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PAIN TOPICS

PDA-Based Opioid Conversion Calculators

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The personal digital assistant (PDA) or palm-sized computer is enjoying steadily growing popularity among clinicians in all disciplines. Point-of-care reference works (such as drug libraries) and tools (such as medical calculators) are replacing some of the bulky handbooks and cards that have distorted the pockets of so many clinical jackets. It is not surprising therefore, that there are now 4 opioid conversion calculators available for the PDA, 3 of which may have broad clinical appeal.

The PDA cannot match the functionality of a computer with a mouse and keyboard, particularly when it comes to entering data. However, the available opioid conversion calculators for the PDA can be quite useful in clinical practice because of their portability. This convenient platform supports consistent (and therefore potentially safer) practice especially when clinicians in the same practice or institution use the same method for rotating opioids and calculating equianalgesic doses. There has been no research on the clinical impact of these tools. It would be very beneficial to have data on usability as well as impact on the delivery of care (issues such as time required to use the tool and promotion of the use of consistent guidelines) and patient outcomes. It is yet to be determined, for example, whether these tools are more useful for training or for daily clinical practice, or which health care disciplines will find them most useful.

There are three PDA opioid calculators available. As of this writing there is no opioid conversion calculator for Macintosh products. The GlobalRPh calculator (Table 1) is the only product currently available for both Windows PCs and a PDA, and the only one for both the Palm OS and the Pocket PC. A constant dilemma in software development is the determination of the minimum functionality needed to make a tool useful, and whether more (more features, more detail) is necessarily better. For example, the more you expect and instrument to do, the more data you are likely to need to input. If it is too simple however, additional calculations and decisions will need to be made “off line.” As with other software acquisition decisions, multiple factors must be considered in choosing an application for personal or institutional use. A side-by-side comparison of the available calculators is provided in Table 1. See the full reviews of all known electronic opioid conversion calculators on the PainRelief web site.

PDA calculators reviewed in Table 1:

Hopkins: <http://www.hopkinskimmelcancercenter.org/specialtycenters/hop.cfm?facilityid=27>

GlobalRPh (PDA version): http://www.globalrph.com/narcotic_pda.htm

GlobalRPh (Windows version): http://www.globalrph.com/narcotic_converter.htm

Cynergy: <http://www.collectivemed.com/jump/opioi.shtml>

PainRelief web site: <http://www.massgeneral.org/painrelief/>

Pain Relief Connection archives: http://www.massgeneral.org/painrelief/Newsletter/mghpain_connection.htm

Pain Topics archives: http://www.massgeneral.org/painrelief/Pain%20Topics/mghpain_paintopics_index.htm

Opioid conversion calculator review: http://www.massgeneral.org/painrelief/Pain%20Topics/Converting_opioids_Pt2.pdf

Table 1: Comparison of PDA-based opioid conversion calculators

	Hopkins	GlobalRPh	Cynergy Group
Morphine equivalents (ME) displayed	Parenteral ME	Oral ME	Oral ME
Conversion factor choice	No choice	User may edit table	No choice
Conversions for: transdermal fentanyl transmucosal fentanyl methadone hydrocodone levorphanol combination products meperidine propoxyphene	Yes No Yes No Yes No Yes No	Yes No Yes Yes No No Yes No	Yes Yes Yes Yes Yes Yes <u>Convert from</u> , only <u>Convert from</u> , only
<u>Convert to</u> methadone method	No choice	Choose 1 of 2 methods	No choice
Alternate routes (IT, EP, etc.) addressed	Oral, parenteral, transdermal, only	Oral, parenteral, transdermal, only	All
Available formulations addressed	No	No	Yes
List of opioids available for performing calculations	All-in-one drop down list	All-in-one drop down list	When route selected, only appropriate drugs displayed
Equianalgesic table displayed	No	Yes	No
Acute vs chronic dosing for morphine methadone	No No, but discussed in User's Manual	Yes Yes	No No, but discussed in instructions
Interface Dose entry Drop-down windows	Tap in using application's virtual buttons Large: minimal scrolling	Use "graffiti;" or tap in using OS's virtual buttons Very small: lots of scrolling	Use "graffiti;" or tap in using OS's virtual buttons; entry value limited to 3 digits All content visible: no scrolling required
Clinical alerts, reminders, limits meperidine methadone transdermal fentanyl acetaminophen dose cross-tolerance breakthrough dose	No Yes (in User's Manual) Yes (in User's Manual) No No No	No Yes Yes No Yes Yes	Yes; no <u>convert to</u> function Yes Yes Yes Yes No
Dose reduction for cross tolerance available	No	User chooses % reduction	Yes/No choice: if Yes, application chooses % reduction
References cited	Yes (User's Manual)	Yes (web site)	
Can convert concurrent opioids to a single alternative	Up to 3 different opioids	Up to 3 different opioids	Up to 5 different opioids
Instructions available	Yes (User's Manual)	Yes (in application & on website)	Yes (web site)
Platform	Palm OS only (others in development)	Web; Windows; Palm OS; Pocket PC	Palm OS only (web and Windows versions currently not available)
Cost	Free	14-day free demo Web (limited version): Free Windows: \$24.95 PDA: \$16.95	30-day free demo \$99/year
Other		Transdermal fentanyl conversion displayed for every calculation (when guidelines available)	User may choose drug list display: all drugs, generic only, trade only