



FAMILY HISTORY: A KEY TO PERSONALIZED MEDICINE?

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A Cautionary Tale from Our National Pastime



What Should a Health Professional Do with This Patient?

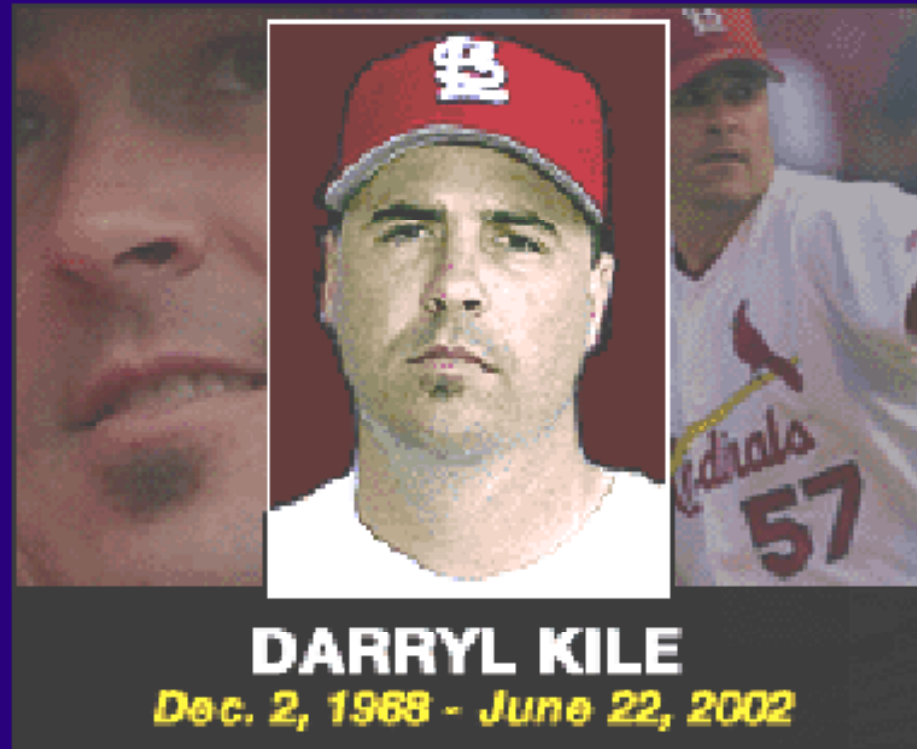
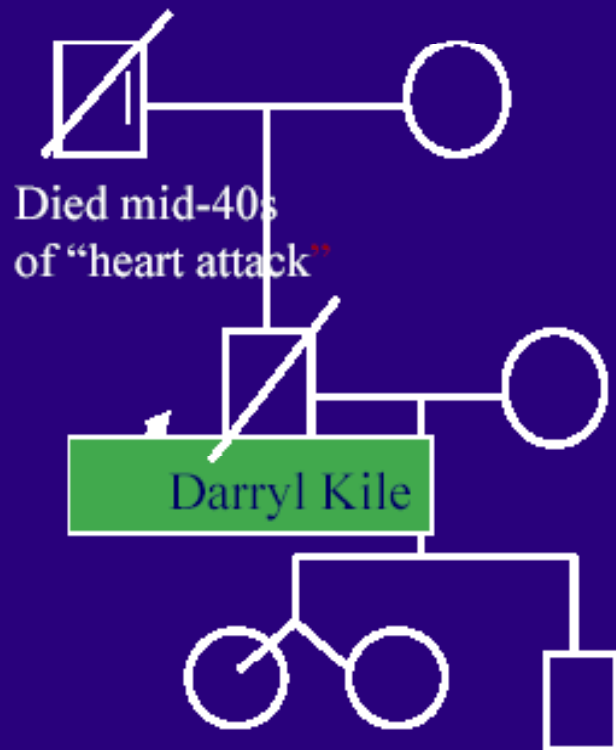
- 33 year-old athletic male with one blood pressure reading of 140/92
 - A. Monitor blood pressure
 - B. Initiate work-up
 - C. Initiate anti-hypertension meds
 - D. Refer to cardiologist
 - E. Other



What Should a Health Professional Do with This Patient?

- 33 year-old athletic male with one blood pressure reading of 140/92
 - A. Monitor blood pressure
 - B. Initiate a work-up
 - C. Start anti-hypertension meds
 - D. Refer to cardiologist
 - E. Other – **Obtain a family history!!**

How would you treat this patient?



From Michael Rackover, P.A.

Does family history information change medical management?



“The cause was determined to be a 90 % blockage in two of his arteries, a condition that some medical experts say might have been picked up in spring training if doctors, upon screening Kile's family history for warning signs, had given him more tests”



Family History

- Has long been with us...

Matthew 1:2-16

Abraham begat Isaac; and Isaac begat Jacob; and Jacob begat Judas and his brethren; and Judas begat Phares and Zara of Thamar; and Phares begat Esrom; and Esrom begat Aram; and Aram begat Aminadab; and Aminadab begat Naasson; and Naasson begat Salmon; and Salmon begat Booz of Rachab; and Booz begat Obed of Ruth; and Obed begat Jesse; and Jesse begat David the king; and David the king begat Solomon of her that had been the wife of Urias; and Solomon begat Roboam; and Roboam begat Abia; and Abia begat Asa; and Asa begat Josaphat; and Josaphat begat Joram; and Joram begat Ozias; and Ozias begat Joatham; and Joatham begat Achaz; and Achaz begat Ezekias; and Ezekias begat Manasses; and Manasses begat Amon; and Amon begat Josias; and Josias begat Jechonias and his brethren, about the time they were carried away to Babylon. And after they were brought to Babylon, Jechonias begat Salathiel; and Salathiel begat Zorobabel; and Zorobabel begat Abiud; and Abiud begat Eliakim; and Eliakim begat Azor; and Azor begat Sadoc; and Sadoc begat Achim; and Achim begat Eliud; and Eliud begat Eleazar; and Eleazar begat Matthan; and Matthan begat Jacob; and Jacob begat Joseph the husband of Mary, of whom was born Jesus, who is called Christ.

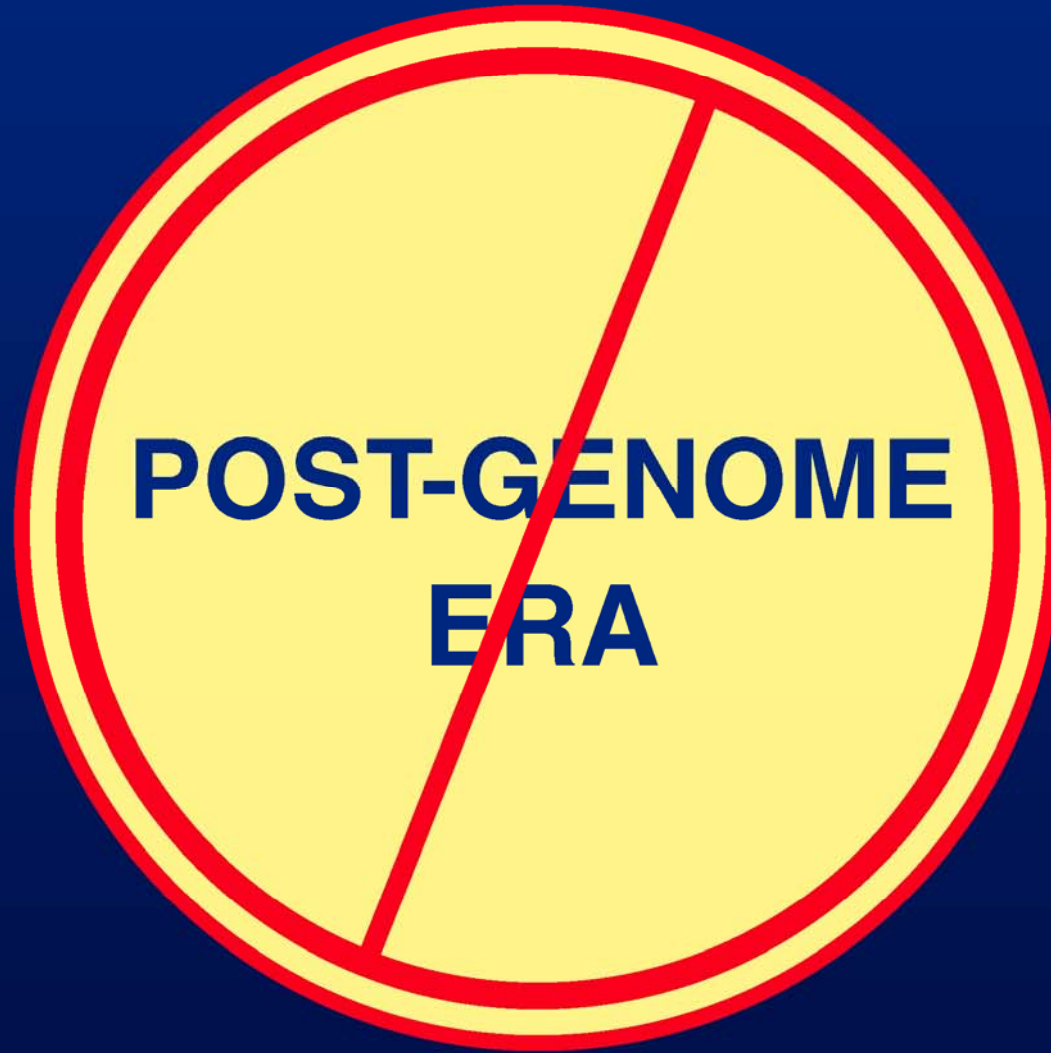


Flash Forward a Couple of Millennia... Today's Context for Family History



The Human Genome Project

FINISHED over four years ago, on APRIL 14, 2003...



WELCOME TO THE GENOME ERA

In the “Genome Era,” Why Something as Antiquated as Family History?



Genomic Medicine

1. Heart disease (654,000 deaths in 2004)
2. Cancer (550,000)
3. Cerebrovascular diseases (150,000)
4. Chronic lower respiratory dis. (124,000)
5. Injury? (109,000)
6. Diabetes (73,000)
7. Alzheimer disease (66,000)
8. Pneumonia/Influenza (61,000)
9. Kidney disease (43,000)
10. Septicemia (33,000)





In the “Genome Era,” Why Something as Antiquated as Family History?



In the “Genome Era,” Why Something as Antiquated as Family History?

- Health and disease are due to interactions of multiple genes and non-genetic (“environmental”) factors.



Indeed, ALL Diseases Have a Genetic Component

- In causation
- In how each individual responds to the disease
- In how individuals react to drugs used to treat them



Indeed, ALL Diseases Have a Genetic Component

- And family history is the cheapest, most accessible, most time-tested way to get a rough estimate of an individual's genetic (and maybe even a bit of shared environmental) health and disease susceptibilities.



Family History Can Change the Diagnostic Process for Many Diseases

- It can be the key to presymptomatic diagnosis
- If the individual is symptomatic, it can inform the differential diagnosis
- If the individual is symptomatic, it can also guide testing for the diagnosis



Family History Can Change Population Screening Guidelines

- Visual Impairment
- Hearing Impairment
- Thyroid Disease
- Thromboembolism
- Hypertension
- Diabetes
- Coronary Artery Disease
- Dyslipidemia
- Breast Cancer
- Colon Cancer
- Prostate Cancer
- Liver Cancer
- Hip Dysplasia
- Iron Def Anemia
- Osteoporosis
- Cardiomyopathy



Family History Can Change Management of Common Disease

- Coronary Heart Disease
- Hypertension
- Heart Failure
- Emphysema & COPD
- Syncope
- Pancreatitis
- Diabetes
- Thromboembolism
- Thyroid Cancer
- Breast Cancer
- Colon Cancer
- Urticaria
- Developmental Delay
- Pancreatitis

But Do People Care About Family History?

- In the Parade/Research!America 2004 survey of 1,000 individuals:
 - 65% have found health information on the Internet to be very or somewhat helpful



But Do People Care About Family History?

- In the Parade/Research!America 2004 survey of 1,000 individuals:
 - 65% have found health information on the Internet to be very or somewhat helpful
 - But, 96% thought, in thinking of their own health, that knowledge of family health history was very or somewhat important



But Do People Care About Family History?

- In a CDC-based survey of over 4,000 individuals:
 - 97% thought that knowledge of family health history was important



But Do People Care About Family History?

- In a CDC-based survey of over 4,000 individuals:
 - 97% thought that knowledge of family health history was important
 - But, only 30% had actually ever collected health information from relatives to develop a family health history.





If Family History Is So Useful, Do Health Professionals Use It Well?

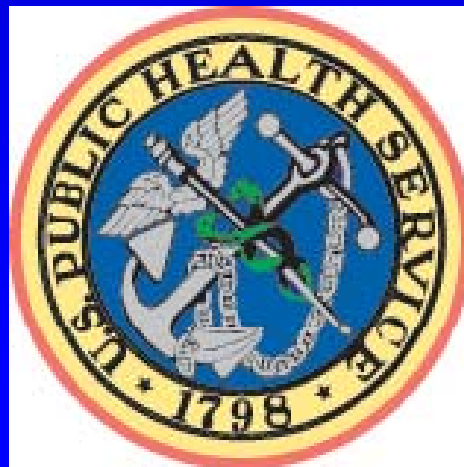
- Murff et al. compared family cancer history collected via self-completed survey with that in medical charts for 310 patients
- 57% (24/42) of those at increased risk for breast or colorectal cancer based on FH did not have this risk documented in their charts.
- Age of cancer diagnosis was recorded for 40% (50/124) of affected relatives identified by chart review, compared with 81% (203/252) identified through the survey



If Family History Is So Useful, Why Don't Health Professionals Use It More Consistently and Effectively?

- 1) Underestimation of the utility of the family history
 - Public (and health professional) awareness campaign needed
- 2) Not enough time to obtain, organize, and analyze family history
 - Requires creative approaches to the family history that demand less practitioner time

U.S. Surgeon General's Family History Initiative



Goals of U.S. Surgeon General's Family History Initiative

- Increase the American public's awareness of the importance of family history in health;
- Give the American public tools to gather, understand, evaluate, and use family history to improve their health;
- Increase the awareness of health professionals about the importance of family history;
- Give health professionals tools to gather, evaluate, and use family history information; and to communicate with their patients about family history;
- Increase genomics and health literacy;
- Prepare both the American public and their health professionals for the coming era in which genomics will be an integral part of regular health care.

Web-Based Family History Tool Available in English and in Spanish



My Family Health Portrait
A tool from the U.S. Surgeon General

URL: familyhistory.hhs.gov



U.S. Surgeon General's Family History Initiative



U.S. Surgeon General's Family History Initiative



Now New and Improved!



My Family Health Portrait

A tool from the U.S. Surgeon Click to activate and use this control



[Additional Information](#)

[Help with this page](#)

[en Español](#)



Welcome to My Family Health Portrait

My Family Health Portrait allows you to create a personalized family health history report from any computer with an Internet connection and an up-to-date Web browser.

Information you provide creates a drawing of your family tree and a chart of your family health history. Both the chart and the drawing can be printed and shared with your family members or your healthcare professional. Used in consultation with your healthcare professional, your family health history can help you review your family's health history and develop disease prevention strategies that are right for you.

Create a Family History

OR

Load a Saved Family History

New users can click on Create a Family History to begin creating a personalized family health history. Returning users can click on Load a Saved Family History to edit or update an existing personalized family health history.

My Family Health Portrait is compatible with most browsers and operating systems. Please see our [compatibility statement](#) for more information. For users who prefer alternative versions of My Family Health Portrait, the [downloadable software version](#) and [hard copy paper form](#) are available.

My Family Health Portrait

A tool from the U.S. Surgeon General

[en Español](#)

Help with this page

My Profile - Personal Information

Name:

Age:

Gender: Male Female

Weight (lbs.):

Height: Feet Inches

Next >

Steps toward completing My Family Health Portrait

Enter your personal information

- Create family
- Manage Diseases tracked throughout My Family
- Enter your health history



My Family Health Portrait

A tool from the U.S. Surgeon General

en Español

« Back to My Family

Help with this page

Health History for Alan Guttmacher [Me]

! = Information is missing

Name (optional): Alan Guttmacher

Gender: Male Female

Are you an identical twin? Yes No

Disease	Yes	No	Don't know	Age at first diagnosis
Heart Disease ?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	At age 40-49
Stroke ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Diabetes ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Colon Cancer ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Breast Cancer ?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	

[?](#) Definitions for heart disease, stroke, diabetes, colon cancer, breast cancer, and ovarian cancer

Additional diseases for this family member (optional):

CLL At age 50-59

Health History for Family Members

Manage Diseases tracked throughout My Family

▶ Enter your health history

- ▶ [Me]
- Carola [Mother]
- Theodora [Mother's Mother]
- Bernardo [Mother's Father]
- Manfred [Father]
- Laura [Father's Mother]
- Adolf [Father's Father]
- Laurence [Brother 1]
- Jonathan [Half Brother 1]
- Richard [Half Brother 2]
- Dorothy [Father's Sister 1]
- Alan [Father's Brother 1]
- Perla [Mother's Sister 1]
- Sarita [Mother's Sister 2]
- Elizabeth [Niece 1]
- Christopher [Nephew 1]
- Peter [Nephew 2]
- Thomas [Nephew 3]
- Joshua [Nephew 4]
- Ann [Female Cousin 1]
- Sally [Female Cousin 2]
- Susan [Female Cousin 3]
- Diana [Female Cousin 4]
- Sylvia [Female Cousin 5]
- Diego [Male Cousin 1]
- Franklin [Male Cousin 2]
- Martin [Male Cousin 3]
- Eduardo [Male Cousin 4]

My Family Health Portrait

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en Español

« Back to My Family

Help with this page

Diseases tracked throughout My Family

Adding new diseases to the list below is optional. If multiple family members have diseases not already on the list, enter those diseases in the **Enter disease** box and click the **Add** button. If you do not have diseases to add, click the **Next** button.

Diseases to be tracked in My Family	
Heart Disease 	(automatically tracked)
Stroke 	(automatically tracked)
Diabetes 	(automatically tracked)
Colon Cancer 	(automatically tracked)
Breast Cancer 	(automatically tracked)
Ovarian Cancer 	(automatically tracked)
Enter disease (to be added to the list above):	
<input type="text"/>	Add

Note: Heart Disease, Stroke, Diabetes, Colon Cancer, Breast Cancer, and Ovarian Cancer are already on the list because My Family Health Portrait automatically tracks them. These six chronic diseases are tracked because we have the best information about how to avoid these diseases if your family has a history of them.

 [Suggestions on diseases to track in your family](#)

 [Spell check a disease?](#)

My Family Health Portrait

A tool from the U.S. Surgeon General

en Español

« Back to My Family

Save Instructions

Help with this page

View Reports

Once you have finished entering your health information, you can view your family health portrait and print it to share with your doctor or healthcare professional. Together, you can use the report to review your family's health history, assess your risk for certain diseases and develop disease prevention strategies that are right for you.

It is important to save health information to your computer! If you have not saved your health information to your computer and need help, please click the **Save Instructions** button at the top of the page. If you view a report and then close your browser window without saving, your health information will be lost and you will have to create a new family health history.

Select Your Report Options:

Report Type:

- Drawing (of your family tree) *
- Chart (of your family health history)

Display Names:

- Yes No

Display My Personal Information:

(e.g. weight, height, age)

- Yes No

Highlight Options:

- Don't highlight anything
- Heart Disease
- Stroke
- Diabetes
- Colon Cancer
- Breast Cancer
- Ovarian Cancer
- CLL
- cervical discitis
- cardiac arrhythmia
- AML
- bilateral cataracts

Note: Relatives with Heart Disease, Stroke, Diabetes, Colon Cancer, Breast Cancer and Ovarian Cancer will automatically be tagged with abbreviations for the diseases they have. These diseases are automatically marked because they have a known genetic component.

Note: If you choose to highlight a disease, relatives with that disease will be colored on the drawing. Highlighting a disease allows you to see how that disease moves through the generations since those people will stand out on the drawing.

My Family Health Portrait

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en Español

« Back to My Family Save Instructions Help with this page

Back to View Reports Print this Report*

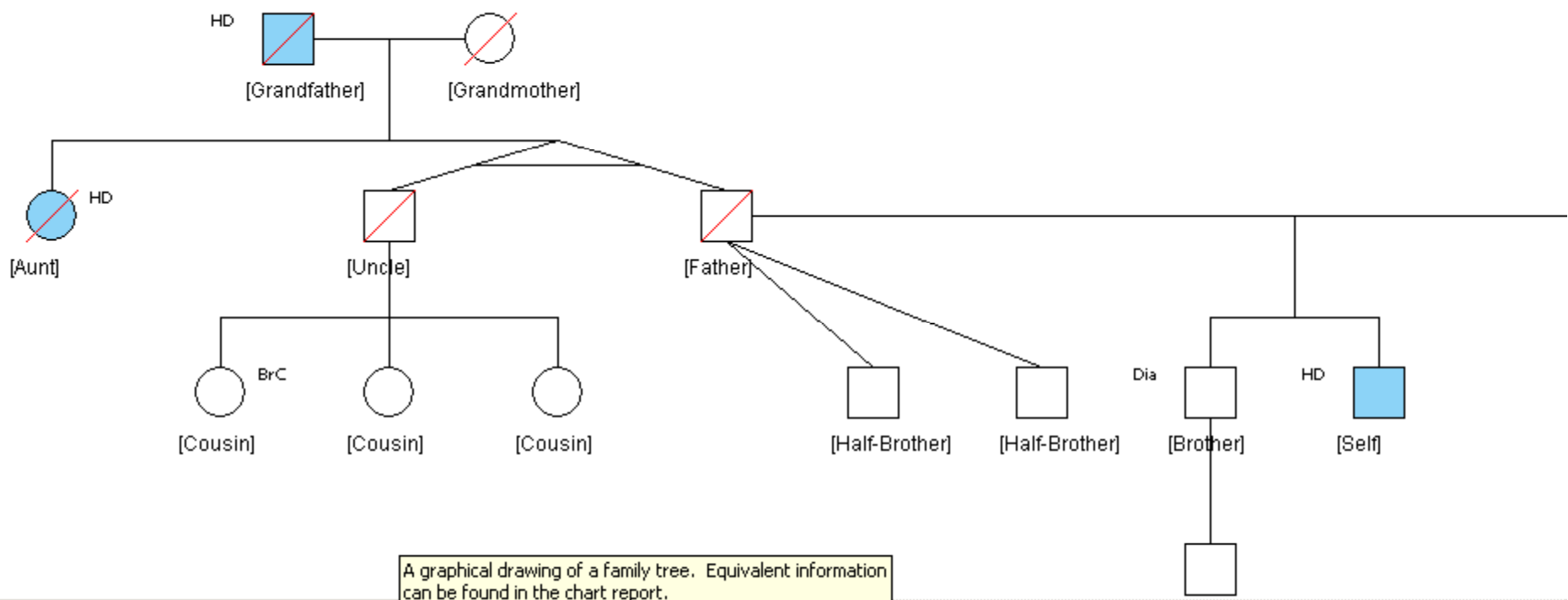
*Requires [Adobe Reader](#). Click on **Print this Report** button to get the best print results.

My Family Health Portrait - Drawing Report

Ian Guttmacher - October 17, 2007

Highlighted disease: Heart Disease

□ - Male Family Member	■ ● - Family Members with a History of Disease	
○ - Female Family Member	◻ ◯ - Deceased Family Member	
HD - Heart Disease	Str - Stroke	Dia - Diabetes
Col - Colon Cancer	BrC - Breast Cancer	OvC - Ovarian Cancer



My Family Health Portrait - Chart Report

Alan Guttmacher - October 17, 2007

My Family Health Portrait should only be used in consultation with a healthcare professional. It can be a valuable tool for discussion, risk assessment, and medical advice.

My Stats: Age: 57 Height: 6' 2" Weight: 185 Body Mass Index: 23.7

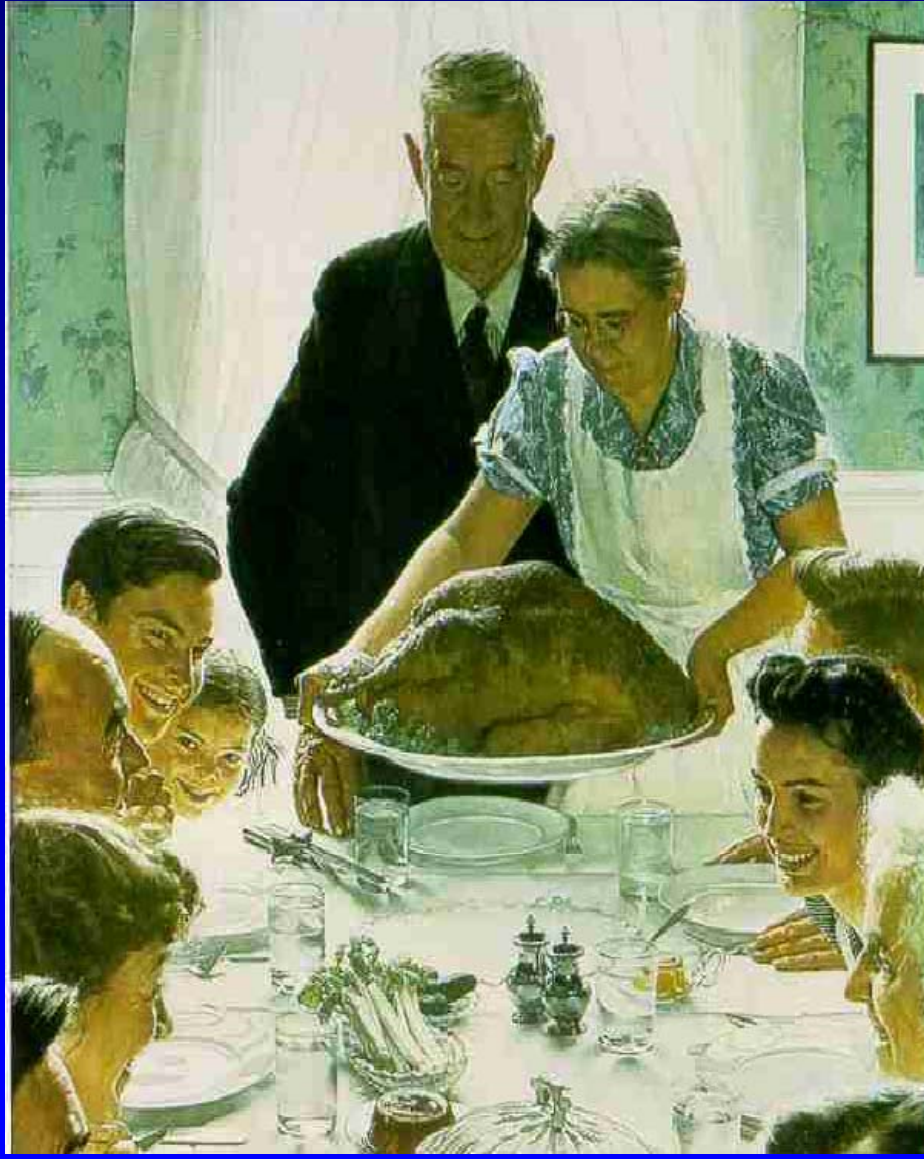
	Still Living?	Heart Disease	Stroke	Diabetes	Colon Cancer	Breast Cancer	Ovarian Cancer	Additional Diseases
Alan Guttmacher [Profile]	Yes	Yes, At age 40-49	No	No	No	No	N/A	CLL [At age 50-59]
Other	Yes	No	Yes, 60 and older	No	No	No	No	cervical discitis [60 and older] cardiac arrhythmia [60 and older]
Other's Other	No	Yes, 60 and older	No	No	No	No	No	
Other's Other	No	Yes, At age 50-59	No	No	No	No	N/A	
Other	No	No	No	No	No	No	N/A	AML [60 and older]
Other's Other	No	Don't know	No	No	No	No	No	
Other's Other	No	Yes, At age 50-59	No	No	No	No	N/A	
Other	Yes	No	No	Yes, At age 50-59	No	No	N/A	Bilateral cataracts [At age 40-49]
Half Brother	Yes	No	No	No	No	No	N/A	Cardiac arrhythmia [60 and older]
Half Brother	Yes	No	No	No	No	No	N/A	Recurrent ITP [60 and older]
Other's Sister	No	Yes, 60 and older	No	No	No	No	No	
Other's Other	No	No	No	No	No	No	N/A	CML [60 and older]
Other's Sister	Yes	Don't know	No	No	No	No	No	

THANKSGIVING IS THE ANNUAL NATIONAL FAMILY HISTORY DAY

- By proclamation of the U.S. Surgeon General, for each of the past four years, Thanksgiving has been declared the annual National Family History Day



Let's Make Thanksgiving Day Annual National Family History Day



Now that we've finished the family history, let's eat!

The Future???



The Future of the Surgeon General's Initiative

- Continued improvement of the web-based tool
- Wider awareness/dissemination for both web-based and paper versions
- Analysis algorithms
- Incorporation into Electronic Health Records



The Future?

- Genetic testing will assay genetic status directly, so we will no longer need to use family history as a surrogate for genetic status.
- However, for many years, we will not know exactly how the specific genetic status interacts with environment to create health and disease.
- So, we will use family history to help guide analysis and use of genetic tests.
 - e.g., interpretation of *BRCA1* mutation



Questions about Family History Include...

- How to collect, organize, display, analyze, store, and transmit family history information most efficiently and effectively
- How to use family history to change health attitudes and behaviors
- How to intercalate family history with genetic testing information



Matthew 1:2-16

Abraham begat Isaac; and Isaac begat Jacob; and Jacob begat Judas and his brethren; and Judas begat Phares and Zara of Thamar; and Phares begat Esrom; and Esrom begat Aram; and Aram begat Aminadab; and Aminadab begat Naasson; and Naasson begat Salmon; and Salmon begat Booz of Rachab; and Booz begat Obed of Ruth; and Obed begat Jesse; and Jesse begat David the king; and David the king begat Solomon of her that had been the wife of Urias; and Solomon begat Roboam; and Roboam begat Abia; and Abia begat Asa; and Asa begat Josaphat; and Josaphat begat Joram; and Joram begat Ozias; and Ozias begat Joatham; and Joatham begat Achaz; and Achaz begat Ezekias; and Ezekias begat Manasses; and Manasses begat Amon; and Amon begat Josias; and Josias begat Jechonias and his brethren, about the time they were carried away to Babylon. And after they were brought to Babylon, Jechonias begat Salathiel; and Salathiel begat Zorobabel; and Zorobabel begat Abiud; and Abiud begat Eliakim; and Eliakim begat Azor; and Azor begat Sadoc; and Sadoc begat Achim; and Achim begat Eliud; and Eliud begat Eleazar; and Eleazar begat Matthan; and Matthan begat Jacob; and Jacob begat Joseph the husband of Mary, of whom was born Jesus, who is called Christ.