



Clinical  
Information  
System



Version 3



### New Features

Clinical Tracker  
Electronic Flow Sheet  
Custom Access Levels  
Encounter Note Interface



MEMBER 2005  
ANSI Accredited  
Standards Developer



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USA

 The Aristos Group

### PECSYS® - A Clinical Information System that Supports the Chronic Care Model

*Well over 100 million Americans suffer from one or more chronic illnesses ... Americans without optimal treatment are experiencing morbidity and high health care cost [1].* Since the 1990's, Dr. Ed Wagner and his team at MacColl Institute for Healthcare Innovation have been developing a comprehensive model, the Chronic Care Model (CCM), to improve the outcome of chronic disease care.

The CCM strives to change health systems with the use of evidence-based guidelines and coordinated, planned care. It provides a framework for improving care at the community, organization, practice, and patient levels to transform health care from a reactive system to a proactive system that produces better health outcomes. The CCM can be applied to a variety of chronic illnesses, health care settings, and target populations. For the last five years the Bureau of Primary Health Care (BPHC) has been helping health centers implement the CCM, improving healthcare and outcomes for many thousands of patients.

One of the core components of the CCM is a Clinical Information System, (CIS). The CIS is based on a registry of patient and clinical information that can be drawn upon for a detailed view of an individual patient as well as to obtain information about populations of patients. *A comprehensive CIS can enhance the care of individual patients by providing timely reminders about needed services and summarized data to track and plan care. For the population level, the system identifies groups of patients that need additional care and facilitates monitoring performance and quality improvement efforts [2].*

Hundreds of health care organizations have been applying the CCM, using the Patient Electronic Care System (PECS) as the clinical information system within the BPHC Health Disparities Collaboratives. From this effort has evolved PECSYS®, a CIS that is now available commercially to all health care organizations who want to improve the care they provide to their patients. PECSYS supports the CCM in the following ways:

- Embeds evidence-based guidelines into daily clinical practice
- Facilitates individual patient care planning
- Shares information with patients and providers to coordinate care
- Ensures regular follow-up by the care team
- Provides timely reminders for providers and patients
- Identifies relevant sub-populations for proactive care
- Monitors performance of practice team and care system



A complete description of the components of the CCM is available at the “improving chronic illness care” web site ([www.improvingchroniccare.org](http://www.improvingchroniccare.org)). The remainder of this paper illustrates some of the innovative features that PECSYS® offers to help health care professionals improve the care they provide to patients.

<sup>1</sup> Ed Wagner, M.D., February 2003. "Testimony Before the Subcommittee on Health of the House Committee on Ways and Means". Seattle, Washington.

<sup>2</sup> Improving Chronic Care. [www.improvingChronicCare.org](http://www.improvingChronicCare.org)

## Evidence-Based Guidelines as a Foundation for PECSYS

As health care providers, you know that the use of evidence-based care guidelines is fundamental to delivering the best care to patients. For example, several well-regarded\* studies have conclusively proven that a 1% drop in HbA1c can have a dramatic impact on reducing cardiovascular and micro-vascular complications in patients with diabetes. Therefore, it is very important that the care team work aggressively with all diabetic patients to lower their HbA1c levels. PECSYS® helps the care team do this in a variety of ways that will be described in this brochure.

PECSYS® integrates evidence-based guidelines and known best practices into all its tools and features. Specifically, the Dynamic Encounter Note † is built for each individual patient, using their current clinical and demographic data, to reflect the latest science in caring for that patient's condition(s). Up-to-date reports help the care team see which patients (out of their whole panel) are in need of specific care interventions.

## Quick Access to Relevant Information

PECSYS® provides quick access to critical information about a patient, providing concise but comprehensive summary of the patient's medical information. PECSYS® compiles the Dynamic Encounter Note on demand, which produces a page from the most current data about the patient's vitals, conditions, medications, vaccinations, risk factors, referrals, laboratory and other tests results.

The Dynamic Encounter Note facilitates planning the patient's care and allows the provider to track goals, such as weight loss or smoking cessation, and highlights reminders about needed services and care.



\*UKPDS, Stratton IM, Adler AI, Neil HA, Matthews DR, Manley SE, Cull CA, Hadden D, Turner RC, Holman RR  
ADA Clinical Practice Recommendations 2003.  
Standards of Medical Care for Patients with Diabetes Mellitus. Diabetes Care, 26:S33-50, 2003

† Patent Pending

**PECSYS - Data Entry**

Encounter-1 | Charts | Flow Sheet | Reminders | Clinical Tracker | Custom View | Documents | Close

**Encounter Note**

Encounter Date: 3/22/2005 1 PM | Provider: Dr. Provider

Clinic: My Clinic | Next Visit Date: | Encounter Type: Office Visit

Chart #: C-10043 | Last Name: Example1 | First Name: Jane | Age: 68 | DOB: 5/1/36 | Sex: Female

**Vitals**

Weight	130.6
Height	4'11.0"
Pulse	
Resp Rate	
Temp	
Systolic BP	130
Diastolic BP	76
BMI	26.3
Waist Circ In.	

**Diagnosed Conditions**

Dx Date	D/R	Condition
10/26/01		Hypertension
10/26/01		Dyslipidemia

**Potential Conditions**

Add	Condition
	DM Type 2
	Metab Syndrome
	CAD
	Post-MI
	PAD
	CHF
	Asthma

**Medications**

Class	Name	Date	D/C	Class
Beta Blocker	Class	8/18/03		
Diuretic	Class	2/27/03		
ACE Inhibitor	Class	1/13/03		

**Laboratory Test Results**

Test	Value	Date	PRef	RefDec
HbA1c	6.2	2/27/03		
Chol	207	8/28/03		
LDL	117	8/28/03		
LDL Goal				
HDL	43	8/28/03		

**LDL Target and Framingham Heart Disease Risk Calculator**

Age: 68 | Sex: Female

Systolic BP: 130 | Smoking Status: Never

HDL: 43 | Cholesterol: 207

Hypertension:  | Father or Brother with MI before age 55:

Treated for Hypertension:  | Mother or Sister with MI before age 65:

CAD Equivalent:

Diabetes:  | Ten year risk is: >20%

Peripheral Arterial Disease (PAD):  | Cardiac Risk: High/ CAD equiv

Abdominal Aortic Aneurysm (AAA):  | LDL Goal <100 mg/dl

Cerebrovascular Disease (CVD):  |  Display Risk Index

Buttons: Help, Close, Calculate Target

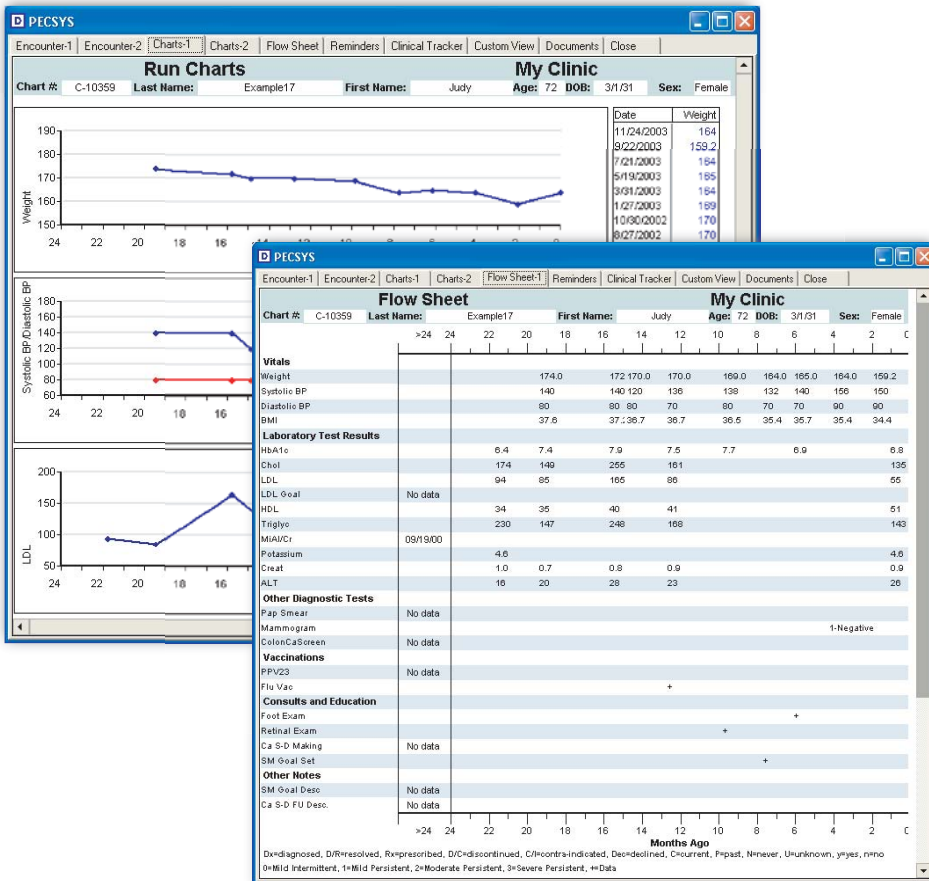
### Encounter Note Interface

Our Encounter Note Interface is an innovative, cutting-edge method of working with patient data allowing for instant data entry direct to the Dynamic Encounter Note. Access data immediately and directly in the note itself to perform many functions. Add/edit or view patient data, drill-down into their historical information, look up any item on their note in the data dictionary, discover why certain items are on their note and their relationships to other items. The interface includes features that are crucial to planned, proactive care: run charts, reminders, clinical trackers, 24-month flow sheet and our LDL Target/Framingham Heart Disease Risk Calculator. This helpful, built-in tool can automatically and quickly tell you and your patient, not only what their heart disease risk is, but also what their LDL goal should be in order to help them work towards that goal. A provider or member of the patient's health care team can specify a custom view to look at only certain conditions and reminders for a patient, thus enabling faster and more efficient data entry.

Right click LDL Goal and access our LDL Target and Framingham Heart Disease Risk Calculator (patient vitals will automatically load into the calculator).

## Powerful and Flexible Reporting

One of the most powerful and flexible features within PECSYS® is its reporting capability. The reports provide quick access to information about individual patients and about the entire population of patients.



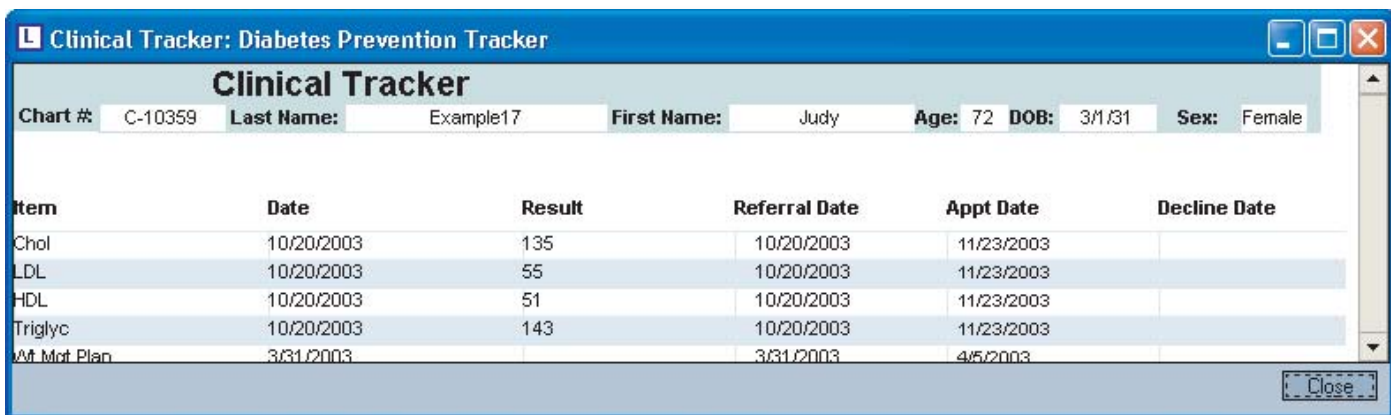
### Run Charts

To further analyze and track a patient's health PECSYS® can generate individual run charts, which display a particular segment of the patient's health data over time. Providers can choose which data items to plot for individual patients on a run chart, as well as related run charts for all patients with a particular condition.

### Flow Sheet

Our new 24-month electronic flow sheet shows visual cues of individual patient data items over a period of time. These cues will quickly pinpoint the patient's progress, other patient data items may be added to the flow sheet.

Clinical Trackers monitor items associated with a specific course of treatment. They are unique and greatly enhance your ability to care for your patient. You can set up an unlimited number of trackers.



**PECSYS - Encounters**

**Follow-up Worksheet** My Family Clinic

Chart #: C-10359 Last Name: Example17 First Name: Judy Age: 73 DOB: 03/01/31 Sex: Female

**Lab Tests Ordered:**  
Test: Hemoglobin A1c

**Other Diagnostic Tests Ordered:**  
Test: Pap Smear

**Vaccinations Ordered:**  
Vaccine: Flu Vaccine

**Other Measures Ordered:**  
Measure: Exercise (week)

**Consults and Education Ordered:**  
Name: Nutritional Education

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Patient History documents can be generated quickly and easily to review detailed patient information. Patient history documents are available for each of the eleven data categories in PECSYS®.

**PECSYS - Encounters**

**Medication History** My Family Clinic

Chart #: C-10359 Last Name: Example17 First Name: Judy Age: 74 DOB: 6/11/31 Sex: Female

**Current Medications**

Encounter	Class	Name	Rx Provider	Rx Date	Dose	Frequency	Quantity	Refills	Note
1/2/2004	Calc Chan Block	Class	Dr. Vital	1/2/2004	80/mg	3/Daily	90	2	Can be taken with or without food
1/2/2004	Diuretic	Class	Dr. Vital	1/2/2004	50/mg	1/Daily	60	0	2x25mg 1 X daily
7/11/2003	Antiplatelet	ASA	Dr. Johns	7/11/2003	1/Tablets	1/Daily	30	2	
7/11/2003	ARB	Class	Dr. Johns	7/11/2003	150/mg	1/Daily	30	2	
12/7/2002	Sulfonylurea	Class	Dr. Johns	12/7/2002	8/mg	1/Daily	60	2	2x4mg 1X daily
2/26/2002	Biguanides	Glucophage	Dr. Johns	2/26/2002	500/mg	3/Daily	90	3	Take with meals
5/22/2001	TZD/Glitazones	Class	Dr. Johns	5/22/2001	50/mg	1/Daily	30	2	May be administered with or without food

**Contra-indicated Medications**

**Contra. Provider**

Medication	Dose	Frequency	D/C Note
		2/Daily	
		1/Daily	
		1/Daily	
		3/Daily	

**PECSYS - Encounters**

**Consults and Education History** My Family Clinic

Chart #: C-10359 Last Name: Example17 First Name: Judy Age: 74 DOB: 6/11/31 Sex: Female

Name	Date	Encounter Date
Annual Foot Exam	8/29/2003	10/31/2003
Annual Foot Exam	12/12/2000	12/30/2000
Annual Foot Exam	12/12/2000	12/29/2000 1 PM
Dental Exam	12/12/2000	12/30/2000
Dental Exam	12/12/2000	12/29/2000 1 PM
DM Education	5/9/2003	
DM Education	12/12/2000	
DM Education	12/12/2000	
Healthy Weight Management Plan	7/11/2003	
Nutritional Education	3/5/2004	
Nutritional Education	5/9/2003	
Nutritional Education	12/12/2000	
Nutritional Education	12/12/2000	
Patient FOBT Results	10/24/2003	
Patient Mammogram Results	1/2/2004	
Patient Pap Smear Results	3/5/2004	
Retinal Exam	5/9/2003	
Retinal Exam	12/12/2000	
Retinal Exam	12/12/2000	
Self-Management Goal Setting	7/11/2003	

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**PECSYS - Encounters**

**Lab History** My Family Clinic

Chart #: C-10359 Last Name: Example17 First Name: Judy Age: 74 DOB: 6/11/31 Sex: Female

Lab Name	Lab Value	Lab Provider	Date
ALT	26	USALAB	1/30/2004
ALT	23	USALAB	2/9/2003
ALT	28	USALAB	11/9/2002
ALT	20	USALAB	7/20/2002
ALT	16	USALAB	5/12/2002
ALT	21	LabsInc	11/16/2001
ALT	20	LabsInc	9/29/2001
ALT	21	LabsInc	7/27/2001
ALT	26	LabsInc	4/1/2001
ALT	27	LabsInc	12/30/2000
AST	17	USALAB	1/30/2004
AST	20	USALAB	2/9/2003
AST	24	USALAB	11/9/2002
AST	16	USALAB	7/20/2002
AST	16	USALAB	5/12/2002
AST	17	LabsInc	11/16/2001
AST	15	LabsInc	9/29/2001
Cholesterol	145	USALAB	11/7/2005
Cholesterol	135	USALAB	1/30/2004
Cholesterol	161	USALAB	2/9/2003
Cholesterol	255	USALAB	11/9/2002
Cholesterol	149	USALAB	7/20/2002
Cholesterol	147	LabsInc	4/1/2001
Cholesterol	150	LabsInc	12/30/2000

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## Registry Summary Reports

The PECSYS® system allows you to harness the power of its reporting capabilities by enabling easy and customizable report generation for patients who meet specific criteria. Reports can be run for all patients, at a specified practice site as well as for specified providers. For example, you can run a report on the PECSYS® system to answer questions such as:

- Which patients with hypertension had a prescription change for statins in the last 6 months and a blood pressure reading of over 140/90 at their last office visit?
- Which patients with Diabetes have not had an HbA1c test in over 6 months?
- Which patients with Asthma do not have a current severity assessment?
- Which patients with a diagnosis of Depression have not had a follow-up in 30 days?

PECSYS® includes many pre-loaded, standard reports, and you can create custom reports that combine any number of criteria to find particular groups of patients based on data in the registry. You can export data from the reports to Microsoft® Excel for further analysis, or use the report data with the Microsoft® Word Mail Merge feature to facilitate contacting patients.

In addition to the criteria-based registry reports, PECSYS® provides reports that summarize data for a particular condition. Summary reports currently are available for Asthma, Cardiovascular Disease, Depression, Diabetes, Prevention and Cancer Screening and Follow-up.

When previewing a summary report for any of the aforementioned conditions, you can select any summary statistic to see which patients are included or excluded from that statistic. For example, the illustration to the right shows which patients are included for element 9e of the Diabetes Registry Summary Report. The drill down shows the number of patients who have a blood pressure reading less than 130/80.

The screenshot displays the PECSYS Diabetes Registry Summary Report interface. The main window shows a summary report for 'Diabetes Registry Summary Report' from 4/4/2003 to 4/3/2004. It includes sections for Demographics, Visit Info, and Test/Data Info. A specific section, '9e. Patients BP < 130/80', is highlighted, showing a list of patients with columns for Chart Number, Last Name, First Name, Systolic BP, and Diastolic BP. A smaller window is open over this section, showing a '9e. Patients BP < 130/80' dialog box with 'Included' selected and a 'Copy To Clipboard' button.

Chart Number	Last Name	First Name	Systolic BP	Diastolic BP
10067	Example25	Angela	114	68
10167	Example2	Michael Lee	120	70
104361	Example31	Mabel	110	60
104362	Example32	Charline	120	70
104366	Example325	Kimberly	122	72
104367	Example892	Judy	120	74
104368	Example1055	Betty	100	70
104369	Example1123	Beri	120	70
104370	Example1123	Michael	126	78
104371	Example1303	Jeremy	122	76
104372	Example1359	Wilma	122	78
104373	Example1426	Susan	120	74
104374	Example1439	Jane	110	52

### Customization and Convenience

PECSYS® is delivered with Encounter Notes, Reports, and Reminders for many conditions and preventative services, all developed from evidence-based guidelines. However, if your organization has a specific health care focus that is not already in PECSYS, you can easily customize the software to address that focus.

PECSYS® includes the ability to automate many tasks. Reports, reminders, data imports and database backups can be scheduled to run at the convenience of the organization or user. For example, you can schedule them to run overnight so the results are readily available first thing in the morning.

To eliminate duplicate data entry and reduce errors, PECSYS® includes interfacing capabilities for the major medical laboratories\*. Aristos is working with developers of major practice management systems and electronic medical records to allow automatic import of data from those systems.\*\*

### Scalability of PECSYS®

The architecture of PECSYS® allows an unlimited number of clinics, providers, and patients. PECSYS® can be run on a single computer within one clinic or it can be distributed among different computers in a local or wide area network or for multiple practices via the Internet configured as an ASP.

### Security

All information passed between the tiers of PECSYS® is encrypted with a 128 bit key. Each database is protected by an unique organization keycode. Logins are available for five levels of access with audit reports available to track access and changes to the database. Provider access can be restricted by custom access levels.

### New Technologies for Improved Care

PECSYS® is a proven clinical information system that provides unique technologies to help advance the quality of patient care. PECSYS® provides health care professionals critical, up-to-the-minute information and tools they need to efficiently and consistently deliver quality care. Optimizing the health care system reduces costs and improves patient outcomes.

\* Quest Diagnostics, LabCorp.

\*\* Cerner, CliniFlow, MDServe, MegaWest, and more.




**PECSYS®**  
 clinical information system

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