

CDEMS

Chronic Disease
Electronic Management
System

REPORTS GUIDE



Feb. 2011

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CDEMS REPORTS

Using the Data

The CDEMS Progress Note supports the provider during a visit by organizing information normally distributed throughout the patient's chart. In the background, CDEMS accumulates patient information for every visit in an Access database. After recording data in a registry for a short time, you'll begin to see the value of the Access database as an efficient tool for patient monitoring, system change, and clinic management.

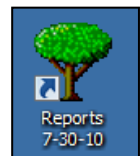
This guide will help you move beyond collecting data to *using* the data to study quality of care to improve patient outcomes. Population-based analysis is one of the key benefits for implementing a registry. CDEMS offers powerful tools to help a typical, non-technical user analyze patient information in the registry. The reports generated in CDEMS provide statistics and patient lists documenting care provided and gaps in care for collaborative reporting, quality certifications, grant substantiation, pay-for-performance reimbursements, etc. Five basic types of CDEMS Reports analyze population and individual patient care:

- Pre-Defined Diabetes Summary Report
- User-Defined Summary Reports (Create-A-Report template)
- Pre-Defined Intervention Lists
- User-Defined Intervention Lists (Create-A-List template)
- Custom queries

A full list and description of CDEMS reports appears in a table at the end of this Report guide.

Report Parameters

Start CDEMS Reports by double-clicking on the **CDEMS Reports icon** on your desktop (if you do not have a Reports icon, refer to the CDEMS Setup section in the Introduction/Data Entry section of the CDEMS User Guide for instructions.) Basic report parameters are defined at the Reports opening window shown at Fig. 1.



1. Identify the reporting time period using either of two options:

Date Range...

- a) In the Period section at the center of the opening screen, click on the "Date Range" button
- b) Enter a Start_Period date to identify the start of the reporting period.
- c) Enter an End_Period date; the default end date is always the current date

of Days...

- a) Click on the "Days" button, enter the number of days in the reporting period (e.g., 90)
- b) The program automatically calculates the Start_Period date from the default End_Period date (today's date).

2. Select a clinic by clicking on a clinic name in the “Select Clinic” list. The clinic-code appears in the “Clinic Selected” box. If the selected clinic is a *Total* clinic, the box titled “Clinics in List” displays the clinic_codes of individual clinics that are included in the aggregated report. Be sure to click on a clinic name even if the desired clinic is highlighted.
3. Double-click on any report in the Reports list or click on the report name, then click **Run**.

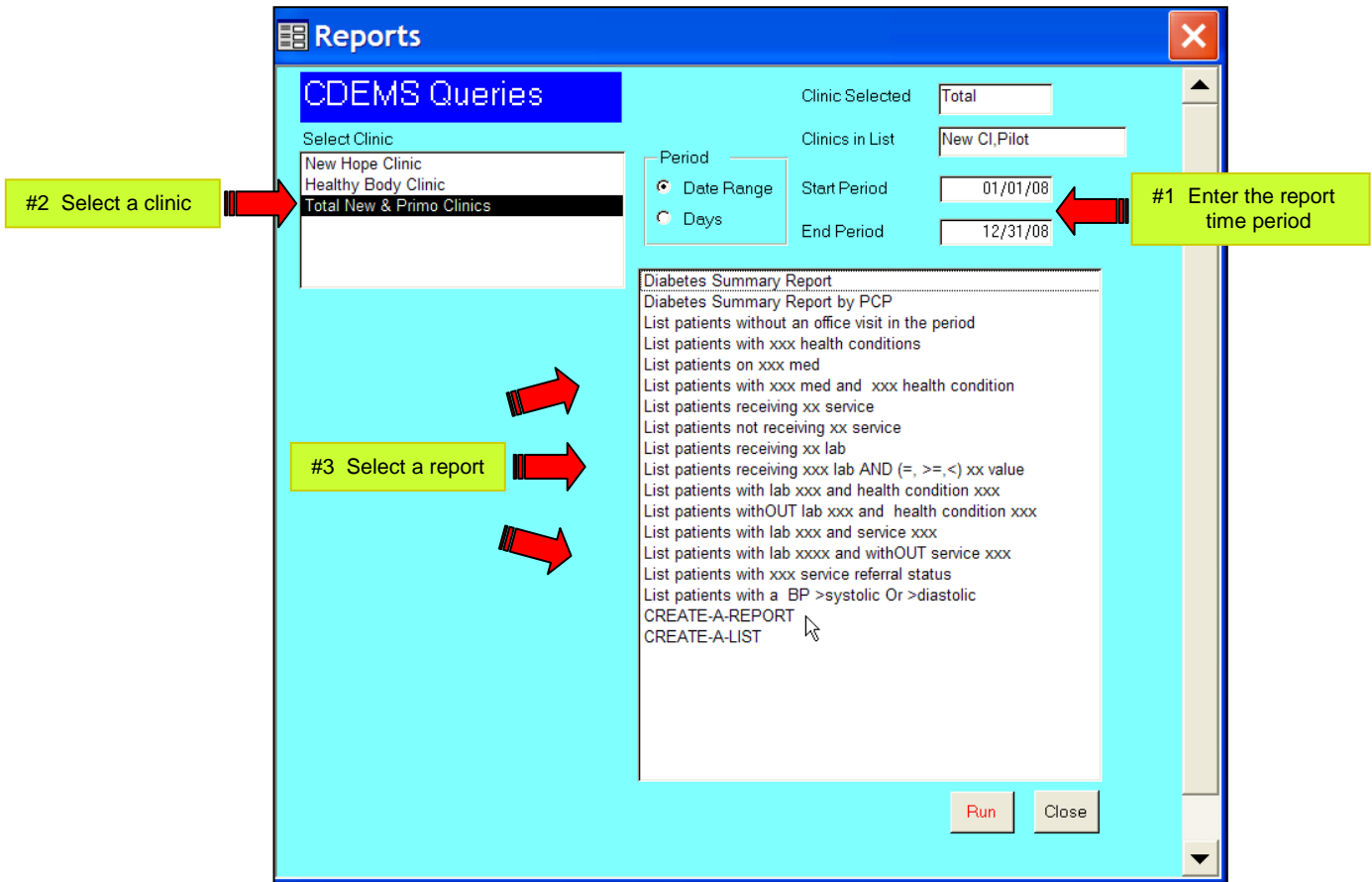


Fig. 1 – CDEMS Reports Opening Screen

Summary Reports

Summary reports are statistical analyses of data with counts and percentages calculated from information stored in the CDEMS data file. The Reports program offers pre-coded Diabetes Summary and Diabetes Summary by PCP reports.

Designed to provide maximum flexibility in a world of changing measures, standards and reporting requirements, the CREATE-A-REPORT template is an easy-to-use tool for building custom summary reports. Non-technical users can generate on-the-spot summaries that meet their needs and reflect their registry customizations without the need of a programmer. Through a series of advanced filters, CDEMS summaries are possible for many of the complex Healthcare Effectiveness Data and Information Set (HEDIS) reporting requirements.

The “Create-A-Report” template is the user’s palate for creating custom summary reports with counts and percentages on *single* variables for a specified health condition, combination of health conditions, or any condition for a total population analysis. The report template evaluates text or numeric fields and applies criteria filters (< >, =) to analyze demographics, visits, meds, labs and services stored in the registry database. Special queries involving multiple variables, complex filtering, or other time period constraints may be developed and included permanently in the Special Measures section of the summary report template. For example, the count of women age 40 and above with abnormal mammogram is an example of a multi-variate measure that would require a special query.

Report templates can be saved and added to the selection list of the main reports window. User-defined reports can then be run at regular intervals or for different time periods. Summaries may be calculated for a single clinic, aggregated clinics, by PCP within a clinic, or by insurance payer. Begin by defining the report parameters on the Reports opening window. Enter the report time period and select a clinic from the list – be sure to **CLICK** on the clinic name even if it is already highlighted. Select “Create-A-Report” from the list on the Opening screen to open the Create-A-Report template. A sample report template and resulting report are shown at Fig. 2 and Fig. 3.

frmCountPatients : Form

- DM Custom Summary

These Dx selected: DM-2, DM-1

All Possible Dx's: Adult Prev Hlth, Cardiovascular, Cerebrovascular, Coronary Athero

Demographic Info

Included in Report: Pts Count, Pts Avg Visits, Gender-Male, Gender-Female

Selections: Pts Count, Pts Avg Visits, Pts w/ 0 visits, Pts w/ 1-2 visits, Pts w/ 3-5 visits, Pts w/ 6+ visits, Gender-Male, Gender-Female, Gender-Unkn, Age Unkn

General Health

Included in Report: BP, BP >=130/and >=80, BMI

Selections: Blood Pressure, Body Mass Index

Medications

Included in Report: ASA, Glucophage

Selections: ACE Group, AG Inhibitor, ASA, BP Med, Gltazones, Glucophage, Insulin, Lipid Agent, Sulfonylurea

Conditions

Included in Report: DM-1, DM-2

Selections: Cerebrovascular, DM-1, DM-2, Heart, HTN, Hyperlipidemia, Nephropathy, Neuropathy, Periph vascular, Retinopathy, SelfMonitrBG

Services

Included in Report: Retinal Ex, DM Educ, Flu Vac, Pne Vac, Smke Asmt, Smke Ce

Selections: Dental, DM Educ, Exer Asmt, Flu Vac, Foot chk, Foot risk Asmt, NutEduc, Pne Vac, Retinal Ex, SM Goal, Smke Asmt

Laboratory

Included in Report: HbA1C, HbA1C average, ha1c >7.0, ha1c <=7.0, LDL, ldl >100, ldl <=100, HDL, hdl >45, hdl <=45, Cholesterol

Selections: 24HrUrineProtein, ALT (SGLT), AST (SGOT), Cholesterol, HbA1C, HDL, LDL, MIAI/Crea ratio, Ser. Creatinine, Triglyceride

Special Measures

Included in Report: Smoker crit (lastever asmt), Tobacco-Cnseing Offered

Selections: Smoker crit (lastever asmt), Tobacco-Cnseing Offered, 2 HbA1c 90+ days apart, Pvac Offered ever & >=65yrs, Colorectal Scn 1yr >50yrs, Colorectal scrn** & >50yrs, AntiPlatelet/AntiCoag* Rx, Females >=18, Pap w/ 3yrs & F, >=18yrs, Females >=40, Mammo w/ 30mo, F, >=40yrs, MamAbn w/ 30mos, F, >=40, MamAbnDx <60 days

* Antiplatelet: clopidogrel, aspirin or oral anticoagulant

**Colorectal scrn: sigmoid w/ 5yrs or colonoscopy w/ 10 yrs AND >50yr

Save [Icon] Delete [Icon] Calculate [Icon] Exit [Icon]

Fig. 2 – Sample Create-A-Report template

- DM Custom Summary

Healthy Body Clinic
01/01/01 to 07/23/05

All PCPs

Demo			Labs		
Visits			HbA1C		
Pts Count	1	100.0%	HbA1C	1	100.0%
Pts Avg Visits	1		HbA1C average	10	
Gender			hA1c >7.0	1	100.0%
Gender-Male	1	100.0%	hA1c <=7.0	0	0.0%
Gender-Female	0	0.0%	LDL		
Vitals			LDL	1	100.0%
Blood Pressure			ldl >100	1	100.0%
BP	1	100.0%	ldl <=100	0	0.0%
BP >=130/and >=80	0	0.0%	HDL		
BodyMass Index			HDL	1	100.0%
BMI	1	100.0%	hdl >45	1	100.0%
Health Conditions			hdl >=45	1	100.0%
DM-1	0	0.0%	Cholesterd		
DM-2	1	100.0%	Cholesterd	1	100.0%
Medications			ALT (SGLT)		
ASA	1	100.0%	ALT (SGLT)	0	0.0%
Glucophage	1	100.0%	AST (SGOT)		
Services			AST (SGOT)	1	100.0%
Retinal Ex	0	0.0%	Special Measures		
DM Educ	0	0.0%	Smoker cnt (astever asmt)	1	100.0%
Flu Vac	1	100.0%	Tobacco-Cnseing Offere	1	100.0%
Pne Vac	0	0.0%			
Smke Asmt	1	100.0%			
Smke Ce	0	0.0%			

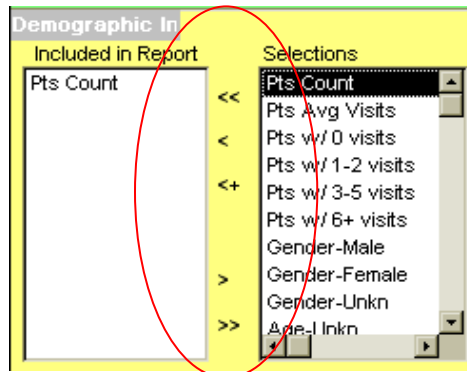
Fig. 3 – Special DM Summary Report generated from template shown at Fig. 32

Create-A-Report Template (user-defined summary)

Development of a custom summary report starts at the green “Create-A-Report” box in the upper left corner of the summary report template. To produce a summary report for a population with a particular chronic condition, select a Dx (health condition) from the “All Possible Dx” list. Hold the CTRL key down to select multiple conditions. Patients included in the report must have one or more of the conditions specified. Selecting DM-2 and HTN includes patients who have Type 2 Diabetes OR Hypertension OR both conditions. To produce a summary report for the total population including all patients regardless of chronic condition diagnosis, select <any> from the “All Possible Dx” list.

The Dx chosen in step 1 determines the measures available for selection in the Medications, Conditions, Services and Labs sections of the template. The Dx selection reflects the measures defined by your clinic for the particular health condition in CDEMS. Selecting <any> as the condition will display all possible measures for all conditions as selection options. Double-click (or use left arrow key) on individual items listed in the Selections box (right side) to include in the report; items added will appear in the “Included in Report” box on the left side. Remove an item by double-clicking (or use right arrow key) on the item in the “Included in Report” list.

Special operator keys located between the all possible “Selections” and “Included in Report” boxes speed up report creation and allow for identification of special criteria. The functions of these operator keys are described in the table below:



<u>Operator</u>	<u>Function</u>
<	Add selected item to report
<<	Add ALL items within the section to the report
<+	Add an item to the report with special criteria defined (e.g. HbA1c < 7.0 or smke asmt = “current”)
>	Remove selected item from report
>>	Remove ALL items within the section from the report

⌘ **TIP:** For a quick and easy summary report, use the << operator to include all fields in each section of the report. Then select all labs, click the <+ special criteria key, and select “average” to produce a count and average for every lab.

Defining Measures Criteria

The special criteria key (<+) between boxes on the template screen activates a pop-up window where criteria for the selected item can be defined. A sample criteria definition screen is shown at Fig. 4.

Criteria can be defined to specify a count of numeric results with or without additional parameters. For comparison purposes, you may find it helpful to analyze the same item several times using different evaluation criteria. For example, a series of HbA1c comparisons might evaluate:

- Hba1c = numeric
(total count of patients who have had an HbA1c with a numeric result)
- HbA1c = Average
(calculated average HbA1c using last HbA1c result for all patients with a numeric result)
- HbA1c = numeric < 7.0
(total count of patients whose last HbA1c result was less than 7.0)
- HbA1c = numeric > 8.0
(total count of patients whose last HbA1c result was greater than than 8.0)

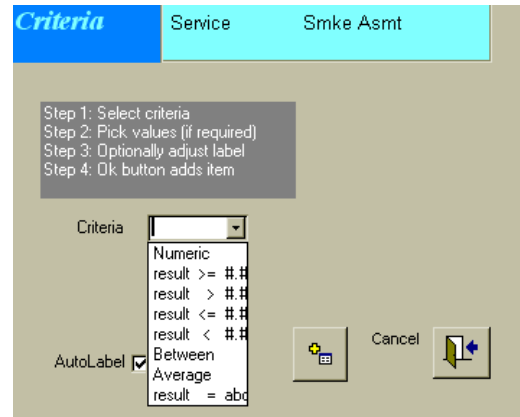


Fig. 4 – Criteria Definition Screen

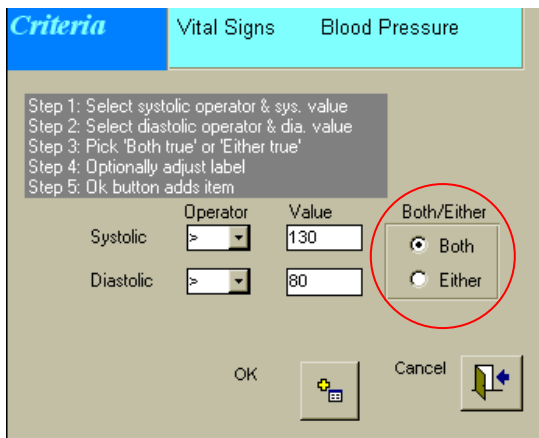


Fig. 5 – Special Criteria Definitions for BP

Fig. 5 illustrates a more complex example with dual blood pressure criteria defined to count patients with Systolic BP > 130 and Diastolic BP > 80. Note that the *Both* selection is activated on the Criteria screen to indicate that both parameters must be true for a patient to be included in the count for this measure. If the *Either* box is chosen and either systolic or diastolic values meet the criteria, the patient will be included in the count. To compare various results for the same item within a report, enter the item multiple times into the template specifying different criteria parameters (e.g. BP > 130/80, BP > 140/90, BP <=130/80, etc).

The “Create-a-Report” template also allows for complete flexibility in handling user-defined *text* entries. Text results are evaluated with a match on any text value used to record a result in the data entry program. This means that the former “current,” “past,” or “never” results for smoke assessment could be replaced with “yes” or “no” or any other user-defined entry. Of course, the accuracy of counting text entries depends on consistent recording of results during data entry. For example, an evaluation of foot check recorded as “monof” (monofilament test) in the result field would *not* include variations on the “monof” results entry such as “MF”, “mono-f,” “mfila” in a user-defined text evaluation.

Special Measures

Complex multi-variable queries can also be included in a user-defined summary report. These special pre-coded and/or custom queries are listed in the Special Measures box of the report setup template. Scroll to the far right on the Report Setup screen to view the Special Measures selection list (Fig. 6). Here you'll find several pre-coded queries.

Other pre-coded queries may also be available in tblReportSpecial though not displayed in the Special Measures List. Switch to database view (press F11) > click Tables > double-click tblReportsSpecial to view many custom depression queries numbered -402, -408, -410, etc. Remove the "-" in front of the number to display these queries on the Special Measures list. Type a "-" before any report_order number you want to remove from the display list.

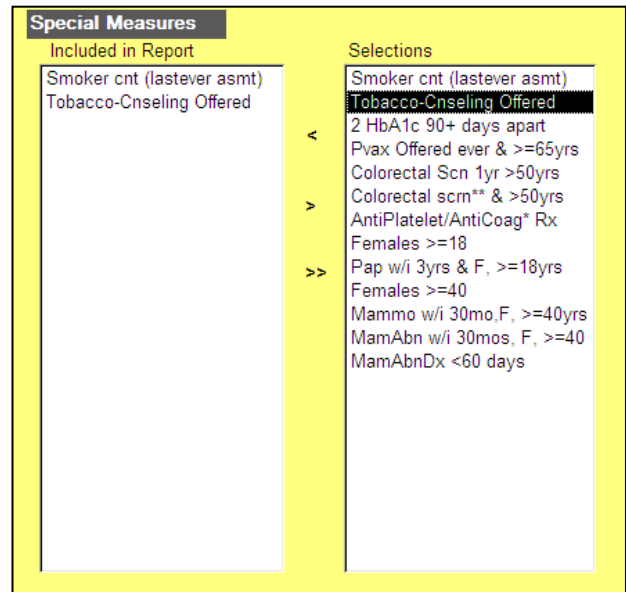


Fig. 6 – Special Measures

Custom Source Queries

Custom queries may also be developed and displayed in the Special Measures list. These custom source queries must be saved with a "qsm" prefix (e.g. qsmSmokeAsmtCurrentEver2). The structure of a custom query must culminate in a query with a true/false evaluation on a single variable.

For example, to get an accurate count of smokers, the custom query looks for "current" smokers at their last smoke assessment whenever it occurred even if not within the report time period. If a patient has completed, been referred or declined smoke cessation counseling, they are also classified as a smoker even if not assessed as a "current" smoker. The custom query variables include (1) last smke assessment result and status and (2) last smoke cessation status and result. The query driving the special measure takes a broader approach both in time and classification in looking at tobacco status than the simple smoke assessment in the service section of the template. In the service section, smoke assessment = "current" reflects only those patients whose assessment *within the report time period* was recorded as "current".

Queries may be developed from scratch in design view (see "Custom Queries" section of the Reports Guide) or put together with technical support assistance and SQL code pasted into a new query. Either way, information about a custom query must be added to tblReportsSpecial to be included in the special measure selection list and to activate the appropriate query for evaluating the special item. Special measures queries can be turned off or on by adding or removing the "-" sign in the Report Order column. A - sign in front of the Report Order number prevents it from displaying in the Create-a-Report template. In database view, click on Tables > double-click on tblReportsSpecial to open the Special Reports table. Segments of tblReportsSpecial are shown at Fig. 7 for a cut-away

view of the fields in this extensive table. Fields within tblReportsSpecial are shown in the table following Fig. 7.

report_order	display_label	description
-418	Count CSD w/i 24 mos	(7. Denominator) Within 24 months of report period end, new epi occurred with PHQ>=10
-416	CSD w/ psych or med 1m	(7.) Within 24 months of report period end, new epi occurred with PHQ>=10, if several the
-414	Count of Depressed, EOP	(6. Denominator) At end of period Dx of major depression or dysthymia, if dysthymia, start
-412	Depressed, antidepress Rx	(6.) At end of period DX of Major depression or dysthymia, and antidepressant med with
-410	Improved current function	(5.) Had a current functions test recorded with last same same date as last new epi date
-408	2 current function tests	(5.denominator) Had a current functions test recorded with last same same date as last n
-406	CSD, PHQ 4m retest <5	(4.) Last PHQ is <5, dated >4 months after the last new epi. Last new epi PHQ over 10
-404	PHQ w/i 6m of period end	(2.) Either a PHQ or a new epi in last 6 mos of report period.
-402	CSD, >=50% PHQ change	(1.) Before report period end, last new episode result >=10 and subsequent PHQ <= (0.5
-400	Count of CSD	(1. Denominator) Before report period end, last new episode result recorded with PHQ >=
1	Tobacco-Counseling Offered	Within report period, patients completed, referred or declined a smoking cessation class
5	Smoker cnt (lastever asmt)	Between 1/1/1900 to report period end date, Last smoking assessment reported patient w
10	2 HbA1c 90+ days apart	Within report period at least two HbA1c lab tests given that were 90 or more days apart
15	Pvax Offered ever & >=65y	Between 1/1/19

detail	source_query	field_name
	qsmDepression	CSD24
	qsmRxOrPsych	RxOrPsych
	qsmAntidepress	depressed
	qsmAntidepress	antidepressant
	qsmCurrFunc3	functiondrop
	qsmCurrFunc2	currfunction
	qsmPHQ4	PHQretest5
raw codes: "new epi", "PHQ", statuses: "c", "r", "d", result numeric	qsmPHQ2a	PHQ6m
raw codes: "new epi", "PHQ", statuses: "c", result numeric	qsmPHQ2	PHQdrop50p
raw codes: "new epi", "PHQ", statuses: "c", "r", "d". Result nu	qsmPHQ1	CSD
raw codes: "Smke ce", statuses: "c", "d", "r"	qsmSmokeCes:	offered
raw codes: "Smke ass" statuses: "c"; "Smke ce" ("c", "r", or	qsmSmokeAsrr	smoker
raw codes: "ha1c", statuses: "c"	QRY_HbA1c90	Ha1c90DaysAp
raw codes: "Pne vac", statuses: any status(e.g., "c", "d", "r")	qsmPVacOver65	pvax65

Fig. 7 – tblReportsSpecial

Descriptions of tblReportsSpecial fields:

<u>Column</u>	<u>Description</u>
report_order	numbers define the order of items in the Special Measures list box; a measure is excluded from the Special Measures display list by entering a “-“ before the number in the report_order column. Turning off unused measures keeps the Special Measures list to a manageable and functional size.
display_label	short description of measure that displays in the Special Measures list box
description	Documentation describing the special measure
detail	Documentation of raw codes and status of variables required for the custom measure
source-query	name of query that generates the final count & percentage info to be displayed in the report
field_name	Single key variable for true/false evaluation for inclusion in the count

Calculate a Summary Report

Report Options

Click the Calculate button (!) in the bottom row of the report template to run a report. The Calculate function calls up the Report Options screen for refinement of additional report options before running the final analysis:

Fig. 8 – Create-a-Report options

1. **All PCP** report (default) – summary report with aggregated data for all providers
2. **Single PCP** report – individual summary reports for each provider
3. **Insurance** – summary report grouped by individual insurance payers recorded in the registry. This option takes a broad swipe at documenting pay-for-performance statistics for chronic disease health care. At this time, it is not possible to produce an insurance summary by insurance type (Medicare, Medicaid, Commercial) or by PCP. Thoughtful planning in how insurance plans are recorded can enable an analysis, for example, by Medicaid plan.

Individual summary reports display for each provider or insurance payer when PCP or Insurance are selected. While the format and content of each report page is the same, the data reported relates to each provider or insurance payer.

Advanced Filtering Options

Additional filters can be applied to finetune the report further by specifying gender, age and ethnicity criteria. The logic for these filters applies the criteria entered for gender AND age AND ethnicity to include patients who fall within the specifications. The logic for the example shown at Fig. 9 would include patients of any gender between the ages of 50 and 120 and all ethnic groups. The filter settings default to include ALL patients.

Click the “female” gender button to include only females in the analysis; click “male” to include only male patients.

Fig. 9 – Create-a-Report filter options

The “between” age setting gives maximum flexibility to define age categories in a report by specifying an age less than, between two values, or greater than a specified value. Values entered for age1 and age2 are inclusive. Below are a few examples for entering age values:

- Less than 18: Age1 = 0, Age2 =17
- Between age 18 and 40:
Age1 = 18; Age2 = 40
- Age 50 and over:
Age1 = 50; Age2 = 120 (or any very large value to include the oldest possible age)

To use the Ethnicity filter, choose one or more ethnicities from the list of those groups actually present in your registry. To select multiple ethnicities for inclusion in the report, hold the CTRL key down while making selections. In the case of multiple selections, patients are included if their ethnicity matches any one of the selected ethnicity filters. The example in Fig. 10 illustrates the selection of “Asian” and “Pacific Islander” limiting the entire report to Asian or Pacific Islander patients only.

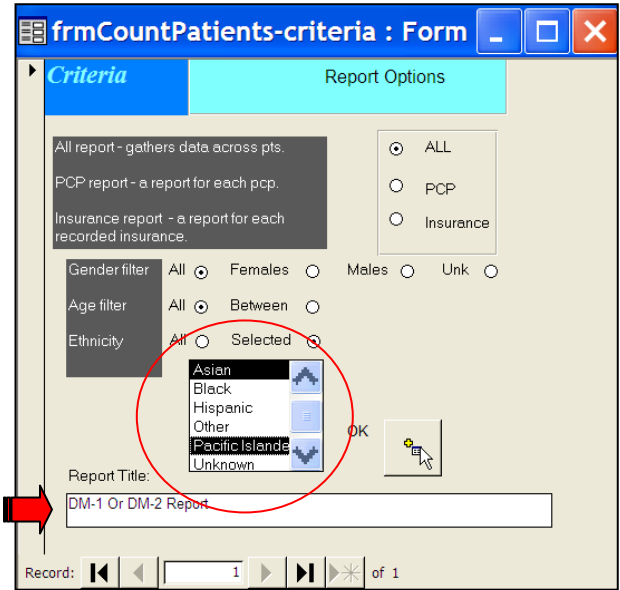



Fig. 10 – Create-a-Report “Ethnicity” filter

Save Create-a-Report Template

The Create-a-Report template can be saved to run a report at regular intervals, say monthly or quarterly, or to compare different time periods or clinics. It’s important to understand that it’s the report *template* that is saved, not actual report data. Saved summary report templates appear on the opening window reports list below CREATE-A-REPORT so as individual reports are saved, the reports list grows infinitely. Click the Save button periodically to protect your work as you develop a complex report template. The summary report title is shown and can be edited on the criteria screen after clicking the Calculate! button [see  at Fig. 10]. The program will suggest a report title based on the condition(s) identified at Step 1, but you may enter a more description title.

Click the Calculate! button to run the report once the template setup is complete. Of course the template can be modified and saved again as the report is refined.

⚙️ TIP: Use a saved report template as the starting point for creating a new template by simply modifying an existing report template and saving with a new report name.

Delete a Report Template

Saved templates are easily deleted from the Reports list by opening the desired report template and then pressing the Delete button to clear the saved report template and remove it from the list.

Patient Intervention Lists

Intervention lists answer many of the questions naturally generated by statistical summary reports. For example, “Where are the gaps in care?” “Who are the patients without a visit in the past year?” “Which patients had HbA1c results <7 in the last six months?” “Which persistent asthma patients need an action plan?” And, in these days of pay-for-performance, “Which providers are meeting the criteria set for diabetes healthcare?” Intervention reports produce detailed patient lists showing names, contact info and other key information about who has had or not had visits, various tests, services, etc. during the report time period. Begin defining the parameters for an intervention list report on the CDEMS Reports opening screen (shown at Fig. 11).

1. First define the **time period** for the report by entering start and end dates for the period, or enter the # of days and let CDEMS calculate the start and end dates.
2. Then select the desired **clinic** from the list
3. Finally, select one of the pre-defined **intervention lists** from the list > click **Run**

Fig. 11 demonstrates entries for a pre-defined intervention report for Healthy Body Clinic. The reporting period starts January 1, 2008 and ends December 31, 2008. The query selected is “List patients with lab xxx and xxx health condition” with Lab and Condition defined by selections in the pop-up boxes. In this example, the Lab is “HbA1c” and the Condition is “DM-2”.

The screenshot shows the 'Reports' window with a 'CDEMS Queries' section. On the left, a 'Select Clinic' list includes 'New Hope Clinic', 'Healthy Body Clinic' (highlighted), and 'Total New & Primo Clinics'. Below this, 'Lab' is set to 'HbA1c' and 'Condition' is set to 'DM-2'. On the right, 'Clinic Selected' and 'Clinics in List' are both 'Pilot'. The 'Period' is set to 'Date Range' with 'Start Period' as '01/01/08' and 'End Period' as '12/31/08'. A list of queries is shown, with 'List patients with lab xxx and health condition xxx' selected. At the bottom right, there are 'Run' and 'Close' buttons.

Fig. 11 – Opening screen with intervention list parameters

Running this report produces a list (Fig. 12) of Healthy Body Clinic patients with Type 2 Diabetes with an HbA1c test in the report time period. The list shows contact and key information about the latest HbA1c lab test.

clinic_code	chart_number	last_name	first_name	address1	city	state	zip	working_code	service_date	result
PILOT	1	Terry	Testor			WA		HbA1C	6/21/2008	6.5
PILOT	2	Finkeltonless	Fred	1 Star Wars Lane		WA		HbA1C	6/7/2008	8.2

Fig. 12 – Patient list from sample Intervention Report (DM-2 patients with HbA1c lab)

Create-A-List Template (user-defined intervention list)

The “Create-a-List” template is the user’s palate for creating custom intervention lists displaying the selected fields for a specified health condition or combination of health conditions. User-defined intervention reports are created by selecting the “CREATE-A-LIST” option on the CDEMS Reports opening window (see Fig. 13). Multiple parameters to choose from and filtering techniques provide options for creating unlimited patient lists. Always start by entering the start and end dates for the report time period and selecting the clinic from the clinic list.

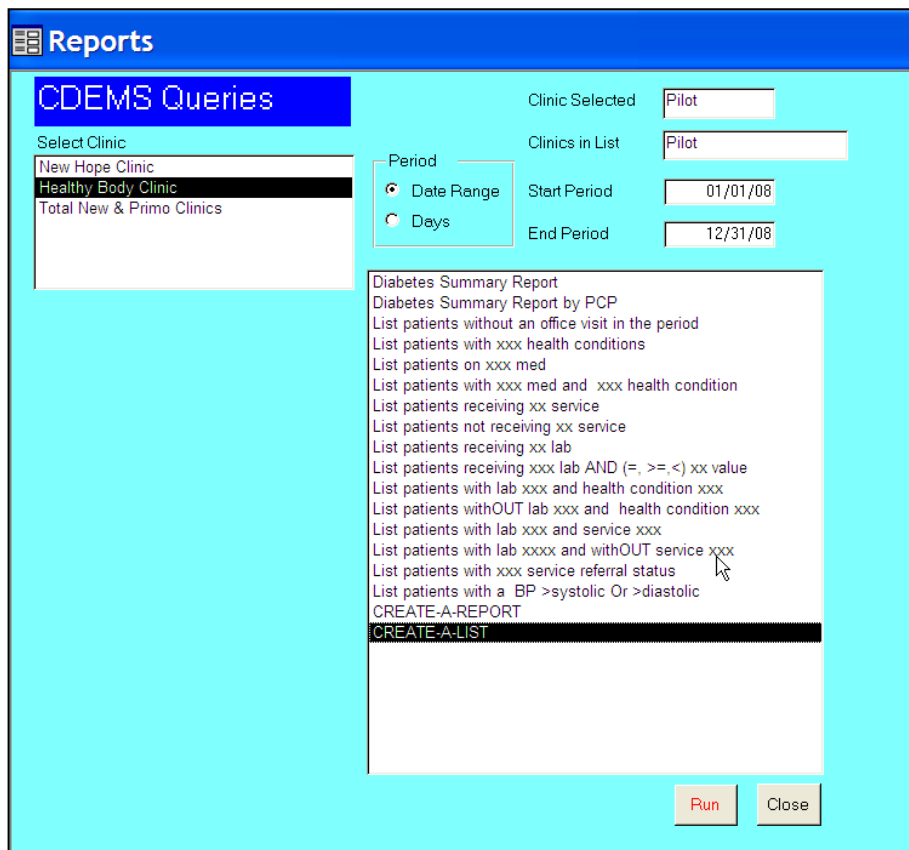


Fig. 13 – CREATE-A-LIST on Opening Reports screen

Custom list development starts at the green “Create-A-List” box in the upper left corner of the list template by selecting a Dx (health condition) from the “All Possible Dx” list. Hold the CTRL key down to select multiple conditions. The condition(s) identified in step 1 determine the options available for selection in the Medications, Conditions, Services and Labs sections of the template. The selections lists correlate directly with the measures that are defined by your clinic for the particular health condition in CDEMS. Double-click (or use left arrow key) on individual items list in the Selections box (right side)

to include in the report; items added will appear in the “Included in Report” box on the left side. Remove items by double-clicking (or use right arrow key) on the item in the “Included in Report” list.

The special operator key (<+) in the Laboratory section of the List template allows inclusion of a numeric lab result in the resulting table. In the Services section of the List template, use the special operator key (<+) to include service results in a separate column. Last date and last result are concatenated in the table for a lab or service added using the < key. The <+ key displays the last result in a separate column for later sorting and filtering.

Create-A-List Inclusion Rules

- 1. THE PATIENT MUST BE ACTIVE IN THE CLINIC WITHIN THE TIME PERIOD OF THE REPORT.**
- 2. THE PATIENT MUST HAVE AT LEAST ONE OF THE HEALTH CONDITIONS SPECIFIED IN THE TEMPLATE WITH A DIAGNOSIS DATE BEFORE THE END DATE OF THE REPORT TIME PERIOD.**
- 3. THE LAST EVENT OR VALUE MUST BE COMPLETED WITHIN THE REPORT TIME PERIOD.**

The screenshot shows the 'Create-A-List' interface with several panels:

- Diagnoses:** 'These Dx selected' (DM-1, DM-2) and 'All Possible Dx's' (Cerebrovascular, DM, DM-1, DM-2, DM Unknown).
- Demographic Info:** 'Included in Report' (Chart Number, Last Name, First Name, Street Address, City, State, Zip, Phone1, Phone2, PCP, DOB) and 'Selections' (Last Name, First Name, Street Address, City, State, Zip, Phone1, Phone2, PCP, DOB).
- Medications:** 'Included in Report' and 'Selections' (ACE Group, AG Inhibitor, ASA, BP Med, Glitazones, Glucophage, Insulin, Lipid Agent, Sulfonylurea).
- Services:** 'Included in Report' (Smke Ass result, Smke Ass) and 'Selections' (Dental, DM Educ, Exer Ass, Flu Vac, Foot chk, Foot risk Ass, NutEduc, Pnc Vac, Retinal Ex, SM Goal, Smke Ass, Smke Ce).
- Conditions:** 'Included in Report' and 'Selections' (Cerebrovascular, DM-1, DM-2, Heart, HTN, Hyperlipidemia, Nephropathy, Neuropathy, Periph vascular, Retinopathy).
- Laboratory:** 'Included in Report' (HbA1C, HbA1C numeric) and 'Selections' (24HrUrineProtein, ALT (SGLT), AST (SGOT), Cholesterol, eGFR, HbA1C, HDL, LDL, LDL(Direct), MiA/Crea ratio, Ser. Creatinine, Triglyceride).

A red arrow points to the '<+' key in the Services and Laboratory sections, with a callout box stating "Special criteria selection key for service & lab results".

ChartNum	LastName	FirstName	PCP	'last visit'	'Visit count'	Smke Ass	(Smke Ass #)	ha1c	(ha1c #)
1	Terry	Testor	Locum Tenu	5/21/2008	3	01/05/07 (current)	current	06/21/08 (6.5	6.5
2	Finkeltonless	Fred	DOORIGHT	6/7/2008	3	03/01/08 (current)	current	06/07/08 (8.2	8.2
3	Duck	Daisy	PAYNE						

Fig. 14 – Sample List Template & Intervention List

Fig. 14 above illustrates a customized template for the Pilot Clinic to generate a list of DM-1 or DM-2 patients including provider name, last visit date, visit count, last smoke assessment and result, and last HbA1c and numeric HbA1c for the year 2008. Note the health conditions DM-1 and DM-2 are identified in the green box in the upper left corner of the template. Selections available in the blue area of the form are the available options based on the user's DM-1 and DM-2 setup. Fields to be included in the report are chosen from the Selections lists; items appearing in the "Included in Report" boxes display as columns in the list table produced by this query.

The patient list produced in this example shows the clinic, chart number, last name, first name, provider name, last visit date, visit count, last smoke assessment date and result and last HbA1c date/result and HbA1c numeric result for patients active in the Pilot clinic during 2008. The points below describe in more detail who and what is included in the table, according to the inclusion rules described previously:

- A row of information is displayed for each active patient in the selected clinic. Active patients are defined as patients without an end date (tblDemo) or with an end date later than the report end date. Therefore, a patient who is active in the registry for a single day within the time period of the report would be included in the list. Clinic_codes with a date appended (e.g. Pilot06/18/08) signify that a patient has been inactivated in the registry. The date following the clinic-code is the end_date recorded for the patient in tblDemo.
- Date and result are displayed for selected parameter(s) completed within the report time period. A lab value recorded in 2007 would not be displayed in a report for the year 2008 time period.
- An empty field signifies that a service or lab was not recorded for the patient within the report time period. Empty fields are significant fields to filter on for determining "what's missing" for each patient.

The list table can be filtered on any field and columns can be re-sorted, rearranged and/or reformatted to further refine the table before printing. Use the Access menu bar File > Print command to print the final table. Filtering and sorting within a table are described in detail in the next section of this Guide. List tables can be copied and exported to an Excel spreadsheet for further manipulation or to save the table.

Save Create-a-List Template

User-defined report templates can be saved and run again at regular intervals, say monthly or quarterly, or to compare different time periods or clinics. It's important to note that it's the report *template* that is saved, not actual report data. Saved intervention list templates appear in the reports list below CREATE-A-LIST.

Table Filtering & Sorting

Take advantage of the powerful Microsoft Access filtering and sorting tools to target specific information in CDEMS tables. The simple techniques described below will help you refine tables produced by any of the pre-coded CDEMS intervention queries or by the "Create A List" template. Lists can also be formatted by resizing, rearranging or hiding columns or changing font sizes. Filtering, sorting and formatting changes cannot be saved within the template. These same sorting and filtering techniques can also be used in any of the CDEMS data tables (tblDemo, tblLabs, tblHealth, tblServices, tblMeds, tblVisits). Do NOT save design changes (sorting or filtering changes) when closing CDEMS tables.

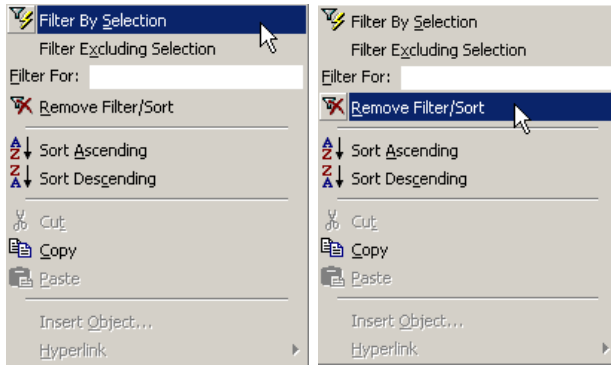
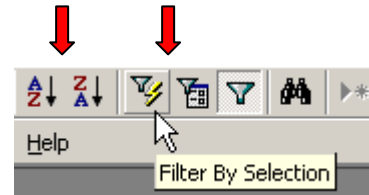


Fig. 15 – Filter By Selection/Sort Functions

From any of the intervention lists or CDEMS data tables, click the right mouse button in the cell you want to filter on > then left-click “Filter by Selection” or “Filter Excluding Selection”. Layers of filters can be applied to fine-tune the information displayed. Filters can be removed by a right-click of the mouse in any cell > then left-click on “Remove Filter/Sort”. All filters are removed and the full table restored.

Alternative Access icons for “Sort” and “Filter By Selection”



Alternatively, “Filter By Selection” and “Sort” icon keys are also available in the Access menu bar.

The figures below illustrate a series of filters applied to a list table to produce one provider’s list of active patients without a visit in the time period:

Fig. 16 – Sample Series of Filtered Lists

Filter #1 – Right-click in the clinic_code cell = “Pilot” > Filter by Selection to show only currently active patients in the list (e.g. clinic code = “Pilot06/18/04” is removed from the list).

Filter on “Pilot” to include only ACTIVE patients in the Pilot clinic

clinic_code	ChartNumber	LastName	FirstName	PCP	'last visit'	ha1c	(ha1c #)
Pilot	19870	Phitt	Priscilla	Welby, Nick	10/10/04	11/12/04 (7.0)	7
Pilot	24681	Garcia	Jose	Dudley Dooright	01/14/04	03/17/04 (10.6)	10.6
Pilot	55012	Younger	Suzette	Dudley Dooright	03/25/04		
Pilot	84410	Singh	Nimmi	Welby, Nick		06/15/04 (7.8)	7.8
Pilot	92341	Fox	Franklin	Locum Tenums	09/15/04	09/15/04 (7.6)	7.6
Pilot06/18/04		ss	Fred	Dudley Dooright	04/15/04	03/20/04 (8.0)	8

List after Filter #1

clinic_code	ChartNumber	LastName	FirstName	PCP	'last visit'	ha1c	(ha1c #)
Pilot	19870	Phitt	Priscilla	Welby, Nick	10/10/04	11/12/04 (7.0)	7
Pilot	24681	Garcia	Jose	Dudley Dooright	01/14/04	03/17/04 (10.6)	10.6
Pilot	55012	Younger	Suzette	Dudley Dooright	03/25/04		
Pilot	84410	Singh	Nimmi	Welby, Nick		06/15/04 (7.8)	7.8
Pilot	92341	Fox	Franklin	Locum Tenums	09/15/04	09/15/04 (7.6)	7.6

Filter #2 – Right-click on PCP = “Welby, Nick” > Filter by Selection for the list of Dr. Welby’s active patients.

clinic_code	ChartNumber	LastName	FirstName	PCP	'last visit'	ha1c	(ha1c #)
Pilot	19870	Phitt	Priscilla	Welby, Nick	10/10/04	11/12/04 (7.0)	7
Pilot	84410	Singh	Nimmi	Welby, Nick		06/15/04 (7.8)	7.8

⌘ **TIP:** Check the Record count in the lower left corner of the table for quick counts of the filtered lists.

Filter #3 – Right-click on any empty last_visit cell > Filter by Selection for the list of Dr. Welby’s active patients *without* a visit in the time period.

clinic_code	ChartNumber	LastName	FirstName	PCP	'last visit'	ha1c	(ha1c #)
Pilot	84410	Singh	Nimmi	Welby, Nick		06/15/04 (7.8)	7.8

Right-click on any column heading > click **Sort Ascending or Descending** (or use the A/Z - Z/A Access icon sort key) to re-order lists by the selected column, e.g. chart number, last name, date, etc. Items in the column will be arranged either in alphabetical or numeric order (or reverse order) depending on the field type being sorted and the sort order chosen. Right-click on any table cell > click **Remove Filter/Sort** to remove all filters and sort definitions. All filters and sorts are removed simultaneously and the original full data table is restored.

⌘ **TIP:** It’s also possible to use mail merge functions to create mailing labels in Microsoft Word if address fields are included in the list table. Instructions for merging names and addresses from CDEMS tables and queries can be found in the CDEMS Appendix – a separate guide available at www.cdems.com (“Download Files” page, Documentation section).

You’re limited only by your imagination in looking at registry data in different ways using just a few simple techniques!

Custom Queries

Advanced users may also tap the vast potential in Access for creating custom queries. Please use great caution about intentionally or inadvertently changing existing queries in the program. Modifying the set of pre-coded CDEMS queries can produce unexpected changes as many queries feed other queries or reports. Also, pre-programmed CDEMS query changes will be *overwritten* by newer versions of the Reports program. It’s advisable to create custom queries and save them with a “cqry” prefix to facilitate easy identification and export to an upgraded Reports program.

Begin by looking at the structure of existing CDEMS queries. For an inside view of the structure of a query, press the **F11** function key at the top of your keyboard from the Opening Window of CDEM Reports. The database window is shown at Fig. 17. Select the Queries tab > choose a query from the list > select Design view.

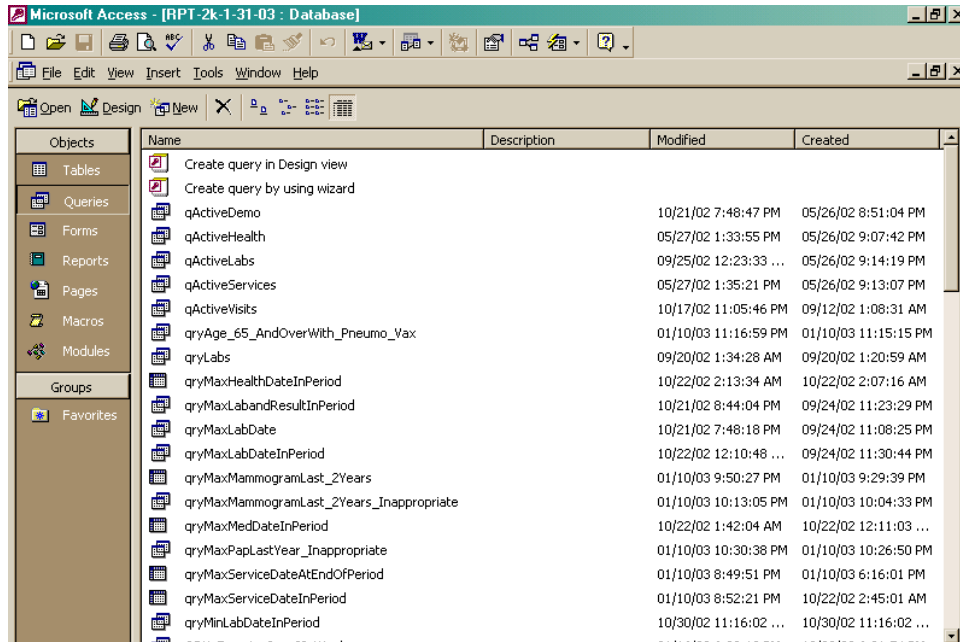


Fig. 17 – CDEMS Database View

Fig. 18 shows a partial snapshot of the Design View for a relatively simple custom query. The query called `cqry_hba1cinperiodByPatByPCP` creates a list of patients with HbA1c dates and results during a defined period of time, grouped by PCP.

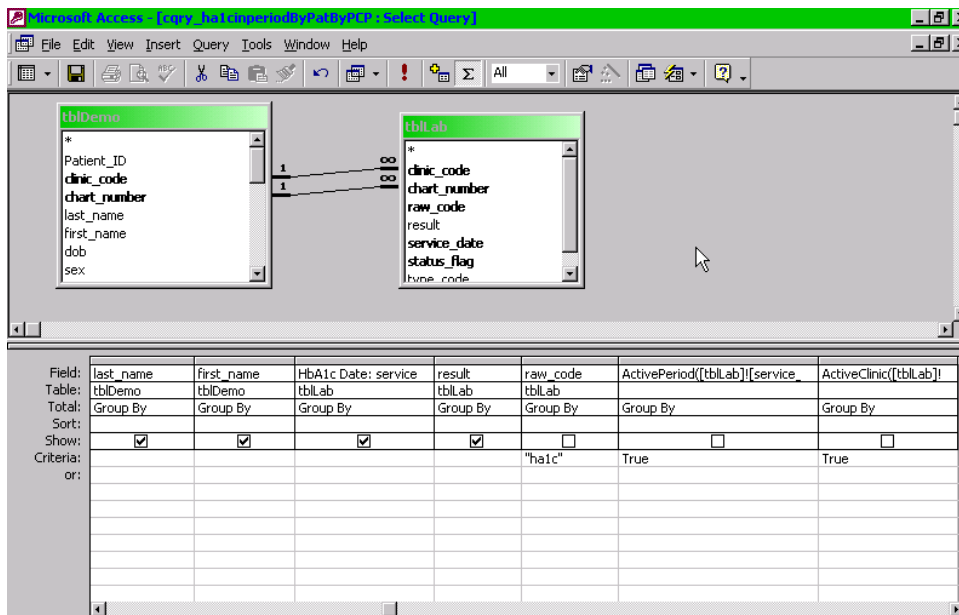


Fig. 18 – Sample custom query in Design View

Custom queries can be very simple or extremely complex depending on your experience with Access database programming and the nature of the information desired. An Advanced Query Guide is available in the Documentation section on the “Download Files” page at www.cdems.com. Also, check the

CDEMS User Forum at the CDEMS website for custom queries shared by other users, or call the CDEMS Support Line at 1-800-478-3563 (Washington only); 916-817-1401(national) for assistance.

CDEMS Reports List

Report Name	Description
SUMMARY REPORTS	
Diabetes Summary Report	Pre-coded report summarizing Diabetes demographics, visit & test statistics for selected clinic within the report time period
Diabetes Summary Report by PCP	Pre-coded report summarizing Diabetes demographics, visit & test statistics by PCP for selected clinic within the report time period
Create-A-Report	Template for user-defined statistical reports
INTERVENTION REPORTS	
List patients without an office visit in the period	List of patients without an office visit in the period
List patients with a BP > (systolic)/(diastolic)	List of patients with a BP > xxx/xx (fill in systolic xxx and diastolic xx)
List patients on xxx med	List of patients on xxx med (e.g., insulin from med list)
List patients with xxx health conditions	List of patients with xxx health conditions (e.g., diabetes from health list)
List patients with xxx med and xxx health condition	List of patients with xxx health condition and xxx med (e.g., diabetes and insulin)
List patients receiving xxx service	List of patients receiving xxx service
List patients not receiving xxx service	List of patients not receiving xxx service
List patients receiving xxx lab	List of patients receiving xxx lab
List patients receiving xxx lab AND (=, >=, <+) xxx value	List of patients receiving xxx lab AND (>, <, >=, <=) xx value (e.g., cholesterol >=200)
List patients with lab xxx and health condition xxx	List of patients with health conditions xxx and lab xxx
List patients WITHOUT lab xxx and health condition xxx	List of patients with health conditions xxx and NOT lab xxx
List patients with lab xxx and service xxx	List of patients with lab xxx and service xxx (e.g., flu vaccination and HbA1c lab)
List patients with lab xxx and WITHOUT service xxx	List of patients with lab xxx and NOT service xxx (e.g., HbA1c completed but no flu vaccination)
List patients with service referral status	List of patients with status of service referrals made within the report time period (displays date of referral and completion date)
Create-A-List	Template for user-defined patient intervention lists

CDEMS Table Descriptions

The table and field descriptions shown over the next few pages are useful for understanding and locating specific data components needed for developing your custom queries.

tblDemo		
Patient demographic information, start & end dates.		
Field Name	Data/Type	Description
clinic_code	Text	6-character max code for clinic (e.g. Pilot)
chart_number	Text	unique chart number for each patient
last_name	Text	Patient last name
first_name	Text	Patient first name
dob	Date/Time	Date of birth - mm/dd/yyyy format
sex	Text	Gender - "M" or "F"; default is "unknown"
ethnicity	Text	Patient's ethnic group
primary_language	Text	Patient's primary language
address1	Text	line 1 of patient's street address
address2	Text	line 2 of patient's street address
city	Text	Patient's city
state	Text	Patients state; default state is WA
zip	Text	Patient's zip code
phone1	Text	10-digit number; no spaces or formatting
phone2	Text	10-digit number; no spaces or formatting
pcp	Text	Provider name
insurance	Text	Patient's primary insurance payer/type
_date	Date/Time	Unused field; reserved for later use
start_date	Date/Time	date patient started in clinic
end_date	Date/Time	date patient became inactive in clinic (mm/dd/yy)
last_update_date	Date/Time	Automatic date recording additions & changes in tblDemo
migrant	Text	migrant status = yes or no
homeless	Text	homeless status = yes or no
other	Text	for storing semi permanent facts like alternate phone contacts and specialists/allergies

tblHealth		
Diagnosed health condition info		
Field Name	Data/Type	Description
clinic_code	Text	Index key linked to tblDemo
chart_number	Text	Index key linked to tblDemo
raw_code	Text	health condition raw code
start_date	Date/Time	diagnosis date (dx)
end_date	Text	date patient no longer has this dx
specialist	Text	reserved for later use
educator	Text	reserved for later use
comment	Text	reserved for later use
type_code	Text	Dx

tblLab		
Completed or referred lab test or other numeric result info		
Field Name	Data/Type	Description
clinic_code	Text	Index key linked to tblDemo
chart_number	Text	Index key linked to tblDemo
raw_code	Text	lab raw code
result	Text	8 character – text or numeric entry
service_date	Date/Time	mm/dd/yy format
status_flag	Text	completed, referred, declined
type_code	Text	Lab

tblMed		
Information about meds prescribed for a patient		
Field Name	Data/Type	Description
clinic_code	Text	Index key linked to tblDemo
chart_number	Text	Index key linked to tblDemo
raw_code	Text	med raw code
start_date	Date/Time	date med started
end_date	Text	date med ended
type_code	Text	Med

tblServices		
Completed, referred or declined services		
Field Name	Data/Type	Description
clinic_code	Text	Index key linked to tblDemo
chart_number	Text	Index key linked to tblDemo
raw_code	Text	code for specific service
status_flag	Text	d=declined, r=referral, c=completed,
service_date	Date/Time	mm/dd/yy format
result	Text	8 character - text or numeric entry
comment	Memo	Unused field
type_code	Text	Service

tblVisits		
Info about patient visits & vital statistics at each visit		
Field Name	Data/Type	Description
clinic_code	Text	Index key linked to tblDemo
chart_number	Text	Index key linked to tblDemo
visit_date	Date/Time	mm/dd/yy format
type_visit	Text	o=office p=phone l=lab
bp_diastolic	Number	diastolic reading
bp_systolic	Number	systolic reading
weight	Number	pounds
height	Number	inches If unknown, leave blank - NEVER enter 0
next_visit_date	Date/Time	date of next scheduled office visit

tlkpCity		
Dropdown list of cities		
Field Name	Data/Type	Description
City	Text	Dropdown list of frequently used cities in patient demographics

tlkpClinic		
Clinic setup info & progress note/graphs style definitions		
Field Name	Data/Type	Description
Clinic	Text	Full clinic name
Clinic_code	Text	6 char code for clinic in CDEMS
Clinic_group	Text	Unused field; reserved for later use
Type_Form	Text	Progress note styles 1,2, or 3
Type_Flowsheet	Text	Graphs page styles 1 (graphs only) or 2 (graphs + recommendations box)
Type_Overflow	Text	Automatic overflow page to display extra items on progress note; style=1
Comments	Memo	Enter clinic codes to aggregate clinics for reporting; included clinic codes must match exactly codes used in the registry, separated by commas (no spaces) for inclusion in an aggregated report. Any other use of comment field results in report program error.

tlkpCrosswalk	Master table of raw codes and working codes for conditions, meds, labs, services. The CDEMS lab interface program matches lab codes identified in tlkpCrosswalk.	
Field Name	Data/Type	Description
raw_code	Text	Physical code used for storing records in CDEMS
type_code	Text	Dx, Rx, Service, Lab
working_code	Text	Display label used to interpret raw codes in CDEMS reports (best if label matches raw code). Working_code is same as related_field in tlkpSetup.
lab_code	Text	lab codes for electronic download of test results; these codes are specific to each laboratory company

tlkpDefaults	Default clinic information	
Field Name	Data/Type	Description
clinic_default	Text	Clinic_code of default clinic that appears on opening window at CDEMS startup
clinic_support_local	Text	IT contact
clinic_support_DCP	Text	enter DPCP contact

tlkpEthnicity	Dropdown list of ethnicities	
Field Name	Data/Type	Description
Ethnicity	Text	Desired ethnic groups to track for patient population

tlkpGender	Dropdown list of gender selections	
Field Name	Data/Type	Description
Sex	Text	M=male F=female U=unknown (default)
Gender	Text	code descriptions

tlkpInsurance	Dropdown list of insurance categories	
Field Name	Data/Type	Description
Insurance_name	Text	
Insurance_type	Text	0=none 1=commercial 2=medicaid 3=medicare 4=unknown 5=other

tlkpPCP	Dropdown list of clinic providers	
Field Name	Data/Type	Description
Clinic_code	Text	clinic name where service is provided; if working from more than one location, provider must be shown in <i>each</i> clinic's PCP list
Provider	Text	PCP name (usually last_name, first_name)
Comments	Text	

tlkpLanguage	Dropdown list of languages	
Field Name	Data/Type	Description
PLanguage	Text	Desired languages to track for patient population

tlkpSetup		
Matrix of health conditions and associated co-conditions, labs, meds, services. Ticker, graph recommendations and pick list customizations are made here. Working/raw codes must exist in tlkpCrosswalk before using in tlkpSetup.		
Field Name		Description
health_status	Text	Identifies chronic condition measures relate to (can be any Dx)
related_field	Text	working code (label) in tlkpCrosswalk
type_field	Text	Classification of measures: Dx, Rx, Lab, Service, List, Graph
order	Number	Controls sequence of measures displayed on the progress note – items display in ascending order with like numbers arranged alphabetically
list_raw_code	Text	enter raw code to display in list boxes for selected this labs/services; leave blank if no list desired.
min_scale	Number	sets graph scale lower limit
max_scale	Number	sets graph scale upper limit
std_freq	Text	Tickler parameter - # of days interval at which lab or service should be repeated
std_poor	Text	Tickler parameter – defines threshold at which the tickler alerts that a lab is beyond the acceptable target range
std_good	Text	Tickler parameter – defines “acceptable” lab or service result approaching target threshold for early tickler alert that attention may be needed
std_alert	Text	Defines service pick list results or lab validation rules.
description	Text	Patient friendly lab/service name. Populates “Test/Treatment Type” field in Recommendations box – Style 2 Graph
std_comment_short	Text	Statement of freq and/or target goal. Populates “Standard For Your Care” field in Recommendations box - Style 2 Graph (40 char max)
std_comment_long	Text	Short explanation of why lab/service is important. Populates “Additional Info” field in Recommendations box - Style 2 Graph (75 char max)

tlkpStatusFlags		
Dropdown list of status flag options		
Field Name	Data/Type	Description
status	Text	Indicator for completed, declined or referred labs and services
status_abbreviation	Text	c=completed, d=declined, r=referred

tlkpVisitType		
Dropdown list of visit types		
Field Name	Data/Type	Description
type_visit	Text	
type_visit_abbreviation	Text	o=office p=phone l=lab

Toll-free line for WA users: 1-800-478-3563
Fee-based support: 916-817-1401