Handheld Clinical Data Capture & Scheduling

CIS

CIS: A complete mobile information system for Community Nursing Services.

Overview

CIS is a new mobile information system for community nursing services, designed by a team of senior nurses and implemented using Kelvin

Connect's award-winning technology. It features an advanced hand-held clinical workstation for staff working in locations where desk or Tablet PCs are unavailable, inconvenient or inefficient, together with

web access to a central data repository for work scheduling, reviewing and reporting. CIS has been designed from the start as a sophisticated mobile information system, exploiting the full power of the latest hand-

held computer devices, and has been in daily clinical use for over 18 months.

Benefits

- Improved legibility, accuracy and completeness of clinical information capture
- Improved communication between team members and other health providers
- Reference information at the point of care
- Time saved on scheduling and analysis
- Very detailed support for evidence-based service planning and monitoring
- Secure long-term information repository (documents in XML format)

Typical use

CIS can support District Nursing, Health Visitor, or other Community Nursing services. For example:

- District Nurse Team leaders use the system to log new patient referrals, schedule and assign tasks to team members, and generate clinical documents and reports
- District Nurses use mobile devices to capture information in partially pre-filled forms, print information at the point of care using wireless ink-free hand-held printers, share information automatically with other team members, consult reference information, log travel times etc
- Highly detailed caseload and activity reports for service managers can be created either automatically or interactively

Scheduling

The system includes advanced support for work scheduling. For each patient, patterns of tasks can be specified (eg regular visits, sequences

of structured assessments, equipment orders). Tickets for eg home visits are generated automatically. Once a Team leader has assigned a task to a specified nurse, partially pre-filled forms are automatically

created and sent to the nurse's hand-held computer, to minimise unnecessary data entry.

Data capture and distribution

Typically nurses would use the system to capture data such as:

- details of new referrals
- full structured initial clinical assessments
- findings and treatments administered at repeat home visits
- clinic activities
- equipment orders
- referrals to specialist services
- structured sequential assessments of particular conditions such as pressure ulcers, diabetes

The hand-held computers use an advanced graphical interface with:

- automatic copying of information between documents to minimise duplicate data entry
- fast selection from picklists
- immediate data validity checking
- highlighting of abnormal numeric values

The advanced data capture and review interface is available at all times, whether or not the PDA has a network connection. Connection (simple docking, GPRS, or wireless LAN) is only required for a few minutes a

day to send and receive information.

Where appropriate, information can be automatically shared with other team members' hand-held computers.

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Reporting

The system includes an extensive suite of reports, which can be generated automatically or interactively. The reports include:

- New referrals cross-tabulated by age/sex, source, diagnosis, priority
- Current case load profile
- Detailed statistics on activities and treatments performed by each service, team and individual nurse
- Equipment ordered
- Performance statistics relating to specific conditions eg pressure ulcers
- Alerts related to missing data items
- Alerts related to scheduling anomalies for patients in the active caseload

Configurability

A key feature of CIS is that it is very highly configurable to local requirements. Data capture forms, information sharing, reports, user account types, and security options can easily be tailored to suit specific Trust circumstances.

Confidentiality and Security

All mobile and web components have strong security and confidentiality features including:

- individual password-protected user accounts
- strong encryption of data during both storage and communication
- highly configurable constraints on data manipulation based on user group privileges
- background audit trails of specific data operations eg document viewing, report generation, user account modification

Upgrading

Systems running on hand-held computers have the capability to be upgraded automatically and remotely, whenever they are connected to the central repository, to facilitate modifications and enhancements.

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