Excel Template
• Provide a format for the data
• Design to be WYSIWYG
• Can control layout, formatting of data, text

SAS X Command
• X commands are system commands (exe, unix)
• Used to copy the templates and create an empty file to be populated via SAS export

/* Copy the file to create template */
x copy
'spath_template, &template_name.xlsm'
'spath_excel_out, &file_name.xlsm';

Excel Template
• SAS can export data sets to Excel
• SAS can export data sets to specific ranges in Excel
• Excel file can use these to populate tables/graphs/labels

DDE
• Dynamic Data Exchange technology
• Can open and modify Excel files
• Remote control
• Used to open each file and view it within a report in MSG

Using SAS to Coordinate Complex Reports

Fareena Khursheed
fkhursheed@gmail.com
@stat_geek
Using SAS to Coordinate Complex Reports

Data

Data

Data

Data

How to automate this? When you need to make 100 different versions?

SAS used to control the majority of the process
- Excel
- VB
- JavaScript

Fareeza Khurshed
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Primary health care community profiles

To assist with primary health care planning, Alberta Health has developed a series of reports to provide a broad range of demographic, socio-economic, and population health statistics considered relevant to primary health care for communities across the province. Alberta Health Services divides the province into 5 large health service Zones, and these Zones are subdivided into smaller geographic areas called Local Geographic Areas (LGAs). The Alberta Health Community Profile reports provide information at the Zone and LGA level for each of the 132 LGAs in Alberta.

The Community Profiles below are intended to highlight areas of need and provide relevant information to support the consistent and sustainable planning of primary health care services. Each Profile offers an overview of the current health status of the residents in the LGA, indicators of the area’s current and future health needs, and evidence as to which quality services are needed on a timely and efficient basis to address the area’s needs.

Find your community

The Community Profiles are based on LGAs and some Community Profiles contain information for multiple communities. If your community is not listed, select the community nearest to you. Each community is included in the Profile map of each report, which illustrates the boundaries of that LGA.

All community profile reports in PDF

- Airdrie – Metro Moderate – Moderate Metro Influence
- Athabasca – Rural – Includes: Athabasca, Breynat, Calling Lake, Colinton, Donaville, Grassland, Island Lake, Island Lake South, Meenook, Perryvale, Rochester, Smith, South Baptist, Wandering River, West Baptist, Whispering Hills, White Gull
- Banff – Rural
- Barhead – Rural
- Beaumont – Metro Moderate – Moderate Metro Influence
- Beaverlodge – Rural
- Black Diamond – Rural
- Bonnyville – Rural – Includes: Ardmore, Bonnyville, Bonnyville No. 87, Fort Kent, Glendon, Goodridge, Gurneyville, Hoselaw, Iron River, Keewatin, La Corey, MD of Bonnyville, Therien
- Boyle – Rural – Includes: Atmore, Boyle, Caslan, Elliscott
The following table presents the rates for childhood immunization coverage by the age of two for the local geographic area and Alberta. The data is provided for the most recent calendar year available.

**TABLE 5.2 Childhood Immunization Coverage Rates, 2010**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Edmonton - Bonnie Doon</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Age Two</td>
<td>2010</td>
<td>70.2%</td>
</tr>
<tr>
<td>MMR (Measles, Mumps, and Rubella)</td>
<td>2010</td>
<td>85.5%</td>
</tr>
</tbody>
</table>

By the age of two, 70.2% of children in Edmonton - Bonnie Doon (in 2010) had been vaccinated against DTaP-IPV-Hib (compared to 73.1% for AB), while 85.5% had received MMR vaccines (compared to 85.7% for AB).

**Sources:**
- Alberta Health Services, Immunization Contact List (2010).
- Alberta Health Services, Immunization Program Information.
- Alberta Health Services, Immunization Program Evaluation.
- Alberta Health Services, Immunization Program Evaluation.

**Notes:**
1. See Appendix A for definition.

The following figure profiles the age group distribution of population for both the local geographic area and Alberta, for the most recent fiscal year available.

**FIGURE 2.1 Percentage Distribution of Local Geographic Area (LGA) versus Alberta Population By Age Groups as at March 31, 2012**

- **LGA**
  - Infants: 13.6% (10.0%)
  - Pediatric: 31.2% (25.8%)
  - 18-34: 39.7% (40.6%)
  - 35-64: 9.2% (8.1%)
  - 65-79: 5.3% (3.0%)
  - 80 & Older: 0.0%

- **Alberta**
  - Infants: 13.6% (10.0%)
  - Pediatric: 31.2% (25.8%)
  - 18-34: 39.7% (40.6%)
  - 35-64: 9.2% (8.1%)
  - 65-79: 5.3% (3.0%)
  - 80 & Older: 0.0%
How to automate this? When you need to make 132 different versions?
• SAS used to control the majority of the process
  • Excel
  • VBS
  • VB
  • JavaScript
Excel Template

- Used to create graphs/charts based on data inside the template
- Design is WYSIWYG
- Can control layout, formatting of data, text
**SAS X Command**

- X Commands are system commands (dos, unix)
- Used to copy the template and create an empty file to be populated via SAS export
/*Copy the file to create template*/
x copy
"&path_template.\&template_name..xlsm"
"&path_excel_out.\&file_name..xlsm";
Excel Template

- SAS can export data sets to Excel
- SAS can export data sets to specific ranges in Excel
- Excel file can use these to populate tables/graphs/text
<table>
<thead>
<tr>
<th>Row ID</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>
libname lga_rep pcfiles path="&path_excel_out.\&file_name..xlsm";

*Demographics by Zone Tab;
proc sql;
  drop table lga_rep.my_table;
quit;

data lga_rep.my_table (DBLABEL=yes);
  set my_table;
run;

libname lga_rep;
Contents of 'Test'

Sheet1
Sheet2
Sheet3

my_table
Next Step -> Save to PDF

- Office 2010 files can be automatically saved to PDF
- Office allows you to record macros -> perform action and it generates VB code to automate the task.
- Using the VB code as a starting point, created VB to export Sheets to PDF documents
Sub savePDF()
    Dim region As String, newFile As String
    Sheets("Src_Area_Info").Select
    region = Range("B6").Value
    path_out = Range("B9").Value
    ' Select sheets for part 1
    Sheets(Array("TitlePage", "Introduction")).Select
    Sheets("TitlePage").Activate
    newFile = path_out & region & ".pdf"
    ActiveSheet.ExportAsFixedFormat Type:=xlTypePDF, Filename:=newFile,
End Sub
**DDE**

- Dynamic Data Exchange - outdated technology
- Can open and modify Excel files
- Very manual
- Used to open each template and run VB script to export to PDF
*Run VB Script to split File;
options noxwait nosync;

x "C:\Program Files\Microsoft Office\Office12\EXCEL.EXE";

data _null_; 
z=sleep(1); /* wait 1 seconds for Excel to start */ run;

filename cmds dde 'excel|system';

data _null_; /* talk to DDE, no output data */ file cmds; 
put "[open("&path_excel_out.\&file_name..xlsm")]"; 
x=sleep(1); /* wait 1 seconds for it to open */ run;

data _null_; file cmds; 
put [Run("SavePDF")]; 
put [Run("SplitPDF")]; 
put [close(0)]; 
put [quit()]; run;
Staple Multiple PDF Sections

- Need to append together PDF Docs
- There's a "SAS Paper" for that

SESUG 2011

Paper BB-15

Combining External PDF Files by Integrating SAS® and Adobe® Acrobat
Brandon Welch, Rho®, Inc., Chapel Hill, NC
Ryan Burns, Rho, Inc., Chapel Hill, NC

SAS Creates the VBS Script
Does require Adobe Professional
SAS executes script via X command
Narratives

- Text narratives are done via a fill in the blank concept in the Excel template
- A LOT of work but effective
- For example if you want to add 's to a word, need to consider if word already ends in s.
Benefits

• Diversify work
• Easy to make design changes
• Less technical skill sets for portions of the work (i.e., most analysts know how to use Excel)
Drawbacks

- Tables have to be the same size every time
- Coordinating work in a lot of places
- A lot of different software was used
- Has to be run on Windows (DDE)
Thanks!

Alberta Health
Thank You!