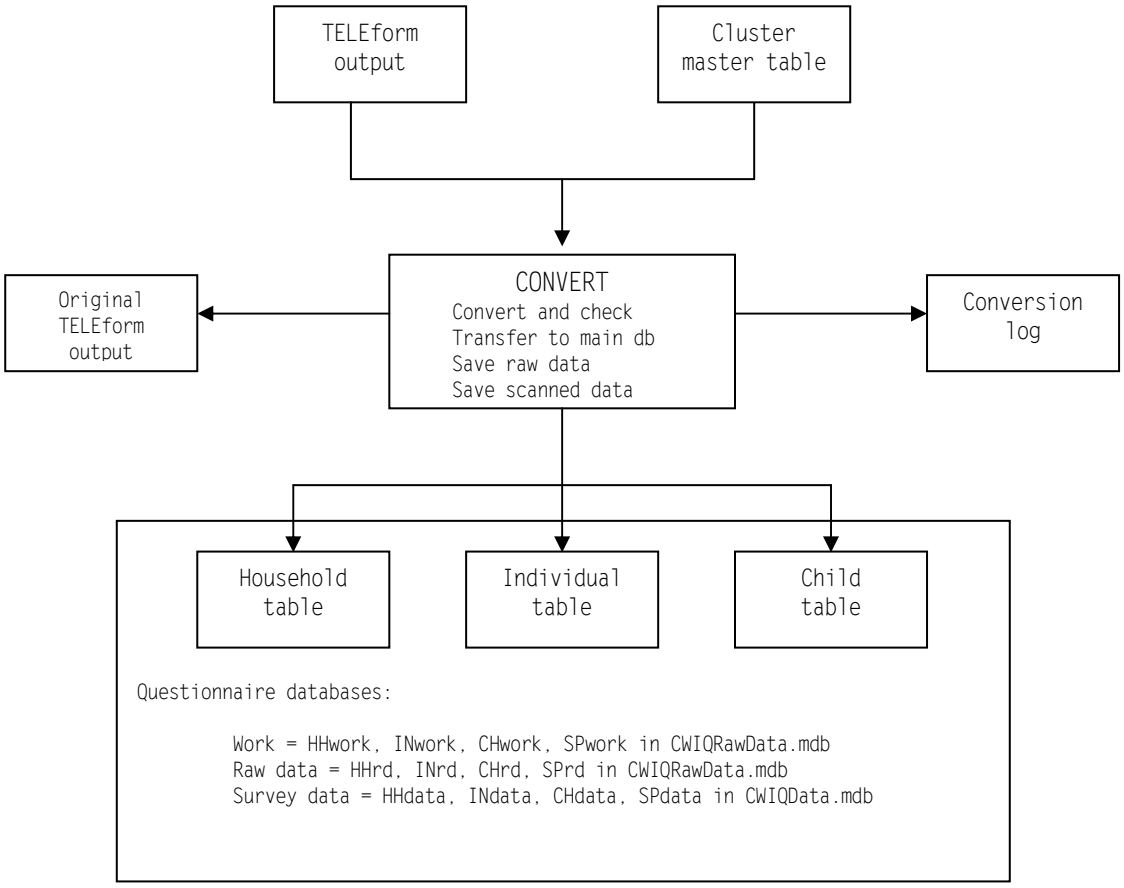
Program: Convert - convert scanned data to CWIQ database format

1. Schematic



2. Input

A. TELEform output.

Data from corrected batches is automatically exported by TELEform to the CWIQtf table in the Access database CWIQtemp.mdb, when the batch is committed. There is a table entry sequenced by TELEform reference number (RefNo), cluster number (A1), household number (A2) and questionnaire number (A7) for each scanned questionnaire. Sections (B-I) of the questionnaire are stored as a separate string fields with individual fields for each household member and child repetition (B1..B0, C1..C0, D1..D0, E1..E0, I1..I4). Data from Section A is stored as individual fields to facilitate corrections to the questionnaire identification fields. The fields are stored in the following sequence:

RefNo
A1, A2, A3, A4, A5, A5ap, A6, A7, A8, A9, A9ap (from Section A)
SectB1..SectB0 SectC1..C0 SectD1..D0 SectE1..E0
SectF SectG SectH
SectI1..I4

The complete table layout appears in Appendix A.

Extra questionnaires are used to enter member data for households with more than 10 members. These questionnaires are identified by A7 (questionnaire number) greater than 1. The member numbers in the extra questionnaire correspond to the questionnaire number, with 2 used for members 11 to 20, 3 for members 21 to 30, etc. This file is cleared when the data for the cluster has been successfully converted.

B. Cluster master table.

The cluster master table is used to validate the cluster number and to verify that the number of households scanned is the same as the number of sample households in the cluster. The table name is ClusterMaster and it is stored in the main CWIQ database (Data.mdb). The cluster master table layout appears in Appendix B.

3. Output

A. CWIQ questionnaire databases.

The CWIQ questionnaire data is stored in three tables: the household table, the individual table, and the child table. For each household surveyed there is one record in the household table, one record for each household member in the individual table, and one record for each child under 5 in the child table. The converted TELEform output is initially stored in work tables in the CWIQ raw data database (CWIQRawData.mdb). The table names are HHwork for the household table, INwork for the individual table, CHwork for the child table.

If no errors are detected during the conversion process or if errors are over-ridden, the data in the work tables is transferred to the main CWIQ database (CWIQData.mdb). The tables in the main database are HHData for the household table, INData for the individual table, CHData for the child table. All subsequent processing is done using this data. The converted data is also kept for archival purposes (unedited raw data) in the CWIQ raw data database (CWIQRawData.mdb). The table names are HHrd, INrd, and CHrd.

B. Conversion log.

The conversion log shows the results for each household processed. If there are no errors, the log shows the questionnaire identifier, the number of members and the number of children under 5. If there are errors, the log shows the questionnaire identifier and an error message. There is a sample conversion log in appendix C.

C. Original TELEform output.

The original output of TELEform is stored in table CWIQorig in the CWIQ raw data database (RawData) when the scanned data has been successfully converted.

4. Processing

A. Conversion.

i. Household table:

Output HHwork	Input CWIQtf	
A1	A1	
A2	A2	
A3	A3	
A4	A4	convert leading blanks to zeroes
A5	A5	
A6	A6	convert leading blanks to zeroes
A6ap	A6ap	
A7	A7	convert leading blanks to zeroes
A8	A8	
A9	A9	convert leading blanks to zeroes
A9ap	A9ap	

Output HHwork	Input CWIQtf.SectF (location, length)	
F1	1, 1	
F2	2, 1	
F3	3, 3	convert leading blanks to zeroes
F4	6, 1	
F5	7, 1	
F6	8, 3	convert leading blanks to zeroes
F7	11, 1	
F8a	12, 1	convert Y to 1
F8b	13, 1	convert Y to 1
F8c	14, 1	convert Y to 1
F8d	15, 1	convert Y to 1
F8e	16, 1	convert Y to 1
F8f	17, 1	convert Y to 1
F8g	18, 1	convert Y to 1
F9	19, 1	
F10a1	20, 4	
F10b1	24, 1	
F10a2	25, 4	
F10b2	29, 1	
F10a3	30, 4	
F10b3	34, 1	
F10a4	35, 4	
F10b4	39, 1	
F10a5	40, 4	
F10b5	44, 1	
F10a6	45, 4	
F10b6	49, 1	

i. Household table (continued):

Output HHwork	Input CWIQtf.SectF (location, length)	
F10a7	50, 4	
F10b7	54, 1	
F11a	55, 1	convert Y/N to 1/2
F11b	56, 1	convert Y/N to 1/2
F11c	57, 1	convert Y/N to 1/2
F11d	58, 1	convert Y/N to 1/2
F11e	59, 1	convert Y/N to 1/2
F11f	60, 1	convert Y/N to 1/2
F11g	61, 1	convert Y/N to 1/2
F11h	62, 1	convert Y/N to 1/2
F11i	63, 1	convert Y/N to 1/2
F11j	64, 1	convert Y/N to 1/2
F11k	65, 1	convert Y/N to 1/2
F11l	66, 1	convert Y/N to 1/2
F11m	67, 1	convert Y/N to 1/2
F11n	68, 1	convert Y/N to 1/2
F11o	69, 1	convert Y/N to 1/2
F11p	70, 1	convert Y/N to 1/2
F11q	71, 1	convert Y/N to 1/2
F11r	72, 1	convert Y/N to 1/2
F12a	73, 1	
F12b	74, 1	
F12c	75, 1	
F12d	76, 1	
F12e	77, 1	
F13	78, 1	
F14	79, 1	
F15	80, 1	
F16	81, 2	convert leading blanks to zeroes (total length of section = 82)

i. Household table (continued):

Output HHwork	Input CWIQtf.SectG (location, length)	
G1	1, 1	
G2	2, 1	
G3	3, 1	
G4	4, 1	
G5	5, 2	convert leading blanks to zeroes
G6	7, 1	
G7	8, 1	
G8	9, 1	
G9	10, 1	
G10	11, 1	
G11a	12, 1	convert Y to 1
G11b	13, 1	convert Y to 1
G11c	14, 1	convert Y to 1
G11d	15, 1	convert Y to 1
G11e	16, 1	convert Y to 1
G11f	17, 1	convert Y to 1
G11g	18, 1	convert Y to 1
G11h	19, 1	convert Y to 1
G11i	20, 1	convert Y to 1
G11j	21, 1	convert Y to 1
G11k	22, 1	convert Y to 1
G11l	23, 1	convert Y to 1
G12a1	24, 4	convert leading blanks to zeroes
G12b1	28, 4	convert leading blanks to zeroes
G12c1	32, 4	convert leading blanks to zeroes
G12d1	36, 4	convert leading blanks to zeroes
G12e1	40, 4	convert leading blanks to zeroes
G12f1	44, 4	convert leading blanks to zeroes
G12g1	48, 4	convert leading blanks to zeroes
G12h1	52, 4	convert leading blanks to zeroes (total length of section = 55)

i. Household table (continued):

Output	Input		
HHwork	CWIQtf.SectH (location, length)		
H1	1, 1	convert Y, N to 1, 2	
H2	2, 1		
H3	3, 4		
H4a	7, 1		
H4b	8, 1		
H4c	9, 1		
H5	10, 1	convert Y, N to 1, 2	
H6a	11, 1	convert Y to 1	
H6b	12, 1	convert Y to 1	
H6c	13, 1	convert Y to 1	
H6d	14, 1	convert Y to 1	
H6e	15, 1	convert Y to 1	
H6f	16, 1	convert Y to 1	
H7a1	17, 1	convert Y, N to 1, 2	
H7a2	18, 1		
H7b1	19, 1	convert Y, N to 1, 2	
H7b2	20, 1		
H7c1	21, 1	convert Y, N to 1, 2	
H7c2	22, 1		
H7d1	23, 1	convert Y, N to 1, 2	
H7d2	24, 1		
H7e1	25, 1	convert Y, N to 1, 2	
H7e2	26, 1		
H7f1	27, 1	convert Y, N to 1, 2	
H7f2	28, 1		
H8a	29, 1	convert Y to 1	
H8b	30, 1	convert Y to 1	
H8c	31, 1	convert Y to 1	
H8d	32, 1	convert Y to 1	
H8e	33, 1	convert Y to 1	
H8f	34, 1	convert Y to 1	
H8g	35, 1	convert Y to 1	
H8h	36, 1	convert Y to 1	(total length of section = 36)

i. Subjective poverty table:

Output	Input	
SPwork	CWIQtf.SectP (location, length)	
P1	1, 1	
P201	2, 1	convert Y, N to 1, 2
P202	3, 1	convert Y, N to 1, 2
P203	4, 1	convert Y, N to 1, 2
P204	5, 1	convert Y, N to 1, 2
P205	6, 1	convert Y, N to 1, 2
P206	7, 1	convert Y, N to 1, 2
P207	8, 1	convert Y, N to 1, 2
P208	9, 1	convert Y, N to 1, 2
P209	10, 1	convert Y, N to 1, 2
P210	11, 1	convert Y, N to 1, 2
P211	12, 1	convert Y, N to 1, 2
P212	13, 1	convert Y, N to 1, 2
P213	14, 1	convert Y, N to 1, 2
P214	15, 1	convert Y, N to 1, 2
P215	16, 1	convert Y, N to 1, 2
P216	17, 1	convert Y, N to 1, 2
P3	18, 1	
P4	19, 5	
P5	24, 1	
P6	25, 1	
P7	26, 1	
P8	27, 1	
P901	28, 1	convert Y, N to 1, 2
P902	29, 1	convert Y, N to 1, 2
P903	30, 1	convert Y, N to 1, 2
P904	31, 1	convert Y, N to 1, 2
P905	32, 1	convert Y, N to 1, 2
P906	33, 1	convert Y, N to 1, 2
P1001	34, 1	
P1002	35, 1	
P1003	36, 1	
P1004	37, 1	
P1005	38, 1	
P1006	39, 1	
P1007	40, 1	
P1008	41, 1	
P1009	42, 1	
P1010	43, 1	
P1011	44, 1	
P1012	45, 1	
P1013	46, 1	
P1014	47, 1	
P1101	48, 1	convert Y, N to 1, 2
P1102	49, 1	convert Y, N to 1, 2
P1103	50, 1	convert Y, N to 1, 2
P1104	51, 1	convert Y, N to 1, 2
P1105	52, 1	convert Y, N to 1, 2
P1106	53, 1	convert Y, N to 1, 2

i. Subjective poverty table (continued):

Output	Input	
SPwork	CWIQtf.SectP (location, length)	
P1201	54, 1	convert Y, N to 1, 2
P1202	55, 1	convert Y, N to 1, 2
P1203	56, 1	convert Y, N to 1, 2
P1204	57, 1	convert Y, N to 1, 2
P1205	58, 1	convert Y, N to 1, 2
P1206	59, 1	convert Y, N to 1, 2
P13	60, 1	convert Y, N to 1, 2
P14	61, 2	(total length of section = 62)

ii. Individual table:

Output	Input		
INwork	CWIQtf.SectBn (location, length), n=1..0		
MemberNo	n		
B1	1, 1	convert M/F to 1/2	
B2	2, 1		
B3	3, 1		
B4	4, 2	convert leading blanks to zeroes	
B5	6, 1		
B6	7, 1	convert Y/N/X to 1/2/3	
B7	8, 1	convert Y/N to 1/2	
B8	9, 1	convert Y/N/X to 1/2/3	
B9	10, 1	convert Y/N to 1/2	(total length of section = 10)

Output	Input		
INwork	CWIQtf.SectCn (location, length), n=1..0		
C1	1, 1	convert Y/N to 1/2	
C2	2, 1	convert Y/N to 1/2	
C3	3, 2	convert leading blanks to zeroes	
C4	5, 1	convert Y/N to 1/2	
C5	6, 1	convert Y/N to 1/2	
C6	7, 2	convert leading blanks to zeroes	
C7	9, 1		
C8a	10, 1	convert Y to 1	
C8b	11, 1	convert Y to 1	
C8c	12, 1	convert Y to 1	
C8d	13, 1	convert Y to 1	
C8e	14, 1	convert Y to 1	
C8f	15, 1	convert Y to 1	
C8g	16, 1	convert Y to 1	
C8h	17, 1	convert Y to 1	
C8i	18, 1	convert Y to 1	
C8j	19, 1	convert Y to 1	
C9a	20, 1	convert Y to 1	
C9b	21, 1	convert Y to 1	
C9c	22, 1	convert Y to 1	
C9d	23, 1	convert Y to 1	
C9e	24, 1	convert Y to 1	
C9f	25, 1	convert Y to 1	
C9g	26, 1	convert Y to 1	
C9h	27, 1	convert Y to 1	
C9i	28, 1	convert Y to 1	
C9j	29, 1	convert Y to 1	
C9k	30, 1	convert Y to 1	
C9l	31, 1	convert Y to 1	
C9m	32, 1	convert Y to 1	
C10a	33, 1	convert Y to 1	
C10b	34, 1	convert Y to 1	
C10c	35, 1	convert Y to 1	
C10d	36, 1	convert Y to 1	
C10e	37, 1	convert Y to 1	
C10f	38, 1	convert Y to 1	
C10g	39, 1	convert Y to 1	
C10h	40, 1	convert Y to 1	(total length of section = 40)

ii. Individual table (continued)

Output	Input	
INwork	CWIQtf.SectDn (location, length), n=1..0	
D1	1, 1	convert Y/N to 1/2
D2	2, 1	convert Y/N to 1/2
D3	3, 1	convert Y/N to 1/2
D4a	4, 1	convert Y to 1
D4b	5, 1	convert Y to 1
D4c	6, 1	convert Y to 1
D4d	7, 1	convert Y to 1
D4e	8, 1	convert Y to 1
D4f	9, 1	convert Y to 1
D4g	10, 1	convert Y to 1
D4h	11, 1	convert Y to 1
D4i	12, 1	convert Y to 1
D4j	13, 1	convert Y to 1
D5	14, 1	convert Y/N to 1/2
D6	15, 1	
D7	16, 1	
D8a	17, 1	convert Y to 1
D8b	18, 1	convert Y to 1
D8c	19, 1	convert Y to 1
D8d	20, 1	convert Y to 1
D8e	21, 1	convert Y to 1
D8f	22, 1	convert Y to 1
D8g	23, 1	convert Y to 1
D8h	24, 1	convert Y to 1
D8i	25, 1	convert Y to 1
D9a	26, 1	convert Y to 1
D9b	27, 1	convert Y to 1
D9c	28, 1	convert Y to 1
D9d	29, 1	convert Y to 1
D9e	30, 1	convert Y to 1 (total length of section = 30)

Output	Input	
INwork	CWIQtf.SectE1n (location, length), n=1..0	
E1	1, 1	convert Y/N to 1/2
E2	2, 1	convert Y/N to 1/2
E3	3, 1	convert Y/N to 1/2
E4	4, 1	
E5	5, 1	
E6	6, 1	
E7	7, 1	
E8	8, 1	
E9	9, 2	
E10	11, 2	
E11	13, 2	(total length of section = 14)

iii. Child table

Output CHwork	Input CWIQtf.SectIn (location, length), n=1..4		
I1a	1, 2		
I1b	3, 2	convert leading blanks to zeroes	
I2	5, 6		
I3	11, 1		
I4	12, 1		
I5a	13, 1	convert Y/N to 1/2	
I5b	14, 1	convert Y/N to 1/2	
I6a	15, 1		
I6b	16, 1		
I6c	17, 1		
I6d	18, 1		
I6e	19, 1		
I6f	20, 1		
I6g	21, 1		
I6h	22, 1		
I6i	23, 1		
I6j	24, 1		
I7	25, 1	convert Y/N/X to 1/2/3	(total length of section = 25)

C. Check conversion output.

Check for the following error conditions. If detected print the questionnaire identifier (ccc-hhh-Qn, where ccc is the cluster number, hhh is the household number and n is the questionnaire number) with a message showing the error detected.

Duplicate questionnaire

Duplicate extra questionnaire

Extra questionnaire with no main household questionnaire

Child duplicate

Child with no member number

Cluster number (A1) not the same as the cluster specified by the operator

Check that length of each section is equal to the length specified above.

If any of these errors are detected, no further processing takes place after the conversion log is printed.

Number of households processed not equal to the number of households in the sample for the cluster. This error can be overridden by the operator.

D. Other processing.

Print the questionnaire identifier for questionnaires with no errors; show the number of members and the number of children under 5 in the household

Update the number of members field (HHSize) in the household table with the number of members processed for subsequent verification that no members get lost or duplicated.
Convert blank input fields to all "."
Convert alphabetic codes to numeric codes:

M/F to 1/2
Y/N to 1/2
Y to 1
Y/N/X to 1/2/3

Convert leading blanks to leading zeroes for multiple digit numeric hand print fields when the field is not completely blank (all ".").

Initialize derived variables as follows:

Household data: Region, UrbRur, SEG, Quintile, HGender, HMStat, HEduc to all "."; HAge to 99; HHWeight to 1.

Child data: Sex, Wasted, Stunted and Underweight to "."; AgeMonths to 0.

E. Transfer converted data to the questionnaire database.

If the number of households successfully converted is the same as the number of households in the sample and there are no other errors, the converted questionnaire data (in work tables HHwork, INwork, and CHwork is transferred to the main CWIQ database (in tables HHData, INData, and CHData) and to the CWIQ raw data database (in tables HHrd, INrd, and CHrd). If the number of households is not the same, an error message is displayed and the operator is given

the chance to override the error and transfer the data anyway. When data is transferred to the questionnaire database, the transfer date, the number of households transferred and whether the operator overrode the error are recorded in the cluster master file.

Save original TELEform data and clear CWIQtf table.

After the successful conversion of the scanned data, the TELEform output is stored in an archive table (CWIQorig in CWIQRawData.mdb) and the work table (CWIQtf in CWIQTemp.mdb) is cleared.

Appendix A: sample conversion log

Line
CWIQ conversion log for cluster
Household: 110-251-Q* extra without main quest.
Household: 110-251-Q* reference number = 1102511 is incorrect
Household: 110-252-Q2 extra without main quest.
Household: 110-253-Q1 added. Number of members = 3 children = 1
Household: 110-253-Q1 duplicate household
Household: 110-254-Q1 added. Number of members = 3 children = 0
Household: 110-254-Q1 duplicate household
Household: 110-254-Q1 duplicate household
Household: 110-257-Q1 added. Number of members = 5 children = 1
Household: 110-258-Q1 added. Number of members = 4 children = 0
Household: 110-259-Q1 added. Number of members = 3 children = 0
Household: 110-260-Q1 Member 1 Section C: length error (22/24) YYO4NN.............Y..
Household: 110-260-Q1 Member 1 Section D: length error (27/28) ..NN........N..........Y...
Household: 110-260-Q1 Member 1 Section E: length error (9/11) NNN2.....
Household: 110-260-Q1 added. Number of members = 1 children = 0
Household: 110-262-Q1 reference number = 1102611 is incorrect
Household: 110-262-Q1 added. Number of members = 2 children = 0
Household: 110-262-Q1 duplicate household
Household: 110-263-Q1 added. Number of members = 6 children = 1
Household: 110-264-Q1 added. Number of members = 7 children = 2
Household: 110-265-Q1 added. Number of members = 2 children = 0
Household: 110-266-Q1 added. Number of members = 9 children = 0
Household: 110-267-Q1 added. Number of members = 1 children = 0
Household: 110-268-Q1 added. Number of members = 2 children = 0
Household: 110-269-Q1 added. Number of members = 7 children = 1
Household: 110-270-Q1 added. Number of members = 4 children = 1
Household: 110-271-Q1 added. Number of members = 5 children = 1
Household: 110-272-Q1 added. Number of members = 7 children = 1
Household: 110-273-Q1 added. Number of members = 7 children = 0
Household: 110-274-Q1 added. Number of members = 3 children = 1
Household: 110-275-Q1 added. Number of members = 6 children = 1
Household: 111-359-Q1 added. Number of members = 10 children = 3
Household: 111-359-Q2 child 7 duplicate. Data = 0703000998121010736NY
Household: 111-359-Q2 child 9 duplicate. Data = 0902300697131160805YY
Household: 111-359-Q2 child 13 duplicate. Data = 1314060598250840750NY
Household: 111-359-Q2 extra. Number of members = 20 children = 3
Errors detected in TELEform output
The questionnaires for this cluster have not been transferred to the questionnaire database.
Conversion summary
Questionnaires 22: Added 16: Errors 6
Households 25: Added 21: Errors 4
Individuals : Added 94: Errors 3
Children 17: Added 14: Errors 3