provided through local Divisions of General Practice) provides information on the use of the K10. Click on the link below to download a printable version of the K10 and a brief explanation about the scale.

Saving the PDF file:
Right-click on the link below and a dialogue box will appear. Select "Save Target/Link as..." You will then be asked where you wish to save the file. Select the directory where you want to save the file. Once saved, you can then open and review the file as per normal.

Printing the PDF file:
If your browser automatically loads PDF files in a window, select "File" and "Print". Use your "Back Button" to return to this Unit.

- Click here for a printable version of "Kessler Psychological Distress Scale (K10)"
- Click here for a printable version of the "Kessler Psychological Distress Scale (K10) operator instructions"
Important
To view this tool, you will need Adobe Acrobat PDF Reader.

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

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<table>
<thead>
<tr>
<th>Question</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>Little of the time</th>
<th>None of the time</th>
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<tbody>
<tr>
<td>In the past 4 weeks, about how often did you feel tired out for no good reason?</td>
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<td>In the past 4 weeks, about how often did you feel nervous?</td>
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<td>In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?</td>
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<td>In the past 4 weeks, about how often did you feel hopeless?</td>
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<td>In the past 4 weeks, about how often did you feel restless or fidgety?</td>
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<tr>
<td>In the past 4 weeks, about how often did you feel so restless you could not sit still?</td>
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<td>In the past 4 weeks, about how often did you feel depressed?</td>
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<td>In the past 4 weeks, about how often did you feel that everything was an effort?</td>
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<td>In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?</td>
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<td>In the past 4 weeks, about how often did you feel worthless?</td>
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</tbody>
</table>
Kessler Psychological Distress Scale (K10) operator instructions

The K10 is a scale of psychological distress developed for use in epidemiological surveys by Kessler et al. This scale was used in the 1997 Australian National Survey of Health and Well-Being and has been demonstrated to be a valid tool as a measure of psychological distress, with sensitivity and specificity data that indicate it is an appropriate screening tool to identify likely cases of people with a mental disorder in the community. There is a strong association between a high score on the K10 and a diagnosis of anxiety and affective disorders by DSM-IV or ICD-10 criteria as determined by the current Composite International Diagnostic Interview (CIDI). [2]

It is suitable for use as an outcome measure in people with anxiety and depressive disorders. The 10-item scale has five response categories:

- all of the time = 5
- most of the time = 4
- some of the time = 3
- a little of the time = 2
- none of the time = 1

The score is the sum of those responses. Scores range from 10 (no distress) to 50 (severe distress). The following scores are taken from the Clinical Research Unit for Anxiety Disorders website [3].

People who score 10-15 have one quarter the population risk of meeting criteria for an anxiety or depressive disorder as identified by the CIDI, and a remote chance of reporting a suicidal attempt in their lifetime.

People who score 16-30 have a one in four chance (three times the population risk) of having a current anxiety or depressive disorder and 1% chance (three times the population risk) of ever having made a suicide attempt.

People who score 30-50 have a three out of four chance (ten times the population risk) of meeting criteria for an anxiety or depressive disorder and 6% chance (20 times the population risk) of ever having made a suicide attempt.

The first group comprise 78% of the population, the second group comprises 20% of the population and the third group, 2% of the population. [3]

References:
Message from your Facilitator, Dr Natalie Burch:
Darren, you have finished this module. Congratulations. Please note that the lecture LPR-050 has been updated as of the 4 March, 2003, and I encourage you to read it again, even if you have done so previously.

You may like to move onto the other Mental Health Modules which are designed to integrate with this one. See the list on the PriMeD home page.

Starting off...
Welcome discussion
Introduce yourself to the group
Pre-test
It's not really a test, more a 'where is your thinking at now?' survey. Your answers are not available to the group. It won't take long and it is mandatory for 5 points per hour.

Workshop Units...

Depression – from suspicion to initiating management (LPR-049)
Are you recognising all of your depressed patients? Are you aware of the initial management options available when you make a diagnosis of depression? Do you always ask about suicide?

Hormones and depression (LPR-050)
An overview of the current views on depression and hormones for both men and women. This lecture was updated on the 4 March, 2003.

Overview of antidepressants (LPR-056)
Summary of the currently available antidepressants. This unit was updated on the 26 March 2003.

Bernadette’s hormones are driving her crazy! (CBL-032)
Is it menopause or is something else going on?

Heather presents with her 9 week old baby (CBL-034)
An easy diagnosis to miss!

Ben Hunter (age 24) – accident prone? (CBL-031)
A tricky situation for Dr Bob Blunt.

Sue Bussell (age 41) wants to run again! (CBL-037)
She’s had to give up her chosen and loved sport of distance running due to fatigue.

Self Assessment - managing depression (QUS-021)
This quiz tests your knowledge of the principles of assessing and managing depression.

Finishing up...
Post-test
The post-test serves two important purposes. We hope it provides
an opportunity for your personal reflection on the module. It is also an important component of our program evaluation.

**Evaluation**

We value your feedback. This evaluation will take less than 3 minutes and will greatly assist us to continually enhance the PriMeD program.

**Wrap up discussion**

Share your thoughts with the group and say good bye.

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

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APPENDIX 5

SAMPLE PRE AND POST TEST
LEVEL II
Managing depression in general practice
(Workshop LMO-005)

Message from your Facilitator, Dr Natalie Burch:
This won't take long, Darren. Be spontaneous, as your answers should reflect your normal approach and views. The group can't see your responses.

This activity is not really a "test", but a way of starting to think about the educational experience you are about to embark on. Only you and the Workshop Facilitator have access to your responses. The Facilitator uses the group's responses to "inform" the facilitation of the discussions e.g. focusing on issues which are important to the current group of participants. At the end of the Workshop, you can revisit your responses and see if your knowledge, skills, attitudes or practice behaviour have changed.

Question 1. What is the incidence of major depressive disorder (depression which meets the diagnostic criteria as per the DSM-IV) in women in the post-natal period?
- Less than 5 per cent
- Between 5 and 10 per cent
- Between 10 and 20%
- Between 20 and 30%
- Greater than 30%

Question 2. Is the following statement true or false?
Changes in hormone levels alone have been shown to be causally related to major depressive disorder.
- True
- False

Question 3. Is the following statement true or false?
ECT has no place to play in the modern management of major depressive disorders.
- True
- False

Question 4. What would you choose as first line pharmacotherapy for a patient with depression in the post-partum period who wishes to breast feed her infant, and why would you choose it?
Question 5. What would you do in the following situation?
A 35 year old male motor mechanic presents with somatic symptoms repeatedly. Having done an assessment and all the appropriate tests, you confidently make the diagnosis of depression. You decide that an antidepressant is the best therapeutic option. He rejects the idea totally and insists there is something "physically" wrong.

Question 6. How confident are you in your ability to manage the following situation?
A 49 year old teacher presents with a request for hormone replacement therapy and promptly bursts into tears. Her periods have been irregular for 6 months; she has mild symptoms of oestrogen deficiency; and she complains of insomnia, stress and weepiness to the point where she is avoiding going to work.

(1 = very unconfident, 2 = unconfident, 3 = neutral, 4 = confident, 5 = very confident)

0 1 0 2 0 3 0 4 0 5

Question 7. What is the appropriate risk management for a patient with newly diagnosed severe depression who admits to suicidal ideation during the assessment.
(Choose one or more)
□ Admission to a psychiatric hospital as a voluntary or involuntary patient.
□ Frequent consultations and supervision by relatives.
□ "No suicide" contract.
□ Other

Other management

Submit
APPENDIX 6

LEVEL III SURVEYS

LEARNING TOOL

AND

NON-LEARNING TOOL
Learning tool Level III survey

The learning tool survey is nearly identical to the following non-learning tool survey which is given in full. Except that as with all the Level III surveys they ask specific questions which relate to the module that was undertaken and they contain a tool use specific question.

The tool use question was:

“Will you/have you implemented the (named tool) in practice” – the responses were not interested, not helpful, maybe use, probably use and definitely use.

This question was within the Practice area of the survey before the “Will you implement changes to your practice?”
Managing depression in general practice  Status: E

Home | Facilitator | Goals | Authority | Points | Notes

Message from your Facilitator, Dr Natalie Burch:
Please complete this evaluation, Darren. As well as giving the PriMeD team useful feedback, it is a College requirement for accredited programs.

[Contact Dr Natalie Burch]

Important!! Completion of this form is required to gain CME points. It will take about 3 minutes to complete this form. Information provided by you will be used to evaluate this workshop. Suggestions will be incorporated into future workshops where possible.

Learning goals
Rate each of the goals as per the following scale:
1 - Unable to meet learning goal
3 - Able to meet the goal to a major extent
5 - Can confidently meet the goal

Be able to assess depressed patients.
0 1 2 3 4 5

Be able formulate rational initial management plans.
0 1 2 3 4 5

Have a current view of the contribution of hormones to depression (pregnancy, childbirth and menopause).
0 1 2 3 4 5

Develop the particular skills required to identify and initiate management in masked depression and somatisation.
0 1 2 3 4 5

Comments?

Resources - Lectures
Did you read the resource material?
(Choose one)
0 Only chose to use the bits that interested me
0 Skimmed all the resource material
0 I studied the resource material fully

Was the resource material clear and easy to understand?
(Choose one)
0 Unclear/difficult to understand
0 Mostly clear and easy to understand
0 Clear and easy to understand

Did the resources help you meet the learning objectives?
(Choose one)
- No
- Somewhat
- Yes

Did the resources help you answer the questions attached to the cases?
(Choose one)
- No
- Somewhat
- Yes

Comments?

Quizzes
Did the questions test useful theoretical knowledge?
(Choose one)
- No
- Somewhat
- Yes

Generally, how difficult were the questions to answer?
(Choose one)
- Very easy
- Moderately easy
- Challenging, caused me to think

Comments?

Cases
Were the cases typical of those you encounter in your practice?
(Choose one)
- Very typical
- Fairly typical
- Not typical (and I am in mainstream general practice)
- Not typical (but my practice is not mainstream general practice)

Comments?

To what extent did you find the cases useful as learning opportunities?
- Very useful
- Fairly useful
- Not useful

Practice
Will you implement changes to your practice?
(Choose one)
- My practice will remain unchanged
- I confirmed my practice
- I plan to review my practice
- I plan to change my practice
Facilitator
Did the facilitator promote your learning?
Choose one answer
- Yes
- No

Did the facilitator encourage discussion?
Choose one answer
- Yes
- No

Any comments?

Technical issues - screen layout
How easy did you find it to navigate this site?
(Choose one)
- Not at all easy
- Moderately easy
- Very easy

Comments?

Overall satisfaction
Would you participate in another PriMeD workshop?
- Yes
- Maybe
- No

What additional comments would you like to make?

Submit

Workshop Home

The material has been prepared for educational purposes. It should not be used as a substitute for clinical judgement and expert advice in particular circumstances of patient care.

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APPENDIX 7

ETHICS APPLICATION
**APPETLICATION FOR RESEARCH INVOLVING HUMAN SUBJECTS**

On completion please return to: Executive Officer
Research and Development Office
GPO Box 252-01
Hobart, Tasmania 7001 Australia

**LETTER OR INTENT**

If this Application relates to a previously submitted ‘Letter of Intent’, please indicate the Number relating to it.

**TITLE of Investigation (Titles should be consistent with those used on any external funding application)**

Effectiveness of web-based continuing professional education

---

**A. OUTLINE OF PROPOSAL**

**Applicants**

<table>
<thead>
<tr>
<th>Title/Name</th>
<th>Position</th>
<th>School or Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Judith Walker</td>
<td>Director</td>
<td>University Department of Rural Health</td>
</tr>
</tbody>
</table>

Phone: 63 24 4011  Fax: 63 24 4000  Email: Judith.Walker@utas.edu.au

**Other Investigator(s) / Students**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>School or Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darren Pullen</td>
<td>Masters Student</td>
<td>UDRH</td>
</tr>
</tbody>
</table>

Phone: 63 24 34 33  Fax: 63 24 3952  Email: Darren.Pullen@utas.edu.au

**Purpose**

- Research [x]
- Teaching [ ]

**Aims**

*Please give a concise description of the main objectives and/or hypothesis of the study.*
The purpose of the study is to perform a multilevel assessment of web-based continuing professional development (CPD) from the perspective of the reactions of the learners (level I), the learning of the participants (level II), and application of learning to the work environment (Level III).

The research topic is concerned with factorial influences on the effectiveness of web-based continuing professional education. The key question to be answered is: 'How does the nature of interaction influence effectiveness?'

The main research objectives are:

1. To quantify the overall effectiveness of web-based CPD instruction, and
2. To assess the influence of several factors (moderators) that are hypothesized to influence its effectiveness.

The first objective will examine whether:

i. learners enrolled in a web-based CPD course will have a positive reaction to the educational learning experience;

ii. learners enrolled in a web-based CPD course will acquire the knowledge disseminated through the educational experience; and

iii. learners will apply this ‘new’ knowledge to their work environment;

The second objective will examine the successful and unsuccessful web-based design influences and pedagogical techniques that enhance or distract from a positive learning experience in web-based CPD.

Justification

Explain why this particular study is worth doing; and the main advantages to be gained from it.

In an era of rapidly changing technology, it is crucial to assess and evaluate the effectiveness of educational interventions (Carew, 1997). When describing the effectiveness of web-based education, the definition of 'effective' must be carefully identified and described. Kirkpatrick (Kirkpatrick, 1998) described different levels of assessment of effectiveness. Level 1 is the participant’s reaction to the learning interaction, and is measured by satisfaction surveys. Level 2 is the measurement of cognitive gains from the educational event, and is often measured using a post test of knowledge. For comparative purposes, the pre test and post test design reveals changes that have occurred as a result of the educational event. Level 3 assessment is designed to address whether or not the cognitive learning has carried over into practical application.

Advances in information communication technology (ICT) and new developments in learning science provide opportunities to create new ways of designing and delivering education (Khan, 2001). Web-based learning is one part of the recent integration of ICT into the delivery of education, particularly CPD.

In relation to medical education it has been stated that medical professionals (Buckley, 1998) and educators (Reeves, 1999) often underestimate the value of research into the effectiveness of educational interventions. It has been suggested that difficulties assessing continuing medical education’s effectiveness are related to difficulties in answering the question ‘what works, in what context, with what groups, and at what cost?’ (Hutchinson, 1999). At the same time, traditional approaches to delivering medical education are being questioned and demands are being made for medical education to provide a broader vision of service that is more learner centered and based upon adult
learning theories (Headrick, 1998).

The use of the World Wide Web (WWW) to deliver education is an expanding area, which is testing new educational formats. However there are many critics who both underestimate and question the effectiveness of the WWW to deliver worthwhile educational outcomes, particularly when it is compared to traditional face-to-face interactions. Many of these claims are unfounded, yet not disproved – hence the proliferation of current studies, which state that ICT, compared to face to face instruction, 'show no significant learner improvement'. The 'no significant improvement' phenomenon may be influenced by the type of questions being asked. It is necessary to determine the overall effectiveness of the program before it can be compared to other delivery methods.

Period of investigation

Commencement date	February 2003       Completion date	December 2003

Funding

Source/potential source of funding and amount:

Do the investigators have any financial interest in this project? Yes ☐ No ☑

Funding Bodies: Amounts

Review of ethical considerations

Has this protocol previously been submitted to the Northern Tasmania Social Sciences Human Research Ethics Committee? If 'yes' please indicate when and the reference. Yes ☐ No ☑

Does this project need the approval of any other Ethics Committee? Yes ☐ No ☑

If 'YES', Please indicate below what Institutions are involved and what the status of the Approval? Other Ethics Committees: Status:
Relevant references

List references

(a) by the investigator;
(b) by others.


B. PROCEDURES

Detailed procedures

One web-based continuing professional development course will be evaluated. Med-e-Serv's online GP CPD program (PriMeD), which can be offered as stand alone units on topics such as management of depression through to complete programs. The courses are self-paced modular courses with no defined start or finish dates.

PriMeD is designed for doctors and is made up of a variety of learning experiences and clinical resources (lecture notes, clinical cases, practice tools, quizzes, clinical audits, patient support material....)

PriMeD is broken up into 15 minute usable bites and builds into comprehensive learning experiences (including workshops). PriMeD has a convenient personal learning journal system to automatically keep track of everything the participant does (whenever or wherever they do it).

Written information about the project will be made available on the respective web site (Appendix A).

Effectiveness of the courseware will be evaluated using several criteria, including learning achievement (cognitive), participant satisfaction with instructional courseware, instructional transactions occurring within the courseware and retrospective self-reported performance change.

This study has four distinct phases:

Phase 1

Pre and post course surveys (learning achievement) to measure participants' knowledge of the subject matter before and after participation (level 2). These surveys will include collection of participant data on demographics, computer experience, computer access and computer usage.

Phase 2

Courseware evaluation survey to collect information about participants' perception about the quality and
effectiveness of the web-based CPD course including participant satisfaction, learning and experiences of the web-based CPD course (level 1).

Phase 3
Post learning performance self-assessment survey, which is a retrospective pretest to post test performance survey to assess the effect of participation in the web-based CPD course on self-reported competencies specific to the clinical/procedural aspect of the web-based CPD course (level 3).

Phase 4
Using the data acquired in Phases 1 – 3, case studies of the two online courses will be developed for comparative analysis in order to describe the relation between the factors that effect interaction and course effectiveness. This will assist in explaining both the moderators impacting on effectiveness and also the nature and influence of interaction within web-based CPD.

Specific procedures

- Prior to starting the online course participants will be invited to complete an online knowledge test survey, which will be repeated on completion of the course, this survey looks at cognitive changes as a result of participating in the online course (survey 2).
- After completing the course participants will be invited to complete an online course evaluation survey; this survey will examine participants experiences with doing the online course (survey 3).
- In addition at the completion of the course a demographic profile survey and courseware content-instructional design survey will be completed (survey 1).

The survey instruments have not yet been finalised. If it is considered appropriate they will be submitted to the Ethics Committee as soon as they are ready. The purpose of this ethics application is to seek approval to publish the information sheet on the web and to gain in principle approval for the study.

Methods of analysis

A statistical package such as SPSS will be sued to gain more insight in the data by expressing them in quantitative form and then carrying out various analysis techniques. In addition to the more general ways of analysing data such as means, frequency tables and other statistics, factor analysis, ANOVA analysis and discriminant analysis will be used.

The results will be presented as both tables and matrices.

Where is this project to be conducted?

Online through Med-E-Serve's online CPD program. All surveys and participant information on this study and their
SUBJECTS

Selection of subjects
Clearly describe the experimental and, where relevant, control groups. Include details of number of subjects, sex, age range, special characteristics. Give a justification for your choice of subject group/s.

Numbers: it is anticipated that 100 participants will be recruited from the online course to participate in this study. The subjects will be invited to participate during a set time period, February 2003 to May.

All subjects with be health professionals (e.g. GPs, nurses, pharmacists etc) who have elected to enrol in one of the 2 participating courses, hence subjects will be self selecting in the courses. The courses are existing CPD orientated courses that have been created or adapted by the providers to be offered on-line. Secondly subjects will be asked by the course providers if they want to participate in this study, thus participating with be voluntary. The subjects will be asked to participate by being firstly informed of the project by the course providers in emails which will then direct them to a hyperlink that explains the research project and this hyperlink will take them to the survey tools if they click on the consent button – if they opt to not participate they can click on the non-participation button and will be taken back to their respective courses home page.

The gender of the subjects will be mixed and age range is anticipated to be from 20-65+. Their prior experience in CPD and web-based CPD will vary from first timers through to very experienced.

Recruitment of subjects
Explain in detail how subjects will be recruited. Investigators frequently provide insufficient information on how subjects will be approached. Committee members need this information so that they can check, for example, that individuals' privacy is not infringed; that there is no coercion to participate; and that subjects are given adequate time to decide whether or not they wish to participate.

Some questions to consider:

Are you recruiting through Advertisements? Indicate where they will be placed and append a copy

Are you recruiting through 3rd parties like associations, schools or clubs? Detail how you will approach the organisations and the process that the stakeholders will pass on Information to potential participants. Append the application with copies of letters of introduction, emails, telephone preambles.

Are participants fellow students or University staff? Detail how they will be approached i.e. through lectures or personal invitation.

Prior to selecting the current CPD case studies and extensive search was undertaken to identify courses that offered on-line CPD courses. Once courses were identified providers were phoned by the research student and informed of his current research and the need to 'sign-up' interested courses. The providers were given an abstract of the research to date and a copy of the draft survey tools. It should be noted that the attached tools are still draft and negotiations are currently occurring with the course providers to minimise repetitive questions and to ensure that the questions being asked will not compromise the courses themselves.

Subjects who enrol in the case study CPD course will be invited to participate in the study by the course provider, as such subjects will be voluntary. The course provider will disseminate to all students the attached information sheet which will be in electronic form so that it can be both emailed to the students and also contained on a web site. In order to limit the period of recruitment subjects who enrol in the courses between February 2003 and May 2003 will be invited to participate in the study.

The web site (yet to be developed) will inform the students of the project as per the attached information sheet and will then ask for them to participate. Consent will be gained by the student clicking on the I consent button which will then take them to the survey tools. The student can withdraw from the study at any time by not submitting the surveys. If the student does not want to participate they can click on the ‘I don’t want to participate’ button which
will take them to their courses home page. The participants may withdraw from the study at any time without fear of compromising their courses as the course providers will not have knowledge of individual study participants.

Information about subjects

1. State whether information will be identified, potentially identifiable or unidentified

Will the Information collected be:

- De-Identified [ ] (not re-identifiable, anonymous)
- Re-Identifiable [✓] (coded, re-identifiable) - Subjects ID numbers will be required in order to match pre-post test results. However in the subsequent report such information will be de-identified to ensure anonymity.

The participant’s course I.D. number will be used to track individual results for the pre/post test of knowledge survey. This information will be removed once the data is collected and subsequent results written up. The I.D. numbers will be removed by deleting that particular column from the spreadsheet The researcher will not be able to identify the subjects based on the participant’s I.D. number as the researcher does not have access Med-E-Serv participant database, nor to the individual course enrolment databases.

Please give details on how the data is to be coded and what measures are in place to protect the identifiable information i.e. the list that connects the codes to identifying information must be kept separate from the data.

- Identified [ ] (data that allow the identification of specific individuals)

If personal (identified or potentially identifiable) information will be collected in this study give details of the information that will be collected. Also indicate how the confidentiality and anonymity of the participants will be protected.

2. Will any personal information be collected from sources other than the subjects themselves? (Refer: Privacy Legislation Section 95A - National Privacy Principles)

If YES, please declare the sources of the Information i.e. medical records, databases, registries, lists of members from Associations, clubs etc.

3. Will data on individual subjects be obtained from any Commonwealth Government agency without seeking the Consent of the Individuals? (Refer: Privacy Legislation Section 95 Information Privacy Principles – Appendix 2 of National Statement)

If Yes, then please declare which agency and what information is being sought.

If you wish to obtain data containing personal information from any Commonwealth Government agency state the names of these agencies, describe the nature of this data and explain the justification for obtaining this information. At the Commonwealth level the collection, storage, use and disclosure of personal information by Commonwealth agencies is regulated by the Privacy Act 1988. The NHMRC requires the Ethics Committee to provide information on the cases in which it has approved access to, and use of, data held by Commonwealth Government agencies.

Potential risks

1. Identification of the Risks:

Any significant physiological, psychological, social or legal risks associated with this investigation must be disclosed. The investigator must include any possible risks or effects that might affect a person’s willingness to participate in the study, eg:

- the possibility of physical harm, pain or discomfort above the everyday norm;
- the possibility of emotional distress, anxiety or embarrassment above the everyday norm in the subjects or
others;
• obtaining information which may be prejudicial to participants (eg there would be a risk of social harm or legal implications if information was disclosed).

2. Precautions taken to mitigate the risks:

*Explain the precautions to be taken to prevent or minimise risks.* Some examples of precautions would be to debrief participants, provide or refer participants to Counselling services, provide adequate medical backup if medical procedures are involved.

Nil risks identified

**Post contact**

*Explain the procedures to be followed to establish the well being of the subjects when the study has been completed (if post-contact is appropriate).*

Nil post contact will occur.

**Remuneration**

Volunteers may be paid for inconvenience and time spent, but such payment must not be so large as to be an inducement to participate. If payment is to be made include the reasons for payment and the timing of payment(s).

No subjects will be paid to participate


**Confidentiality**

Confidentiality of information is protected when it is not disclosed or revealed to other persons by the investigators. Please answer the questions below in order to ensure this.

All raw data must be held on University of Tasmania Premises for a period of at least 5 years.

Please indicate Where (which School): UDRH
How will the data will be kept secure (i.e. in locked cabinets or secure servers): Secure server
How will the data be destroyed after the 5 years is up? File erased by designated UDRH research officer.

Are AudioTapes and Videotapes being used to record data?  Yes ☐  No ☒

If YES then please indicate how the anonymity of the participants is going to be protected:

**Anonymity:**

Anonymity means that individual subjects are not identifiable. In some studies, eg many surveys and questionnaire-based studies, individual subjects’ names are not recorded. In other studies identifying information is collected and measures must be taken to maximise the security of this information.

**How will anonymity of subjects be assured?** The researcher will not have access to student records or ID numbers, this information will be held by the participating institution for their own assessment and reporting mechanisms.

Are Focus Groups involved in this project?  Yes ☐  No ☒

*If YES: Please take note of the following:*

Confidentiality and anonymity of the participants needs to be given special attention. Although the researcher can assure participants that their identities will be anonymous in the final report, they cannot ensure that other participants of the focus groups will respect this. An Information Sheet to the Focus Group Participants needs to stress the respect that each participant should have in maintaining the privacy of the information divulged during the session.
Administration of substances/agents
If any chemical compounds, drugs or biological agents will be administered specify name of substance, dose and frequency of administration, total amounts to be administered and anticipated effects.

Other ethical issues
If, in your opinion, this project raises any other ethical issues please give details.

Information sheet
With few exceptions, it is essential that subjects are provided with an information sheet. The Committee will pay close attention to the information that is given.

An outline of the information that normally needs to be covered follows the application form.

A copy of the proposed information sheet must be included with your application form.

Consent form (Refer 1.7 - 1.12 National Statement)
Written evidence of consent is usually required for research involving human subjects. A sample consent form follows the application form. The format of the sample form is appropriate for most projects. If written consent is to be obtained a copy of the actual consent form that you propose to use must be included with your application form.

In special circumstances the Ethics Committee may give approval for consent to be waived. For information see 4.5 in the Handbook.

While written consent is the norm, there are various kinds of studies for which other procedures for obtaining consent are more appropriate. See 4.5 in the Handbook. If you consider that written consent is inappropriate for this project please give your reasons below:

C. DECLARATIONS

Statement of scientific merit
The Head of School* is required to sign the following statement:
This proposal has been considered and is sound with regard to its merit and methodology.
The Head of School’s (or Head of Discipline’s) signature on the application form indicates that he/she has read the application and confirms that it is sound with regard to (i) educational and/or scientific merit and (ii) research design and methodology. If the Head of School/Discipline is one of the investigators this statement must be signed by an appropriate person. This will normally be the Head of School/Discipline in a related area.

This does not preclude the Committee from questioning the research merit or methodology of any proposed project where it feels it has the expertise to do so.

(Name of Head of School)  (Signature)  (Date)

* In some schools the signature of the Head of Discipline may be more appropriate.
* The certification of scientific merit may not be given by an investigator on the project.

Conformity with NHMRC guidelines
The chief investigator is required to sign the following statement:
I have read and understood the National statement on ethical conduct in research involving humans 1999. I accept that I, as chief investigator, am responsible for ensuring that the investigation proposed in this form is conducted fully within the conditions laid down in the National Statement and any other conditions specified by the University Human Research Ethics Committee.
<table>
<thead>
<tr>
<th>(Name of chief investigator)</th>
<th>(Signature)</th>
<th>(Date)</th>
</tr>
</thead>
</table>

Signatures of other investigators
The other investigators should sign to acknowledge their involvement in the project and to accept the role of the chief investigator.

<table>
<thead>
<tr>
<th>(Name)</th>
<th>(Signature)</th>
<th>(Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darren Pullen</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>(Name)</th>
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<tr>
<th>(Name)</th>
<th>(Signature)</th>
<th>(Date)</th>
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</table>

Reeves, T. 1999. 'A research agenda for interactive learning in the new millennium' in ED-Media 1999 World conference on educational multimedia, hypermedia and telecommunications: Conference proceedings, Volume 1, Association for the advancement of computing in education, USA, p18.


APPENDIX 8

PLAIN ENGLISH ETHICS COVER

LETTER POST-TEST
Managing depression in general practice

Status: Workshop (LMO-005)

Home | Facilitator | Goals | Authority | Points | Notes

Estimate: 120 mins

Message from your Facilitator, Dr Natalie Burch:
Congratulations on finishing the workshop, Darren!!! Now, on behalf of the University of Tasmania, could I ask you to consider spending just 5 more minutes to assist research on online learning. This is purely voluntary and totally anonymous. There is a simple survey to complete after you read the "consent" below. Up to you, but you would be helping out a colleague and helping to shape the future of online learning. See you again soon I hope in another workshop.

UNIVERSITY OF TASMANIA

Go to survey

Effectiveness of web-based continuing professional education

Dear Colleague

We would like to invite your participation in a research study looking at the effectiveness of web-based continuing professional education (CPE). The study is being undertaken to fulfill the requirements of a master's degree in health education.

It is sound educational practice to evaluate the effectiveness of all courses, particularly those that are using new technologies. We are attempting to understand better the nature of on-line education and to measure the effectiveness of this medium. We cannot do this without your help.

Your participation will involve completing an online survey through a hyperlink that appears at the top and bottom of this page:

- Upon completion of your posttest you will be asked to complete a web based learning survey.

It is particularly important that we have the views of as many individuals as possible. There are no right or wrong answers. We simply seek your response to a range of questions that will allow us to determine the nature and effectiveness of online learning for CPE.

Your consent to participate in the study will be by completing and submitting the electronic survey form. You may at any stage withdraw from the study by not submitting the survey. You will not compromise your success in the course, as the course providers will not have any knowledge of who is participating in this study.

http://www.medeserv.com.au/PriMeD/myprimed/unit/index.cfm?txtUnitName=LMO-005
Anonymity is assured. It will not be possible to identify you personally from the information collected. All information collected from this study will be stored electronically at the University of Tasmania's Department of Rural Health and will be destroyed after 5 years.

The study is being conducted in collaboration with your courseware provider. All individuals enrolled in the course between May and August 2003 will be asked to complete the survey.

We hope that you will be able to help us in this study, which has the potential to improve future web-based education courses.

The results will be made available on the University of Tasmania's web site at http://www.ruralhealth.utas.edu.au/projects.asp on completion of the investigation.

The study has received ethical approval from the Southern Tasmania Social Sciences Human Research Ethics Committee. If you have any ethical concerns about the study, please contact: Associate Professor Gino DalPont, University of Tasmania, Ph. (03) 6326 2078 or Ms Amanda McAully, Executive Officer, (03) 62262763.

This letter should be printed out for future reference, as it is your record of this study's purpose.

If you would like to know more about the study, please feel free to ring us during the day on (03) 63 41 9988 (Darren Pullen) (03) 63 24 40 11 (Professor Judith Walker) or email us at: Judith.Walker@utas.edu.au or Darren.Pullen@utas.edu.au

If you are ready to look at the survey, please click here.

Thank you in anticipation of your help.

With kind regards

Professor Judith Walker (supervisor)

and

Darren Pullen.

Masters Research student

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APPENDIX 9

PLAIN ENGLISH ETHICS COVER

LETTER PRE-TEST
Dear Colleague

We would like to invite your participation in a research study looking at the effectiveness of web-based continuing professional education (CPE). The study is being undertaken to fulfil the requirements of a master’s degree in health education.

It is sound educational practice to evaluate the effectiveness of all courses, particularly those that are using new technologies. We are attempting to understand better the nature of on-line education and to measure the effectiveness of this medium. We cannot do this without your help.

Your participation will involve consenting to allow the research student to have access from the course provider to deidentified survey data that you will be completing as a normal requirement of this course. In addition you will be asked to complete another non-course specific survey at the end of your study.

Your consent to participate in the study will be by submitting this electronic consent form. You may at any stage withdraw from the study by emailing your course provider or Darren Pullen directly.

Anonymity is assured. It will not be possible to identify you personally from the information collected. You will not compromise your success in the course by either taking part or not participating, as the course provider will not have any knowledge of who is participating in the study. All information collected from this study will be stored electronically at the University of Tasmania’s Department of Rural Health and will be destroyed after 5 years.

The study is being conducted in collaboration with your courseware provider. All individuals enrolled in the course between February 2003 and November 2003 have been asked to complete the surveys.

We hope that you will be able to help in this study, which has the potential to improve future web-based education courses.

The results of this study will be made available on the University of Tasmania’s web site at http://www.ruralhealth.utas.edu.au/projects.asp at the completion of the investigation.

The study has received ethical approval from the Southern Tasmanian Social Sciences Human Research Ethics Committee. If you have any ethical concerns about the study, please contact: Associate Professor Gino DalPont University of Tasmania Ph. (03) 6324 3576 or Ms Amanda McAully, Executive Officer, (03) 62262763.

This Information Sheet should be printed out for future reference, as it is your record of this study’s purpose.
If you would like to know more about the study, please feel free to ring us during the day on (03) 63 4199 88 (Darren Pullen) (03) 63 24 40 11 (Professor Judith Walker) or email us: Judith.Walker.utas.edu.au or Darren.Pullen@utas.edu.au

Thank you in anticipation of your help.

With kind regards,

Professor Judith Walker and Darren Pullen.

Please select carefully from the following two options:

I do not wish to take part in this study  I wish to take part in this study
APPENDIX 10

r TO z VALUES

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