

## Electronic Medication Management Assistant (EMMA): Delivering the Right Pill

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# 2108

CONCURRENT

Thursday, June 16, 2011

2:30 PM – 4:00 PM

### ABSTRACT

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The Electronic Medication Management System, affectionately known as EMMA, is the first and only FDA-cleared medical device for remotely delivering, managing, and monitoring a patient's medication therapy and adherence in an outpatient setting. EMMA combines hardware, software and wireless communications to provide hospital-style medication management in a client's home. The EMMA system reduces medication errors and makes complex and changing medication regimes rapidly, via secure web-based technology.

### OBJECTIVES

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- Demonstrate the operating features of EMMA and system support that benefits the patient, care givers, family members, Case Managers, and Providers.
- Analyze when Case Managers and Providers should consider the use of EMMA as an adjunct for safe, effective, efficient medication management in the outpatient setting.
- Explore present and future use of EMMA to include its potential pivotal role in the Medical Home concept.

### PRESENTER PROFILES

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Mark W. Drummey officially joined the INRange team in December 2006 however, he had consulted with the Company since 2004.

Mr. Drummey has specialized for over 25 years in life science strategic business development including diagnostic telehealth monitoring services, centralized electronic patient database services, cardiology device equipment, clinical trial testing services, pharmaceutical sales, and DoD RDT&E programs for the Army and Air Force Surgeon Generals.

**Disclosure:** Speaker disclosed that he is employed by INRange Systems, but will refrain from making recommendations regarding their products or services; e.g., limit talk to pathophysiology, diagnosis, and/or research findings.

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Michele C. Misener, BSN, MSN, RN-BC, has been a Registered Nurse since 1977. Michele's nursing career gave her an opportunity to work with diverse populations across the continuum--from birth to end-of-life care. She is experienced in an assortment of settings including hospital, public school, State of Oregon's Senior and Disabled Services, Hemodialysis, Home Health/Hospice, and U.S. Military.

Michele is a retired Lieutenant Colonel of the Oregon Army National Guard, having completed 21 years' service. She served on Active Duty as a Nurse Case Manager for the U.S. Army Community- Based Warrior Transition Unit from January, 2005, through December, 2010.

She received her Masters of Nursing in 2004 from the University of Phoenix; and has been a Board Certified Case Manager since October 2006.

**Disclosure:** Speaker disclosed that she is employed by INRange Systems; and that a financial interest or affiliation could be possible if providers and/or case managers order EMMA for their patients/clients.

Electronic Medication Management Assistant



Delivering the Right Pill

### Compliance with Code of Ethics

- CRCC and CDMS Ethics credit are being awarded to this session as the following CRCC and the CDMS Commission Codes pertain to the content of this presentation:
- *CRCC Code of Ethics – Section J: Technology and Distance Counseling*  
CRCC Website: [http://www.crc certification.com/pages/crc\\_ccrc\\_code\\_of\\_ethics/10.php](http://www.crc certification.com/pages/crc_ccrc_code_of_ethics/10.php)
- *CDMS – Rules of Professional Conduct (RPC) – Section 2 – Provision of Services to Individual Clients: RPC 2.03 – Confidentiality*  
CDMS Website: <http://new.cdms.org/professionalconduct.php>

### PRSENTERS

Michele Misener RN-BC, MSN, LTC (Ret)  
Regional Accounts Manager  
INRange Systems, Inc.

Mark Drummey  
Executive Vice President  
Military, VA, and Government Affairs  
INRange Systems, Inc.

### Objective 1

Demonstrate the operating features of EMMA and systems support that benefit the patient, care givers, family members Case Managers and Providers.

### Objective 2


Analyze when Case Managers and Providers may want to consider the use of EMMA as an adjunct for safe, effective, efficient medication management in the out-patient setting.

### Objective 3

Explore present and future use of EMMA to include it's potential pivotal role in the Medical Home concept.

### What is EMMA?

- Electronic Medication Management Assistant
- The 1<sup>st</sup> and only FDA-cleared device for remotely delivering, managing and monitoring medication therapy and adherence in an outpatient setting
- Class II Medical Device requiring Provider RX



Hardware, software and wireless technology combine to provide hospital style medication management in the home




### What does EMMA do? Remote Medication Management System

- Programmed remotely according to doctor's dosing instructions
- Delivers scheduled and PRN medications exactly as prescribed at patient residence
- Visual and auditory alert at medication time
- Operated with a touch screen
- Provides reports on delivery, adherence and interventions

### Medication

- Legend tablets and capsules
- Medication Administration Cartridge (MAC)
- Bar Code technology
- Rx, quadruple ("QC") check
- Regularly Scheduled & PRN



### How are EMMA prescriptions handled?


- Rx sent to an EMMA Certified Pharmacy
- Rx dispensed in specialized medication administration cartridges (MACs)
- INRange Systems scheduler applies the pharmacy dispensing directions to the EMMA system remotely
- MACs loaded into the unit by user (or caregiver)
- Medications delivered from unit exactly as prescribed

### Capacity

- Single unit holds up to 10 MACs
- With an expansion unit holds up to 20 MACs
- Can deliver reminders for additional medications

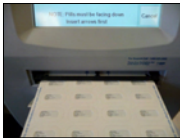
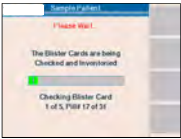
### EMMA Unit Communication

- Secure wireless communications via cellular broadband modem
- Optional Ethernet connection available
- Automatically communicates several times per day to:
  - Receive any changes to medication schedules
  - Report back on patient adherence
  - Provide data for safety monitoring




### The Mechanics: Loading and Inventory

- Loading Medication Administration Card
- Each medication scanned and inventoried
- Inventory transmitted back to data center

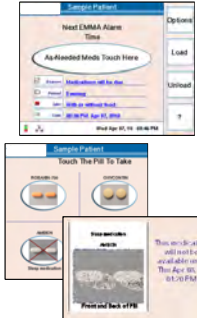
### The Mechanics: Scheduled Medications

- Visual and auditory alert at medication time
- Easy touch screen
- Simple picture-based directions
- Information transmitted back to data center after all activity



### The Mechanics: PRN Medications

- On-Demand only (no alert)
- Visual Menu
- Only available within prescribed parameters:
  - How many at one time
  - Time between doses
  - Time of day (such as bedtime)



### Benefits


**The RIGHT PILL at the RIGHT TIME**

- Delivers scheduled and PRN medications exactly as prescribed
- Programmed remotely according to Providers dosing instructions
- Narcotic and Schedule II control
- Quickly change delivery patterns on existing supply in unit
- No double Takes

### Benefits

**Reports for Providers and Case Managers**


- Adherence Statistics
- Adjust/titrate medications based on real rather than 'remembered' medication adherence
- List of all current medications being delivered by EMMA
- Current inventory inside and outside EMMA helps anticipate need for refills



### Benefits

#### Security of Medication


- Optional PIN protection to:
  - Deliver medications
  - Unload blister cards
- Up-to-date inventory inside and outside of the unit
- Alerts sent immediately to monitoring center for
  - Inventory Discrepancy
  - Tamper Alarm



### Benefits

#### Notification System

- Optional feature for patient and caregiver
- Automated phone calls and emails such as:
  - Delivery not yet taken
  - Refill needed
  - Delivery due while away from EMMA



### Benefits

#### Patient Independence + Caregiver Support

- No input required by end user (programmed remotely)
- No pill boxes to fill
- Variable permissions based upon level of functioning
- Option to advance a dose and get a reminder call
- Support available via phone 24/7
- Check recent or upcoming dosing on-screen

### Support

- Policy and Procedure individualized per customer or site
- EMMA Support Specialist available to train and set up
- 24/7 support -- just a phone call away
- Responsive to issues/concerns
- Rapid Replacement

### Considerations

- Patient and family motivation
- Intentional non-adherence
- EMMA adherence reports = medications taken from the unit at scheduled times
- Features can be individualized for each patient/family situation
  - Medications ahead of time
  - Unload PIN
  - Auto eject feature


### Patients to Consider

Patients with chronic conditions where documented medication administration is a medical necessity.

History of poor medication adherence

Failure of other medication convenience devices such as pill boxes or phone reminder services

Multiple providers where medication coordination is critical for care.



Source: WWW.INRangesystem.com

### Patients who can Benefit

CHF	Behavioral Health issues
TBI	Poly Pharmacy (≥4)
MS	Narrow therapeutic Index meds (NTI)
Organ transplant	Schedule II/Narcotic control
HIV/AIDS	
COPD	
Oncology	

Source: www.INRangsystems.com

### Army Wounded Warriors

US Army, Warrior Transition Units (WTU). Here ill or wounded soldiers are treated at the Military Bases as out-patients, or remotely in their homes through the Community Based programs.

- Diagnosis:
  - PTSD
  - TBI
  - Poly drug therapy (≥4)
  - Behavioral Health concerns
  - Chronic Conditions

### A Warrior's Story

- Remote setting
- Poly-pharmacy- 6 routine/3 PRNs
- Dx PTSD/TBI and multiple orthopedic issues
- Spouse as med controller
- Adherence difficult
- Titration not effective

### A Warrior's Story

- EMMA considered and accepted by family
- DME TRICARE benefit for Active Duty Soldiers
- PCM Rx for "EMMA unit and Supplies"
- Pharmacy to TRICARE Pharmacy medication transfer
- Certificate of Medical Necessity ICD9/HCPC
- Enrollment/scheduling per Provider Rx

### The Outcome

- Warrior and Wife very pleased
- Case Manager & Provider easily able to monitor medication management
- Provider able to adjust/titrate medications based on real rather than 'remembered' medication adherence reports
- Decreased use of prn's with stabilization
- Independence and improved self esteem


### Another Warrior's Story

<http://nwrepeaters.org/Videos/WR%20EMMA%20Video.wmv>



## Reality Check

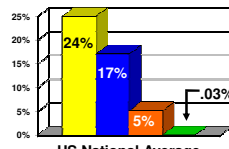
- The cost of medication errors are estimated at \$290 billion dollars per year according to the New England Healthcare Institute (2009).
- Re-hospitalization can often be traced to medication confusion.



## Reality Check

### Dramatically Better Treatment Than Other Methods

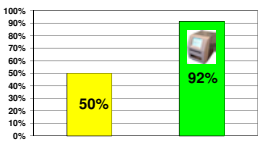
#### Medication Delivery Error Rates



**US National Average**

- Outpatient Care - 24.51%<sup>(1)</sup>
- Pill Boxes With 6+ MEDS - 17%<sup>(2)</sup>
- Inpatient (Hospital) Care - 5.07%<sup>(3)</sup>
- EMMA® - 0.03%

#### Outpatient Medication Adherence Rates



- Outpatient Care National Avg. - 50%<sup>(1)</sup>
- EMMA® - 91.6%<sup>(2)</sup>

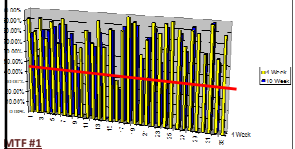
(1) Source: World Health Organization  
(2) Source: Medical News Today  
(3) Source: Pharmacotherapy Publication

Confidential & Proprietary

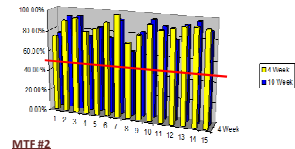
## Research

— Indicates National Average < 50%

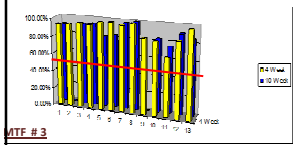
#### MTF #1



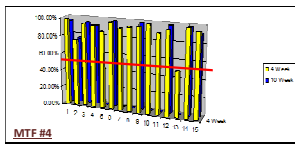
#### MTF #2



#### MTF #3



#### MTF #4



## Future

- Medicare/Medicaid/private insurance/VA
- Independent living settings
- Behavioral health settings
- Adjunct for “Medical Home”
- Transition support

## Future

- Shape/size
- More then legend medications
- BP/pulse
- Weight
- INR
- Glucose
- Pulse Ox

## Conclusion

- EMMA is a proven safe/secure/effective medication management assistant; FDA approved.
- EMMA increases medication adherence thus decreasing adverse affects of medication mismanagement.
- Currently used by the Military and VA for Warriors with PTSD, TBI, Poly pharmacy & Behavioral health issues.
- Medical Home adjunct.



### References

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### Questions



More Information on the Web  
[WWW.INRangesystems.com](http://WWW.INRangesystems.com)



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<http://nwrepeaters.org/Videos/WR%20EMMA%20Video.wmv>