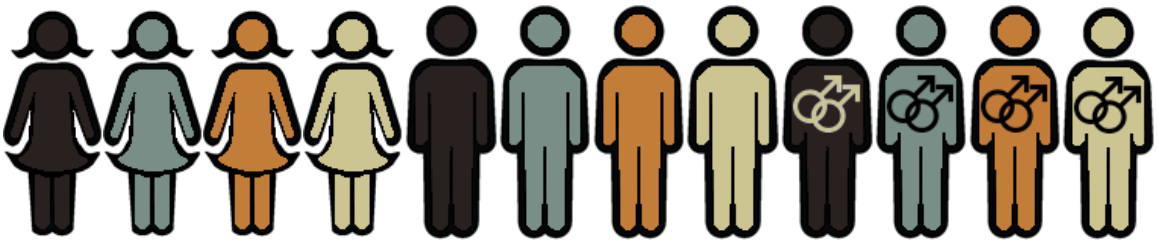
How to make icon arrays in Excel 2013

Have you been seeing lots of icon arrays recently? I have. According to all the data viz/data dissemination folks they are a great way to show non-data people what's going on in a population. They are a replacement for pie charts as well as other things. Something about seeing the individual icons helps people understand.

I've been trying to figure out a way to make icon arrays for a while now, but I've just been doing them by hand—ug! There is software out there, but it's either in Java--which I don't know how to run--or there are websites that will do it for a fee, or there is a site now that will do it for free, but it's *so* limited. So, when I stumbled across a magical button in Excel 2013 yesterday, I started singing (literally—people in the office were staring). **Under format data series, you can do a picture fill and then select *stack and scale with*: *units/picture* = X.**

Here is a step by step guide:

Step 1. Make and save your icons--no longer restricted by ugly stock pictures, you can make anything you want!
--If you are aesthetically impaired, like me, check this out: http://stephanieevergreen.com/choosing-a-color-picking-tool/

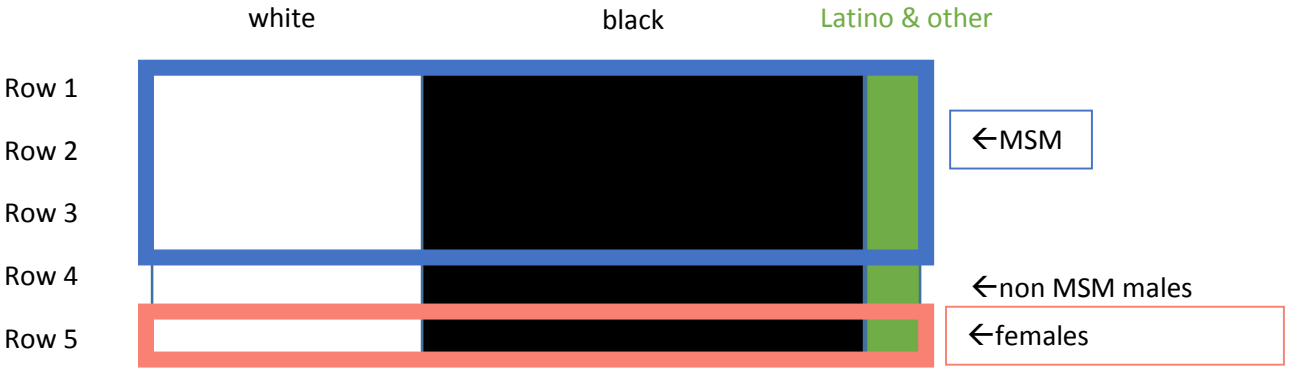


Step 2. Calculate percentages for each individual group you want in your array.

	A	B	C	D	E
1	Persons living with HIV in Michigan, 2015				
2	**Sex**	**Race**	**Risk**	**Frequency**	**% of Total**
3	Male	White	MSM	3649	23.3%
4	Male	White	not MSM	828	5.3%
5	Male	Black	MSM	4206	26.9%
6	Male	Black	not MSM	2377	15.2%
7	Male	Latino	MSM	347	2.2%
8	Male	Latino	not MSM	198	1.3%
9	Male	Other	MSM	437	2.8%
10	Male	Other	not MSM	181	1.2%
11	Female	White	N/A	640	4.1%
12	Female	Black	N/A	2459	15.7%
13	Female	Latina	N/A	145	0.9%
14	Female	Other	N/A	189	1.2%
15	Total	Total	Total	15656	100.0%

Step 3. Plan out your array. This part you do have to do by hand.

I want a 5x20 array…so I'll just need a general idea of where I want my groups:



Step 4. Create the table you'll use to make the array.

Put your categories in the order you would come across them if you were going row by row down the array. So row 1 is white MSM, black MSM, other MSM and Latino MSM.

row	white msm	black msm	other msm	Latino msm
1				
2				
3				
4				
5				

Row 2 and 3 are the same, so no need to add anything to the table yet.

Row 4 has white non- MSM, black non- MSM, other non- MSM and Latino non-MSM so we add them *to the right the categories we already have*:

row	white msm	black msm	other msm	Latino msm	white male	black male	other male	Latino male
1								
2								
3								
4								
5								

Row 5 has white female, black female, other female and Latina female, so we add:

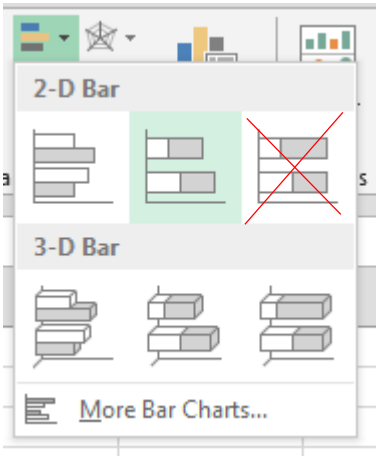
row	white msm	black msm	other msm	Latino msm	white male	black male	other male	Latino male	white female	black female	other female	Latina female
1												
2												
3												
4												
5												

Now we add the values. We need a total of 23 white MSM (since they make up 23% of PLWH) in 3 rows. So, we'll do 8, 8 and 7 in rows 1, 2 and 3 respectively (8+8+7=23). We need 27 black MSM in 3 rows, so we'll do 9, 10, 8 in rows 1, 2 and 3 (9+10+8=27). Continue in the pattern until you have filled in the table. You can make a total column and row to check that your numbers add up. This is sort of a trial and error process. Just put some general numbers in first, make the graph and then you can adjust the frequencies once you see it.

row	white msm	black msm	other msm	Latino msm	white male	black male	other male	Latino male	white female	black female	other female	Latina female	total check
1	8	9	2	1									20
2	8	10	1	1									20
3	7	8				3	1	1					20
4					6	12					1	1	20
5									4	16			20
Check	23	27	3	2	6	15	1	1	4	16	1	1	100

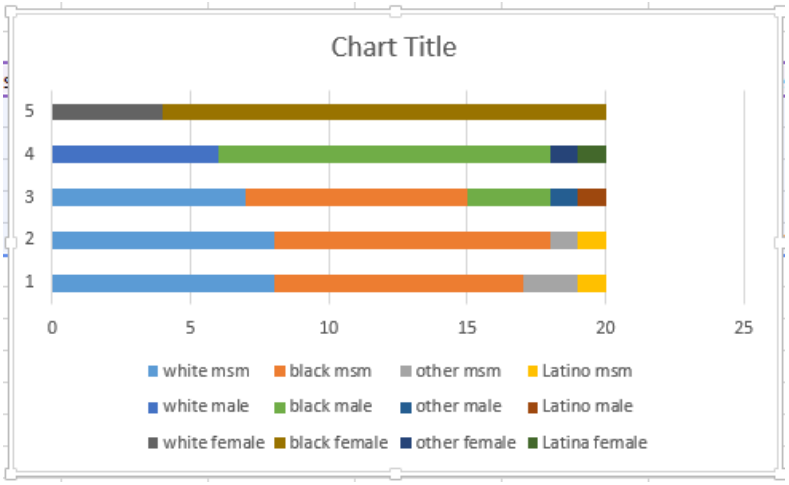
Step 5. Create the horizontal bar chart.

Highlight your data—don't highlight the "row" column or your totals that were used as checks. Go to *Insert* and pick the stacked 2-D bar. Don't pick the far right 2-D bar—this will turn each of your rows into percentages and mess everything up!



You'll probably need to hit the Switch Row/Column button under *Design*:

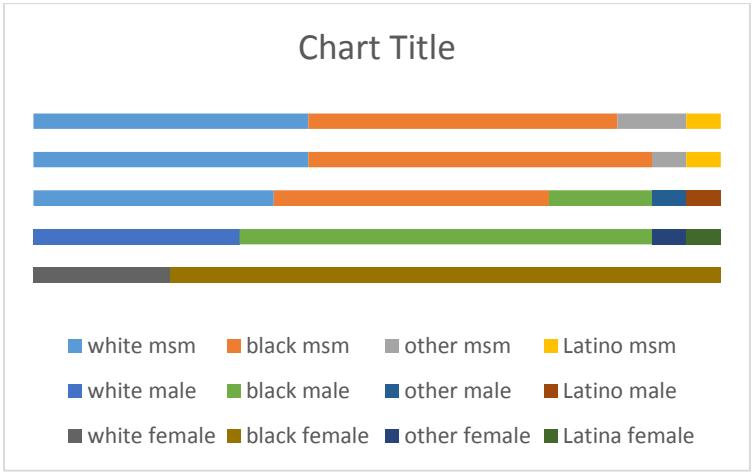
Excel will spit out something that looks like this:



It's ugly, but that's OK. Right now, you should just make sure you have the correct number of rows and columns. My rows (on the Y) are 1-5—they are reversed, but I'll fix that later, and my columns (on the X) are 0-20. Yay!

First I fix the axis b/c they bug me.

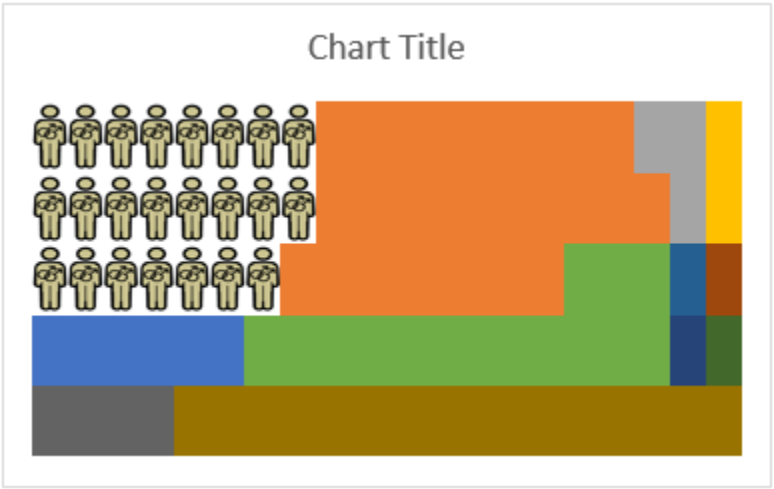
On the Y, under *format axis* I checked the *Categories in reverse order* box.
On the X, under *format axis* I made the *maximum* 20.
Then I got rid of all the gridlines and axis labels, so now I have this:



Perfect! All the race/sex/risk categories are in the order I want…now the magic happens ☺

Step 6. Add your icons.

Right click on a series and select *format data series* (I'll do white MSM first)
Under *series options* set the *gap width* to 0%. Your graph should be a solid blob of color.
Under *fill*, choose *picture or texture fill.*
Under *Insert picture from,* select *file* and pick your icon.
Under that, click *Stack and Scale with* and set the units/Picture ration to 1.
And you get…..



OMG OMG OMG!!!!!!!!

Repeat for each of your series…