DRAFT

Houston Area HIV Services Ryan White Planning Council

Affected Community Committee Meeting
12 noon, Monday, May 20, 2019
Meeting Location: 2223 West Loop South, Room 240
Houston, TX 77027

AGENDA

I. Call to Order — Rodney Mills and Isis Torrente, Co-Chairs
   A. Welcome
   B. Announce today's chairperson
   C. Moment of Reflection
   D. Adoption of the Agenda
   E. Approval of the Minutes

II. Public Comment
(NOTE: If you wish to speak during the Public Comment portion of the meeting, please sign up on the clipboard at the front of the room. No one is required to give his or her name or HIV status. All meetings are audio taped by the Office of Support for use in creating the meeting minutes. The audiotape and the minutes are public record. If you state your name or HIV status it will be on public record. If you would like your health status known, but do not wish to state your name, you can simply say: "I am a person living with HIV", before stating your opinion. If you represent an organization, please state that you are representing an agency and give the name of the organization. If you work for an organization, but are representing yourself, please state that you are attending as an individual and not as an agency representative. Individuals can also submit written comments to a member of the staff who would be happy to read the comments on behalf of the individual at this point in the meeting.)

III. Training: Ending the HIV Epidemic — Tori Williams

IV. New Business
   A. 2019 Public Hearings — Tori Williams
      - Monday, May 20th – How To Best Meet the Need
      - Monday, July 1st – Priorities and Allocations

V. Old Business
   A. Updates on Ryan White Part A/MAI — Tori Williams
   B. Updates on Ryan White Part B and State Services — Reachelian Ellison
   C. Road 2 Success — Tori Williams
      - Harris Health System
      - See next agenda item for dates with Positive713
   D. 2019 Community Events*
   E. Greeters
   F. Quarterly Committee Report

VI. Announcements

VII. Adjourn

VIII. Members meet with committee mentor — Allen Murray

DRAFT

Houston Area HIV Services Ryan White Planning Council

Affected Community Committee Meeting
12:00 pm, Monday, March 25, 2019
Meeting Location: 2223 West Loop South, Room 240, Houston, TX 77027

MINUTES

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Rodney Mills, Co-Chair	Isis Torrente, excused	*Office of Support*
Veronica Ardoin	Rosalind Belcher	Tori Williams
Tony Crawford	Arlene Johnson	Rod Avila
Holly McLean	John Poole	
Ronnie Galley	Ma'Janae Chambers	
Tana Pradia	Eddie Gonzalez	
Ardry "Skeet" Boyle	Veria Steptoe	
Lionel Pennamon	Roy Wesley	

Call to Order: Mills called the meeting to order at 12:03 p.m. Mills said that he would be chairing today's meeting and then asked for a moment of reflection.

Adoption of the Agenda: ***Motion #1****: it was moved and seconded (Boyle, Pradia) to adopt the agenda.* **Motion carried unanimously.**

Approval of the Minutes: ***Motion #2****: it was moved and seconded (Galley, Pradia) to approve the February 25, 2015 minutes with the following change: Ronnie Galley was present and should have been included on the February 25, 2019 meeting attendance list. Staff will make this correction.* **Motion carried unanimously.**

Public Comment: None.

Training: The Ryan White How To Best Meet the Need Process: Williams walked committee members through the How To Best Meet the Need (HTBMN) process, which will take place in April 2019. See attached. All members were encouraged to sign up for How To Best Meet the Need workgroups. Email reminders will be sent to those who sign up. The following members signed up for as follows:

Special Workgroup #1:	Ardoin, Crawford, Galley, McLean, Mills, Pennamon, Pradia
Workgroup #1:	Boyle, Galley, Pennamon
Workgroup #2:	Boyle, Crawford, Galley, Pennamon, Pradia
Workgroup #3:	Ardoin, Galley, Mills, McLean, Pennamon, Pradia

Old Business
Project LEAP Recruitment: Williams updated the committee on Project LEAP updates and extended thanks to all who spent time and effort recruiting students for Project LEAP 2019.

Road 2 Success: William announced that she is working on the 2019 Road 2 Success training dates. Those interested are: Harris Health System and Positive713.

2019 Community Events: Committee members signed up to staff booths at community events, see the attached schedule.

Greeters: Volunteers signed up to be greeters at monthly Council meetings, see attached.

Announcements: The Committee will not meet in April so that members can participate in the How To Best Meet the Need training and workgroup meetings

Adjourn: ***Motion #3:*** *it was moved and seconded (Pradia, Galley) to adjourn the meeting at 12:36 p.m.* **Motion carried unanimously.**

Submitted by: Approved by:

_____ _____

Tori Williams, Director Date Committee Chair Date

HRSA supports Trump Administration's Plan to End the HIV Epidemic

U.S. Department of Health & Human Services
Health Resources and Services Administration

HRSA NEWS ROOM
http://newsroom.hrsa.gov

FOR IMMEDIATE RELEASE
Wednesday, February 6

CONTACT: HRSA PRESS OFFICE 301-443-3376
Press@hrsa.gov

The Health Resources and Services Administration (HRSA) fully supports the Trump Administration's initiative: *Ending the HIV Epidemic: A Plan for America.*

Through HRSA's Ryan White HIV/AIDS Program and the HRSA-funded Health Center Program, the agency will play a leading role in helping to diagnose, treat, protect and respond to end the HIV epidemic.

"We have an unprecedented opportunity to end the HIV epidemic in America. Through this initiative, in 2020, HRSA would work with program recipients to expand evidence-informed interventions proven to increase engagement and retention in care, reduce stigma, and improve viral suppression for the hardest to reach individuals," said HRSA Administrator George Sigounas, MS, Ph.D. "HRSA's Health Center Program will play a major expanded role in providing Pre Exposure Prophylaxis (PrEP) to those populations at the greatest risk of acquiring HIV infection."

HRSA will target resources to the 48 highest burden counties, Washington, D.C., San Juan, Puerto Rico, and seven states with a substantial rural HIV burden.

The HRSA-funded Health Center Program will expand PrEP services to selected health centers in the focus jurisdictions where over half of all new HIV infections occur.

HRSA's Ryan White HIV/AIDS Program will increase HIV care and treatment efforts in the focus jurisdictions.

The Ryan White HIV/AIDS Program has a track record of success. Of all the patients that had at least one medical visit in the program in 2017, 86% were virally suppressed, significantly higher than the national average of 60% among all those living with diagnosed HIV.

The Ryan White HIV/AIDS Program will continue to provide key services such as case management, behavioral health, medications, and medical care as well as support services such as transportation and housing — all of which are critical for engaging people living with HIV in medical care and ensuring improved health outcomes.

HRSA's Health Center Program supports 12,000 service delivery sites across the country, providing affordable, accessible, high quality, and cost-effective preventive and primary health care to more than 27 million people annually.

Health centers provide a model of coordinated, comprehensive, and patient-centered primary health care, integrating a wide range of medical, dental, mental health, substance use disorder, and patient services.

Health centers are also a key point of entry for people undiagnosed with HIV. Nearly two million patients receive a HIV test at a health center annually.

Many health centers provide HIV care services, including PrEP. And within the *Ending the HIV Epidemic initiative*, HRSA's Health Center Program will play a major expanded role in providing PrEP to those populations at the greatest risk of acquiring HIV infection.

For more information on *Ending the HIV Epidemic: a Plan for America*, please visit: https://www.hiv.gov/ending-hiv-epidemic.

For more information on the Ryan White HIV/AIDS Program, please visit: https://hab.hrsa.gov.

For more information on HRSA's Health Center Program, please visit: https://bphc.hrsa.gov.

Date Last Reviewed: February 2019

Ending the HIV Epidemic: A Plan for America

HHS is proposing a once-in-a-generation opportunity to eliminate new HIV infections in our nation. The multi-year program will infuse 48 counties, Washington, D.C., San Juan, Puerto Rico, as well as 7 states that have a substantial rural HIV burden with the additional expertise, technology, and resources needed to end the HIV epidemic in the United States. Our four strategies – diagnose, treat, protect, and respond – will be implemented across the entire U.S. within 10 years.

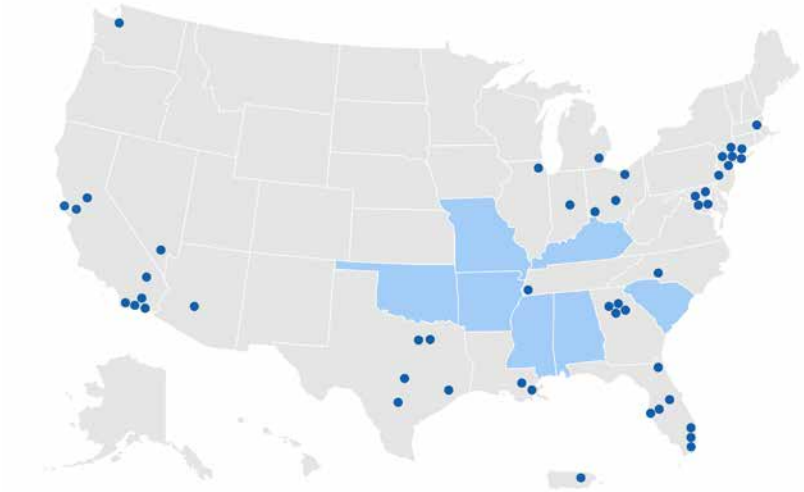
GOAL:

75% reduction in new HIV infections in 5 years and at least **90%** reduction in 10 years.

Our goal is ambitious and the pathway is clear – employ strategic practices in the *places* focused on the right *people* to:

- **Diagnose** all people with HIV as early as possible after infection.
- **Treat** the infection rapidly and effectively to achieve sustained viral suppression.
- **Protect** people at risk for HIV using potent and proven prevention interventions, including PrEP, a medication that can prevent HIV infections.
- **Respond** rapidly to detect and respond to growing HIV clusters and prevent new HIV infections.
- **HIV HealthForce** will establish local teams committed to the success of the Initiative in each jurisdiction.

The Initiative will target our resources to the 48 highest burden counties, Washington, D.C., San Juan, Puerto Rico, and 7 states with a substantial rural HIV burden.



Geographical Selection:
Data on burden of HIV in the US shows areas where HIV transmission occurs more frequently. More than 50% of new HIV diagnoses* occurred in only 48 counties, Washington, D.C., and San Juan, Puerto Rico. In addition, 7 states have a substantial rural burden – with over 75 cases and 10% or more of their diagnoses in rural areas.

*2016-2017 data

Ending the HIV Epidemic | www.HIV.gov

Ending the HIV Epidemic – Key Strategies:

Achieving elimination will require an infusion of resources to employ strategic practices in the right places targeted to the right people to maximize impact and end the HIV epidemic in America. Key strategies of the initiative include:

Affected Community Committee
2019 Community Events (as of 05-13-19)

Point Person (PP): Committee member who picks up display materials and returns them to the Office of Support.

Day, date, times	Event	Location	Participants
Sunday, March 3 1 pm-Walk	AIDS Foundation Houston (AFH) AIDS Walk	Houston Park Downtown 1100 Bagby Street, 77002	**Need 3 volunteers – distribute LEAP flyers:** Tana, Tony and Ronnie
Friday, May 31 10 am – 2 pm	SPRY Senior Health and Resource Fair – NEED A DOOR PRIZE	Montrose Center	**Need 4 volunteers: PP: Isis**, Rodney,
Sun. June 2	Long-Term HIV Survivors Event	Neon Boots	**Need 5 Volunteers: PP: Skeet,** Tana, Tony, Ronnie and Johnny
June 22	Pride Festival	Downtown near City Hall	Shift 1 (11:30 am-2 pm): **PP: Rod**, Tana, Skeet & Ronnie Shift 2 (2-4:30 pm): Tana, Holly & Veronica Shift 3 (4:30-7 pm): **PP:** Maybe Tony
Monday, July 8 5 – 7 pm,	Camino hacia tu Salud	Postive713 Leonel Castillo Community Center 2101 South Street, 77009	**Need 6 Volunteers: PP: Rod,**
July or August	Road 2 Success	Thomas Street Health Center	**Need 6 Volunteers: PP: Rod,** Lionel, Skeet, Ronnie, Holly and Veronica
August or September	Road 2 Success		**Need 6 Volunteers: PP: Rod,**
Monday, October 14 5 – 7 pm	Camino hacia tu Salud	Positive713 Leonel Castillo Community Center 2101 South Street, 77009	**Need 6 Volunteers: PP: Rod,**
October	MISS UTOPIA	**NOTE CHANGE OF VENUE IN 2018** **CROWNE PLAZA HOUSTON** **(Near Reliant - Medical)** **8686 Kirby Drive** **Houston, Texas 77054**	**4 Volunteers: PP:** DISTRIBUTE LEAP FLYERS
November or December	Road 2 Success		**Need 6 Volunteers: PP: Rod,**
Sunday, December 1	World AIDS Day Events	SEE CALENDAR OF EVENTS	Most committee members attend events DISTRIBUTE LEAP FLYERS

Greeters for 2019 Council Meetings

(Revised: 03-26-19)

2019 Meeting Dates (**Please arrive at 11:45 a.m.** Unless otherwise noted, the meetings are held at 2223 W. Loop South)	**Greeter #1** External Member	**Greeter #2**	**Greeter #3**
Thurs. March 14	Skeet	Tony	Ronnie
Thurs. April 11	Lionel	Veronica	Holly
Thurs. May 9	Lionel	Rodney	Tony
Thurs. June 13 – LEAP presentation	Ronnie	Tony	Skeet
Thurs. July 11			
Thurs. August 8			
Thurs. September 12			
Thurs. October 10			
Thurs. November 14 External Committee Member Appreciation			
Thurs. December 12			

2019 QUARTERLY REPORT
AFFECTED COMMUNITY COMMITTEE
(May 2019)

Status of Committee Goals and Responsibilities (* indicates a HRSA mandate):

1. Educate consumers so they understand how to access HIV/AIDS treatment and medication. Provide information that can be understood by consumers of diverse educational backgrounds on client-centered issues.
   Status:

2. Continue to get a better understanding of the needs of transgender individuals through training, attending meetings of the transgender community and more.

3. Assure participation by people living with HIV in all Council work products.
   Status:

4. *Work with other committees to coordinate Public Hearings regarding the FY 2019 How to Best Meet the Need Results & Priorities and Allocations for Ryan White Parts A and B and State Services.
   Status:

5. Recruit Council applicants throughout the year.
   Status:

6. Annually, review the status of committee activities identified in the current Comprehensive Plan.
   Status:

_____ _____

Committee Chairperson Date

Metabolic Syndrome Among People Living with HIV Receiving Medical Care in Southern United States: Prevalence and Risk Factors

Sabeena Sears, Justin R. Buendia, Sylvia Odem, Mina Qobadi, Pascale Wortley, Osaro Mgbere, Jontae Sanders, Emma C. Spencer, et al.

AIDS and Behavior

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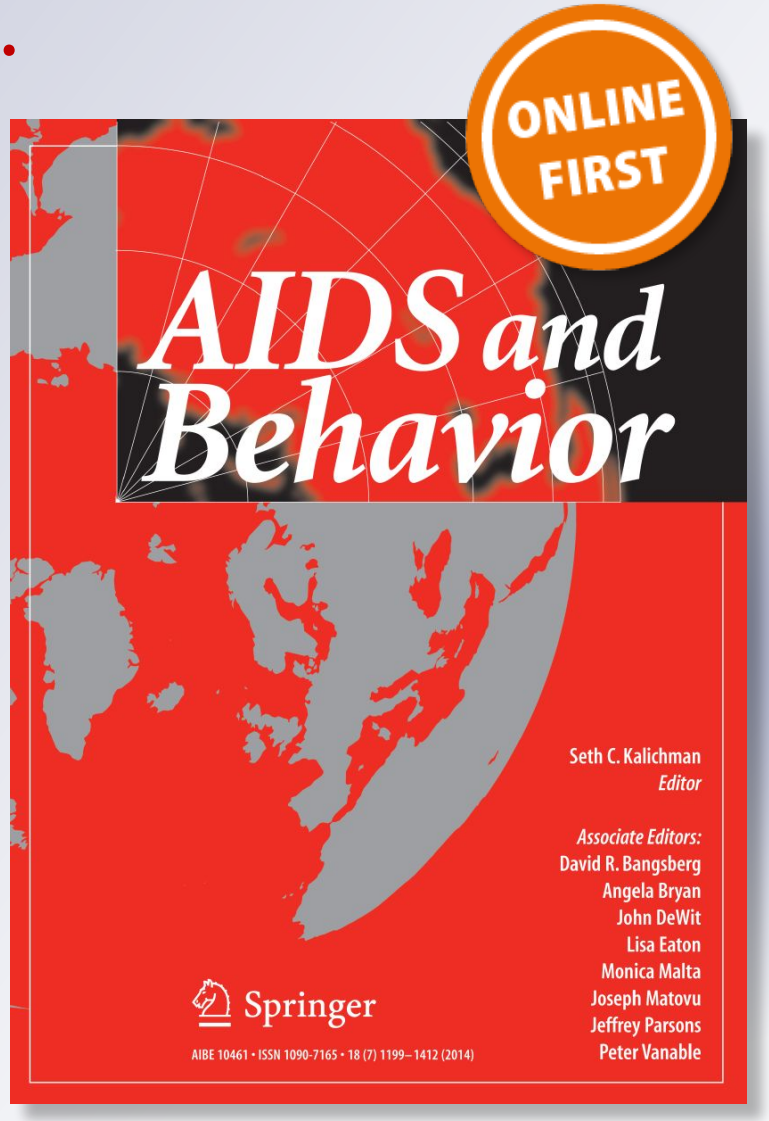

Springer

AIDS and Behavior
https://doi.org/10.1007/s10461-019-02487-8

ORIGINAL PAPER

Metabolic Syndrome Among People Living with HIV Receiving Medical Care in Southern United States: Prevalence and Risk Factors

Sabeena Sears[1,8] · Justin R. Buendia[1] · Sylvia Odem[1] · Mina Qobadi[2] · Pascale Wortley[3] · Osaro Mgbere[4] · Jontae Sanders[5] · Emma C. Spencer[5] · Arti Barnes[6,7]

Abstract

Using representative data among 1861 in care people living with HIV (PLWH) in four southern states (Texas, Mississippi, Florida, and Georgia) from the 2013–2014 Medical Monitoring Project (MMP) survey, we estimated the prevalence and odds of metabolic syndrome (MetS) among various demographic and HIV related risk factors. Overall MetS prevalence was 34%, with our participants being mostly black (55%), male (72%), ≥ 50 years old (46%), and overweight or obese (60%) with undetectable viral loads (≤ 200 copies/ml, 69%), and were currently taking antiretroviral medication (98%). Compared to those who were ≥ 60 years, 18–39 year olds had a 79% (95% CI 0.13–0.33) lower odds of having MetS. Women were 2.24 times more likely to have MetS than men (95% CI 1.69–2.97). Age and sex were significant predictors of MetS. Since MetS is a combination of chronic disease risk factors, regular screening for MetS risk factors among aging PLWH is crucial.

Keywords HIV · Metabolic syndrome · Medical Monitoring Project · Southern United States

Resumen

Usando datos representativos entre 1861 personas viviendo con VIH y recibiendo cuidado para VIH en cuatro estados del sur (Texas, Mississippi, Florida y Georgia) de la encuesta del Proyecto de Monitoreo Médico (MMP, siglas en inglés) 2013-2014, estimamos la prevalencia y las probabilidades del síndrome metabólico (MetS) entre varios factores de riesgo demográficos y relacionados con el VIH. La prevalencia general de MetS fue del 34%, y nuestros participantes fueron en su mayoría negros (55%), hombres (72%), ≥ 50 años (46%), con sobrepeso u obesidad (60%), con carga viral indetectable (≤ 200 copias/ml, 69%), y actualmente tomando medicamentos antirretrovirales (98%). En comparación con los que tenían ≥ 60 años, los de 18 a 39 años tuvieron un 79% (IC del 95%: 0.13-0.33) más baja probabilidad de tener MetS. Las mujeres tuvieron 2.24 veces más probabilidad de tener MetS que los hombres (IC del 95%:1.69-2.97). La edad y el sexo fueron predictores significativos de MetS. Dado que el MetS es una combinación de factores de riesgo para enfermedades crónicas, la evaluación regular de los factores de riesgo de MetS a lo largo del proceso de envejecimiento de personas que viven con VIH es crucial.

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Abbreviations

MetS	Metabolic syndrome
CVD	Cardiovascular disease
HIV	Human immunodeficiency virus
PLWH	People living with HIV
AIDS	Acquired immunodeficiency syndrome
aOR	Adjusted odds ratio
CI	Confidence intervals
MMP	Medical Monitoring Project
IDF	International Diabetes Federation
HDL	High density lipoprotein
BP	Blood pressure
BMI	Body mass index
ART	Antiretroviral therapy

Published online: 30 March 2019

T2DM	Type II diabetes mellitus
NFHL	Nutrition for healthy living
NHBLI	National Heart, Blood, and Lung Institute
AHA	American Heart Association
HAART	Highly active antiretroviral therapy
ATP	Adult treatment panel

Introduction

The success of highly active antiretroviral therapy has led to a dramatic decline in immunodeficiency-related causes of death and improvement in life expectancy among PLWH [1–3]. However, as patients are aging with HIV, the decline in morbidity and mortality has been clouded by the emergence of a number of cardio-metabolic perturbations [4]. Cardio-metabolic perturbations, which are collectively known as the metabolic syndrome, refer to a cluster of coexisting metabolic risk factors, such as abdominal obesity, dyslipidemia, defective glucose metabolism, and arterial hypertension [5], that are associated with increased risk of cardiovascular disease (CVD) and diabetes mellitus [6, 7]. In addition to the cardiovascular outcomes, individuals with MetS are thought to be more susceptible to a range of conditions. This includes, but is not limited to, vascular diseases (e.g., atherosclerotic cardiovascular disease and hypertension), adiposity-related disorders (e.g., sleep disordered breathing and fatty liver disease), insulin resistance conditions (e.g., type 2 diabetes or gestational diabetes and polycystic ovary syndrome), atherogenic dyslipidemia, hormonal dysfunction, and chronic kidney disease [8].

With a wide range of estimates from 11.2 to 45.4%, the prevalence of MetS among PLWH is debatable [9, 10]. These large differences may be attributed to differences in study design, small sample sizes, different demographic characteristics of sample populations, and the several MetS definitions used, which make it difficult to draw consistent and comparable population level conclusions on MetS prevalence among PLWH [9].

Although unhealthy behaviors such as poor diet and low levels of physical activity contribute to chronic diseases such as diabetes [11], the natural course of HIV infection and its treatment further increase the susceptibility to cardio-metabolic disorders among PLWH [12]. HIV infection itself, through chronic deregulated inflammatory response, may also play an important role in the pathogenesis of both diabetes mellitus and atherosclerosis [9, 13]. Moreover, the use of certain antiretroviral therapy regimens that include a protease inhibitor is associated with adipose tissue changes and disorders of glucose and lipid metabolism [14]. These findings have raised concerns that PLWH may be at a higher risk of developing MetS, which subsequently may be linked to an increase in CVD risk and diabetes.

CVD is the number one cause of death in adults worldwide [15]. It has been shown that patients with HIV experience a 2–3 times higher CVD risk compared to those without HIV [16, 17]. Previous studies [18–21] reported gender differences on CVD risk among PLWH, but the results are inconsistent. Cross-sectional data from the Data Collection on Adverse Events of Anti-HIV Drugs study [18] showed that female sex was a protective factor against the risk of myocardial infarction among adults living with HIV. However, two studies reported higher relative risk of acute myocardial infarction in HIV positive women than in HIV positive men [19, 20]. Chow et al. found a similar gender effect for stroke among adults living with HIV, indicating an increased risk of stroke among women with HIV compared to men with HIV [21].

Diabetes is the seventh leading cause of death in the US and one of the major causes of CVD, adult-onset blindness, kidney failure, and lower-limb amputations, affecting 9.4% of the US population [22]. It has been shown that patients living with HIV can have up to a twofold higher risk of diabetes when compared to the general population [23], with the prevalence estimate of up to 14% [24]. The direct influence of HIV on diabetes remains unclear. There is mixed evidence regarding HIV as an independent risk factor for diabetes, with some studies reporting an increased prevalence and incidence of impaired glucose tolerance and diabetes among PLWH [25, 26] and others showing no independent effect of HIV on the development of diabetes [25, 27].

In the US, the South is generally behind other regions in some key HIV prevention and care indicators such as having the highest numbers of people without health insurance [28] and not adopting newer HIV prevention advances such as antigen/antibody HIV tests that can detect acute HIV infection. Consequently, it is important to understand disease prevalence to better allocate resources essential for developing preventive and management strategies, healthcare service planning, and the implementation of specific targeted interventions. Studies indicate that southern states are disproportionately affected by diseases linked with MetS such as obesity [29], diabetes [30], and hypertension [31, 32]. In addition, southern states account for nearly half of all PLWH (44%) in the US, despite making up about one-third (37%) of the overall US population [33, 34]. In 2014, eight of the top 10 states in the US with the highest HIV morbidity rates were in the South and included Texas, Mississippi, Georgia, and Florida [35]. Therefore, understanding the potential overlapping impact of being a PLWH in the South, with respect to cardiovascular and diabetes risk, could lead to better clinical assessments and risk mitigation in this population. With a paucity of data available on CVD and diabetes among southern PLWH, we aimed to estimate the prevalence of metabolic syndrome and to establish its associated risk factors among PLWH in the southern US.

Methods

Medical record abstraction and interview data from the 2013–2014 MMP survey, which includes statewide surveillance of PLWH for Texas (including the city of Houston), Mississippi, Georgia, and Florida, were used in this study. MMP is a Centers for Disease Control (CDC) supplemental surveillance system that monitors behavioral and clinical characteristics of people living with HIV (PLWH) aged 18 years or older receiving medical care across 23 sites nationwide. MMP is a cross-sectional survey with a three-stage sampling design: (1) At a geographic level for the US and dependent areas, (2) At a facility level through outpatient HIV care facilities, and (3) on an individual level for PLWH aged ≥ 18 years who had at least one medical care visit at a sampled facility between the months of January and April of 2013 and 2014. Data collection occurred between June 2013 and May 2015. The data obtained were weighted to account for the probabilities of selection at each sampling stage and adjusted for nonresponse and multiplicity. Nonresponse adjustments accounted for differing response at both facility and patient levels, and multiplicity adjustments accounted for patient's visits to more than one HIV care facility [36]. After excluding participants for missing data, our sample included 1861 participants representing 80,596 of adults living with HIV in the four southern US states (Texas, Florida, Mississippi, and Georgia).

Measures

These analyses used the International Diabetes Federation (IDF) definition of metabolic syndrome (MetS) was used for these analyses, which is characterized by central obesity plus two of the following criteria: raised triglycerides, reduced HDL (high density lipoprotein) cholesterol, raised blood pressure (BP), or raised fasting blood glucose [37]. Central obesity for MMP participants was calculated from body mass index (BMI, kg/m^2), race/ethnicity, and birth sex-specific equations developed by Bozeman et al. [38]. Multiracial, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, and transgender participants (n = 94) were excluded because there were no equations developed for these populations. BMI measurements, as documented in the medical chart within 1 year of the participant interview, were abstracted from medical records. Participants with missing height or weight (n = 275) were excluded.

MMP participants were classified as having the following four MetS criteria if any of the following was documented in the medical record:

Raised triglycerides (1) hypertriglyceridemia diagnosis or (2) prescription medications for raised triglycerides treatment as determined by clinician review of all the recorded medications abstracted or (3) most recent fasting triglyceride laboratory (lab) value ≥ 150 mg/dl.

Reduced high density lipoprotein (HDL) cholesterol (1) "low HDL" diagnosis or (2) prescription medications for low HDL (medications which could be used for both hypertriglyceridemia and low HDL such as statins, among others, were not double counted among criteria for raised triglycerides and low HDL) or (3) most recent fasting HDL lab < 40 mg/dl (males) or < 50 mg/dl (females).

Elevated blood pressure (BP) or hypertension (1) hypertension diagnosis or (2) prescription medications for hypertension treatment or (3) most recent systolic BP ≥ 130 or diastolic BP ≥ 85 mmHg.

Raised fasting blood glucose (1) Type 2 diabetes diagnosis or (2) most recent fasting blood glucose > 100 mg/dl.

If the participants met the waist circumference criteria, they were further evaluated on whether they had enough non-missing criteria to be considered for the study. Because participants could be seeking non-HIV care and/or receiving prescriptions for non-HIV medications at other medical facilities from which we did not review their medical chart, we assumed that the participant did not meet criteria only if they had labs that fell within normal range at the sampled facility, otherwise the criterion was set to missing for that participant. For this study, we determined that if a participant met the waist criterion but did not meet at least two other criteria for MetS and had two or more criteria missing due to non-availability of lab values or other diagnostic variables, then they were excluded from the analysis (n = 383). Additionally, if a participant met one criteria but had at least one criteria missing, they were excluded from the analysis because it is possible that they could have MetS if the value of the missing criteria was known (n = 110). Figure 1 displays the flowchart of the study sample selection process and highlights the inclusion and exclusion criteria used.

Other variables included were: sociodemographic variables including age, sex at birth, race/ethnicity, education, health insurance type, current smoking status, alcohol use, and poverty level. Length of time on antiretroviral therapy (ART) was determined from patient self-report. Clinical variables measured within the past year included BMI, time since HIV diagnosis, viral suppression status, prescription of ART, and geometric mean CD4+ T-lymphocyte (CD4) count.

Statistical Analysis

Among PLWH, weighted prevalence and 95% confidence intervals (CI) of MetS were calculated as overall

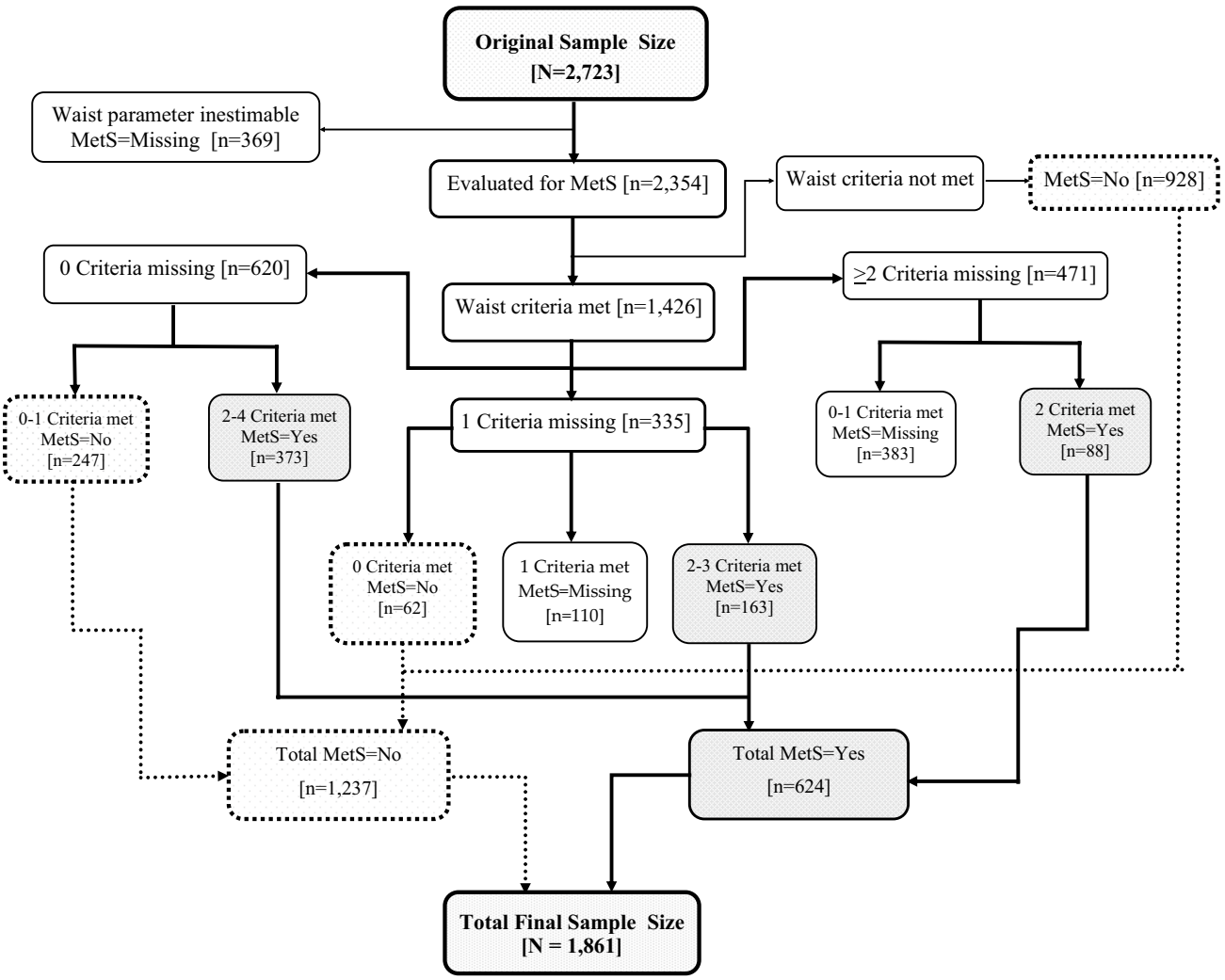

Fig. 1 Flowchart of study sample selection process

measure and by each of the following categories of sociodemographic and HIV-related characteristics: age (18–39, 40–49, 50–59, or ≥ 60 years), sex at birth, race/ethnicity (non-Hispanic White, Black, Hispanic), education (< high school, high school or equivalent, or > high school), poverty level (at or below federal poverty line and above federal poverty line), BMI (normal weight, overweight, or obese), time since HIV diagnosis (< 5 years, 5–9 years, or ≥ 10 years), and length of time on antiretroviral therapy (ART) (< 5 years, 5–9 years, or ≥ 10 years). To identify factors associated with MetS and to compute adjusted odds ratios (aOR) and corresponding 95% CIs among PLWH, multivariable logistic regression models were used with MetS as the outcome, and all the aforementioned characteristics except for BMI were included as independent predictors. Variables that changed the aOR by > 10% were retained in the multivariable model. All analyses were performed using SAS 9.4 (SAS Institute, Cary, North Carolina, USA) and weighted to account for clustering, unequal selection probabilities, and non-response.

Human Subjects Protection

MMP has been determined by the National Center for HIV, Viral Hepatitis, STD and TB Prevention's Office of the Associate Director for Science at the CDC to be a non-research, public health surveillance activity used for disease control program or policy purposes. As such, MMP is not subject to human subjects' regulations, including federal institutional review board (IRB) approval. All data collection was Health Insurance Portability and Accountability Act compliant. Informed consent was obtained from all individual participants included in the study.

Results

Of the 2723 total participants from the four southern US states (Texas, Florida, Mississippi, and Georgia), 862 were excluded from the analysis due to missing data, leaving a final analytic sample of 1861 participants. Table 1 shows the baseline characteristics of these participants by MetS. Thirty-four percent of the total sample (n = 624) had MetS, most of whom were men (62%), black (50%), ≥ 50 years of age (61%), and overweight or obese (97%).

Table 2 shows the aORs and 95% CIs of having MetS by the various predictors. Age, sex, and current smoking were all significantly associated with MetS prevalence ($p < 0.01$ for all). Compared to those ≥ 60 years old, 18–39 year-olds had a 79% lower odds of having MetS (95% CI 0.13–0.33). Similarly, lower odds were observed in males compared to females (aOR: 0.45, 95% CI 0.34–0.59). Current smokers had a 39% reduced odds of having MetS (95% CI 0.46–0.81).

Since sex at birth was a strong predictor of MetS, Table 3 illustrates the sex-stratified aORs of MetS by various sociodemographic factors. Age and smoking remained significant predictors of MetS for men whereas only age remained as a significant predictor for women ($p < 0.01$ for all). In both men and women, those aged 18-39 years had an 81% and 73% lower odds of having MetS, respectively. Male current smokers had a 42% reduced odds of having MetS (95% CI 0.34–0.66).

Discussion

We found that approximately a third of PLWH living in southern states have MetS. Given the disproportionate impact of diseases linked to MetS in the South, we expected the prevalence of MetS in our study to be higher, but this could be partially explained by demographic differences and our conservative selection process. Additionally, we used the IDF definition rather than the ATP III definition used in other studies. Currently, there are no regional population-based estimates for MetS in the southern US, but our results are within range of several studies among PLWH. A recent systematic review of MetS among PLWH by Paula et al. [9] showed that MetS prevalence ranged from 11% in a Mediterranean multicenter lipodystrophy case definition cohort [39] to up to 45% in an Italian cohort [40]. Differences in characteristics among study participants may contribute to the variability observed in previously published MetS prevalence estimates. For example, a cohort of only men in an international cohort [41] saw a significantly lower MetS prevalence (18%) compared to 25.5% among a cohort of South African men and women [42]. An analysis using the Nutrition for Healthy Living (NFHL) study found MetS prevalence to be 24% among American PLWH [43], which is lower than our current result. Several factors including the use of the National Heart Blood and Lung Institute/American Heart Association (NHBLI/AHA) guidelines (vs IDF), a younger cohort (mean age = 42 vs. 47 years), and a predominantly white sample (52% vs. 25% in MMP) may further explain the reasons for the lower estimate.

Our results show that women have more than double the odds of having MetS than men, which could be explained by more women (75%) meeting the waist criteria compared to men (43%). Cultural factors like different diets in males compared to females may be a possible contributor. According to Freimer et al. cultural variation may play an important role in human nutrition and must be considered in either clinical or public health intervention strategy particularly in areas with large immigrant populations [44]. The increased MetS odds may not only be due to gender differences in traditional risk factors such as body weight [45], abdominal adiposity [46], and genetic biomarkers differences [47], but also to drug exposure, antiretroviral-associated toxicities [45], and combined ARV treatment. Pernerstofer-Schoen et al. [48], in a prospective longitudinal cohort study compared gender-stratified HIV positive individuals initiating a protease inhibitor containing highly active antiretroviral therapy (HAART) regimen with matched HIV negative individuals. The authors found that LDL:HDL was higher among female HIV patients compared to males after initiation of a combined antiretroviral therapy and that circulating levels of E-selectin, an endothelium-associated marker of inflammation and atherosclerotic risk, declined in males whereas they remained elevated in women [48]. This indicates that HAART-suppressed immunological/inflammatory processes are less effective in HIV positive female patients than in males [48]. Furthermore, lower rates of risk factor modification due to lower risk perception in women compared to men [49] can contribute to gender differences in CVD among HIV positive adults. Sobieszczyk et al. in a study of 2393 women (1725 HIV positive and 668 HIV negative), reported that nearly one-third of HIV positive women met criteria for MetS diagnosis, and that MetS prevalence was significantly higher among women living with an HIV diagnosis compared to those with a negative HIV status (33% vs. 22%, $p < 0.0001$) [50]. The authors also reported an increased prevalence of high triglycerides, low HDL, higher BMI, older age, and current smoking status as risk factors associated with higher MetS prevalence among HIV positive women compared to HIV negative women [50]. Prior studies show that estrogen reduction due to menopause is associated with weight gain, insulin resistance and central adiposity, and may contribute to an increased risk of hypertension, dyslipidemia, diabetes, and cardiovascular disease

Table 1 Baseline characteristics by metabolic syndrome status

Characteristic	Metabolic syndrome status					
	No MetS		MetS		Test statistics	
	N	%[a]	N	%[a]	Rao-Scott Chi-square statistic	*p* value
Sex						
Male	953	70	387	30	35.42	< 0.001***
Female	284	55	237	45		
Race/ethnicity						
White	304	66	164	34	4.63	0.100[ns]
Black	707	68	313	32		
Hispanic	226	62	147	38		
Age group (years)						
18–39	426	87	62	13	96.25	< 0.001***
40–49	339	64	182	36		
50–59	329	56	253	44		
≥ 60	143	54	127	46		
BMI (kg/m^2)						
< 25 (normal)	726	97	21	3	658.49	< 0.001***
25– < 30 (overweight)	386	60	255	40		
≥ 30 (obese)	125	26	348	74		
Education						
< High school	255	62	154	38	5.37	0.070[ns]
High school/equivalent	332	64	179	36		
> High school	649	69	291	31		
Insurance						
Private	307	65	160	35	13.91	< 0.01**
Public	542	63	321	37		
Ryan White only	341	73	126	27		
Unspecified	12	59	7	41		
None	32	83	7	17		
Poverty						
Above	561	65	288	35	0.18	0.670[ns]
Below	614	67	312	33		
Smoking status						
Never	550	64	300	36	16.48	< 0.001***
Former	207	59	147	41		
Current	475	73	172	27		
Binge drinking (30 days)						
No	1017	65	550	35	3.25	0.070[ns]
Yes	199	72	67	28		
HIV related characteristics						
ART Use						
No	31	76	12	24	2.21	0.140[ns]
Yes	1170	66	601	34		
ART use duration						
Not on ART	34	76	9	24	32.38	< 0.001***
< 5 years	3875	77	121	24		
5–9 years	241	69	109	31		
≥ 10 years	465	59	314	41		

Table 1 (continued)

Characteristic	Metabolic syndrome status					
	No MetS		MetS		Test statistics	
	N	%[a]	N	%[a]	Rao-Scott Chi-square statistic	*p* value
HIV diagnosis duration						
< 5 years	332	77	100	23	37.08	< 0.001***
5–9 years	290	71	117	28		
≥ 10 years	615	59	407	41		
Mean CD4 count (cells/µl)						
0–199	128	73	47	27	17.99	< 0.001***
200–349	178	75	65	25		
350–499	278	70	110	30		
≥ 500	616	61	382	39		
Viral load (copies/ml)						
< 200 (undetectable)	831	65	450	35	2.23	0.140[ns]
≥ 200	406	69	174	31		
Total	1237	100	624	100		

[a]Within a given level of the characteristic, some percentages may not add up to exactly 100 due to rounding

Significance Level: *p<0.05, **p<0.01, ***p<0.001, *ns* not significant (p > 0.05)

among postmenopausal women compared with premenopausal women [51]. Thus, HIV positive postmenopausal women are more likely to develop metabolic disorders not only from HIV related factors such as HAART but also from the consequences of hypoestrogenism. These metabolic changes to some extent may explain the increased risk of MetS among women, especially post-menopausal women [52]. We noted a similar age-related prevalence of MetS in older women in the current study (Table 3). Further research is needed to determine underlying mechanisms of the gender differences in MetS among PLWH.

While there were initial differences noted in the prevalence of MetS by HIV-specific variables, such as longer duration of HIV diagnosis, longer duration of ART use, and higher mean CD4 count, the logistic regression model did not reveal any significant impact of these factors. The initial significance of longer duration of HIV diagnosis and longer ART use may have been explained by age since many of the participants who had been diagnosed and have been taking ART therapy longer were also older. It is also important to note that other conditions or factors not considered in our current study may also be implicated in the odds of acquiring MetS among PLWH.

Study Limitations and Strengths

Our study had several strengths including the robust MMP sampling methodology, which is designed to achieve generalizability to HIV positive adults receiving medical care with weighted sampling. Medical chart reviews provided in-depth clinical data that allowed the measurement of various demographic and cardio-metabolic parameters. When combined with detailed patient interviews that provided extensive sociodemographic and other behavioral risk factors, we were able to measure and capture a wide array of potential confounders on MetS among PLWH.

Our study has certain limitations. First, MMP was not specifically designed to measure the prevalence of MetS. For our study, labs from abstracted patient charts were considered fasting if they were clearly marked as such in the medical record. A significant percentage of the labs were not used due to abnormal value (e.g., a glucose value of 101 mg/dL) and unknown fasting status. However, the majority of our study participants who met the criteria had either a diagnosis or were on prescription medication for these criteria (77% for glucose, 81% for triglyceride, and 91% for HDL). We tried to overcome this issue with the use of the well-accepted IDF rather than Adult Treatment Panel (ATP) III criteria, which relies less heavily on fasting lab status for the glucose criteria and allows for the inclusion of type II diabetes diagnoses. Another limitation is the extrapolation of waist circumference from BMI measure. Although we used an equation that has been found to be highly predictive of waist circumference from BMI with minimal error [38], its predictive power was less for women than for men. Waist circumference estimates derived from BMI may be less accurate for women than for men due to the shift in body fat distribution in middle-aged/older women [53]. However, the Bozeman et al. [17] equation does try to mitigate these limitations by using age-specific waist circumference equations for women. Several other known risk factors

Table 2 Odds of metabolic syndrome among PLWH

Characteristic	aOR	95% CI
Sex		
Male (*Ref*)	1.00	–
Female	2.24	1.69–2.97*
Race/ethnicity		
White (*Ref*)	1.00	–
Black	0.81	0.58–1.14^{ns}
Hispanic	1.52	0.98–2.35^{ns}
Age group (years)		
18–39	0.21	0.13–0.33*
40–49	0.80	0.55–1.16^{ns}
50–59	1.08	0.68–1.71^{ns}
≥ 60 (*Ref*)	1.00	–
Education		
< High school	1.51	1.00–2.27^{ns}
High school/equivalent	1.41	0.99–1.99^{ns}
> High school (*Ref*)	1.00	–
Poverty		
Above (*Ref*)	1.00	–
Below	0.79	0.57–1.10^{ns}
Smoking status		
Never (*Ref*)	1.00	–
Former	1.07	0.68–1.71^{ns}
Current	0.61	0.46–0.81*
ART use duration		
< 5 years (*Ref*)	1.00	–
5–9 years	1.11	0.59–2.09^{ns}
≥ 10 years	0.84	0.42–1.68^{ns}
HIV diagnosis duration		
< 5 years	0.68	0.35–1.32^{ns}
5–9 years	0.62	0.33–1.51^{ns}
≥ 10 years (*Ref*)	1.00	–
Mean CD4 count (cells/μl)		
0–199 (*Ref*)	1.00	–
200–349	0.84	0.48–1.47^{ns}
350–499	1.04	0.63–1.73^{ns}
≥ 500	1.50	0.90–2.50^{ns}
Current ART use		
No (*Ref*)	1.00	–
Yes	1.09	0.44–2.67^{ns}

aOR adjusted odds ratio, *95% CI* 95% confidence interval, *Ref* referent, *ns* not significant

Significance level: *significance based on 95% confidence interval

Table 3 Odds of metabolic syndrome stratified by sex

Characteristic	Men		Women	
	aOR	95% CI	aOR	95% CI
Race/ethnicity				
White (*Ref*)	1.00	–	1.00	–
Black	0.69	0.47–1.00^{ns}	1.33	0.67–2.66^{ns}
Hispanic	1.44	0.91–2.27^{ns}	2.17	0.82–5.78^{ns}
Age group (years)				
18-39	0.19	0.10–0.35*	0.27	0.12–0.62*
40-49	0.94	0.60–1.49^{ns}	0.62	0.31–1.25^{ns}
50-59	1.22	0.72–2.09^{ns}	0.82	0.40–1.68^{ns}
≥ 60 (*Ref*)	1.00	–	1.00	–
Education				
< High school	1.51	0.94–2.43^{ns}	1.52	0.82–2.80^{ns}
High school/equivalent	1.53	1.00–2.35^{ns}	1.21	0.67–2.18^{ns}
> High school (*Ref*)	1.00	–	1.00	–
Poverty				
Above (*Ref*)	1.00	–	1.00	–
Below	0.78	0.54–1.11^{ns}	0.86	0.48–1.56^{ns}
Smoking status				
Never (*Ref*)	1.00	–	1.00	–
Former	1.05	0.61–1.82^{ns}	1.10	0.52–2.32^{ns}
Current	0.48	0.34–0.66*	1.11	0.70–1.77^{ns}
ART use duration				
< 5 years (*Ref*)	1.00	–	1.00	–
5–9 years	1.17	0.49–2.76^{ns}	1.16	0.42–3.21^{ns}
≥ 10 years	0.94	0.38–2.34^{ns}	0.68	0.27–1.72^{ns}
HIV diagnosis duration				
< 5 years	0.74	0.31–1.76^{ns}	0.64	0.22–1.84^{ns}
5–9 years	0.72	0.34–1.52^{ns}	0.41	0.16–1.06^{ns}
≥ 10 years (*Ref*)	1.00	–	1.00	–
Mean CD4 count (cells/μl)				
0–199 (*Ref*)	1.00	–	–	1.00
200–349	0.66	0.36–1.20^{ns}	1.29	0.40–4.10^{ns}
350–499	1.06	0.56–2.00^{ns}	0.81	0.32–2.06^{ns}
≥ 500	1.42	0.83–2.42^{ns}	1.49	0.60–3.71^{ns}
Current ART use				
No (*Ref*)	1.00	–	1.00	–
Yes	1.39	0.26–7.45^{ns}	0.85	0.26–2.83^{ns}

aOR adjusted odds ratio, *95% CI* 95% confidence interval, *Ref* referent, *ns* not significant

Significance level: *significance based on 95% confidence interval

for MetS were not measured in our data. These include: diet, physical activity, family history for chronic diseases in MetS (hypertension, diabetes, and cardiovascular disease). As with any observational study, residual or uncontrolled confounding associated with these risk factors may have impacted our estimates. Finally, cross-sectional surveillance data was utilized from which causality cannot be inferred from the results.

Conclusions

Our study addressed the lack of available data on MetS on PLWH in the southern US. Thus, our study is the first population level estimate of the prevalence of MetS among PLWH in these four southern US states. This regional assessment is critical for the understanding of how to prioritize risk mitigation and primary care prevention services in an aging HIV population that is increasingly diagnosed with additional chronic diseases other than HIV itself. Given that PLWH are living longer, longitudinal data are warranted to assess long-term MetS risk and how MetS may impact mortality among PLWH. Since HIV care providers may also provide primary care to PLWH, our study highlights the need for HIV care providers to regularly screen and monitor chronic disease risk factors if not already doing so. Additionally, intervention programs that promote and encourage healthy lifestyle such as physical activity and nutritional counseling should be offered to PLWH as part of an integrated HIV care during clinic visits.

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Compliance with Ethical Standards

Conflict of interest The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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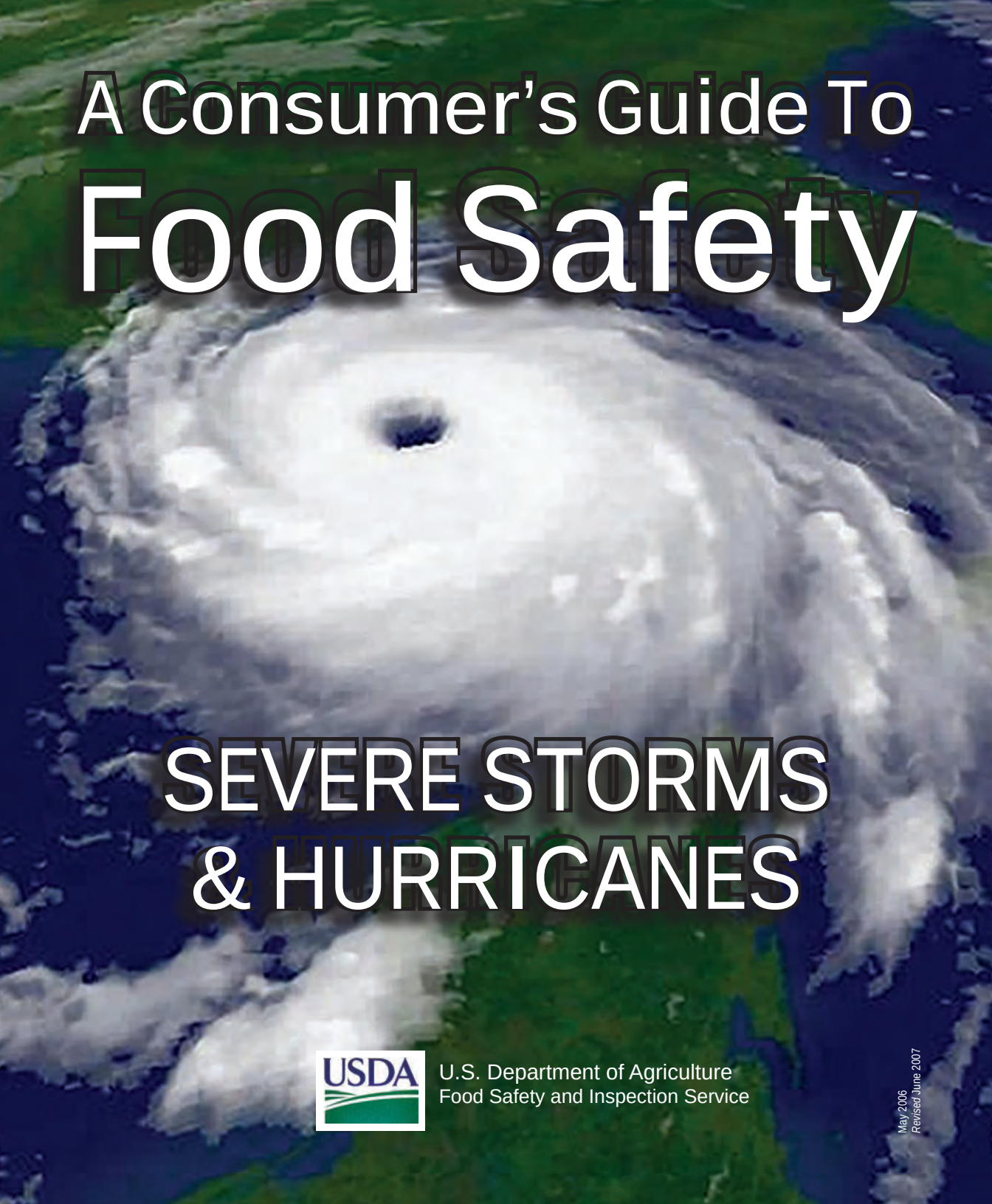


A Consumer's Guide To Food Safety

SEVERE STORMS & HURRICANES

U.S. Department of Agriculture
Food Safety and Inspection Service

May 2006
Revised June 2007

Food Safety During An Emergency

Did you know that a flood, fire, national disaster, or the loss of power from high winds, snow, or ice could jeopardize the safety of your food? Knowing how to determine if food is safe and how to keep food safe will help minimize the potential loss of food and reduce the risk of food-borne illness. This Consumer's Guide will help you make the right decisions for keeping your family safe during an emergency.

Power Outages

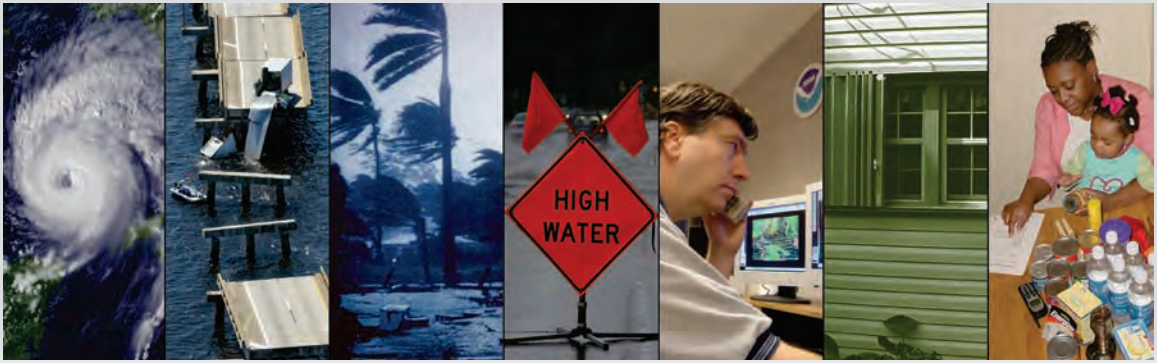
We practice basic safe food handling in our daily lives, but obtaining and storing food safely becomes more challenging during a power outage or natural disasters such as hurricanes and floods.

STEPS TO FOLLOW TO PREPARE FOR A POSSIBLE WEATHER EMERGENCY:

Keep an appliance thermometer in the refrigerator and freezer. An appliance thermometer will indicate the temperature in the refrigerator and freezer in case of a power outage and help determine the safety of the food.

- Make sure the freezer is at 0 °F (Fahrenheit) or below and the refrigerator is at 40 °F or below.
- Freeze containers of water for ice to help keep food cold in the freezer, refrigerator, or coolers after the power is out.
- Freeze refrigerated items such as leftovers, milk, and fresh meat and poultry that you may not need immediately-this helps keep them at a safe temperature longer.
- Plan ahead and know where dry ice and block ice can be purchased.
- Store food on shelves that will be safely out of the way of contaminated water in case of flooding.
- Have coolers on hand to keep refrigerator food cold if the power will be out for more than 4 hours. Purchase or make ice cubes and store in the freezer for use in the refrigerator or in a cooler. Freeze gel packs ahead of time for use in coolers.
- Group food together in the freezer—this helps the food stay cold longer.

Photos Courtesy of National Oceanic & Atmospheric Administration/Department of Commerce



STEPS TO FOLLOW DURING AND AFTER THE WEATHER EMERGENCY:

- Never taste a food to determine its safety!
- Keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature.
- The refrigerator will keep food safely cold for about 4 hours if it is unopened. A full freezer will hold the temperature for approximately 48 hours (24 hours if it is half full and the door remains closed).
- Food may be safely refrozen if it still contains ice crystals or is at 40 °F or below.
- Obtain block ice or dry ice to keep your refrigerator and freezer as cold as possible if the power is going to be out for a prolonged period of time. Fifty pounds of dry ice should hold an 18-cubic-foot full freezer for 2 days.
- If the power has been out for several days, then check the temperature of the freezer with an appliance thermometer or food thermometer. If the food still contains ice crystals or is at 40 °F or below, the food is safe.
- If a thermometer has not been kept in the freezer, then check each package of food to determine its safety. If the food still contains ice crystals, the food is safe.
- Discard refrigerated perishable food such as meat, poultry, fish, soft cheeses, milk, eggs, leftovers, and deli items after 4 hours without power.
- **When in Doubt, Throw it Out!**

Safety of Food in Containers Exposed to Flood Waters

HOW TO DETERMINE WHAT FOOD TO KEEP OR DISCARD

- Do not eat any food that may have come into contact with flood water.
- Discard any food that is not in a waterproof container if there is any chance that it has come into contact with flood water. Food containers that are not waterproof include those with screw-caps, snap lids, pull tops, and crimped caps. Also, discard cardboard juice/milk/baby formula boxes and home canned foods if they have come in contact with flood water, because they cannot be effectively cleaned and sanitized.
- Inspect canned foods and discard any food in damaged cans. Can damage is shown by swelling, leakage, punctures, holes, fractures, extensive deep rusting, or crushing/denting severe enough to prevent normal stacking or opening with a manual, wheel-type can opener.

POTS, PANS, DISHES, AND UTENSILS:

- Thoroughly wash metal pans, ceramic dishes, and utensils (including can openers) with soap and water, using hot water if available. Rinse and then sanitize them by boiling in clean water or immersing them for 15 minutes in a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water (or the cleanest, clearest water available).

COUNTERTOPS:

- Thoroughly wash countertops with soap and water, using hot water if available. Rinse and then sanitize them by applying a solution of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water (or the cleanest, clearest water available). Allow to air-dry.

STEPS TO SALVAGE ALL-METAL CANS AND RETORT POUCHES

Undamaged, commercially prepared foods in all-metal cans and retort pouches (for example, flexible, shelf-stable juice or seafood pouches) can be saved if you do the following:

- Remove the labels, if they are the removable kind, since they can harbor dirt and bacteria.
- Thoroughly wash the cans or retort pouches with soap and water, using hot water if it is available.
- Brush or wipe away any dirt or silt.
- Rinse the cans or retort pouches with water that is safe for drinking, if available, since dirt or residual soap will reduce the effectiveness of chlorine sanitation.
- Then, sanitize them by immersion in one of the two following ways:
    - Place in water and allow the water to come to a boil and continue boiling for 2 minutes, or

    - Place in a freshly made solution consisting of 1 tablespoon of unscented, liquid chlorine bleach per gallon of drinking water (or the cleanest, clearest water available) for 15 minutes.
- Air-dry cans or retort pouches for a minimum of 1 hour before opening or storing.
- If the labels were removable, then re-label your cans or retort pouches, including the expiration date (if available), with a marker.
- Food in reconditioned cans or retort pouches should be used as soon as possible, thereafter.
- Any concentrated baby formula in reconditioned, all-metal containers must be diluted with clean, drinking water.

SAFETY OF DRINKING WATER IF FLOODING OCCURS

- Use bottled water that has not been exposed to flood waters if it is available.
- If you don't have bottled water, you should boil water to make it safe. Boiling water will kill most types of disease-causing organisms that may be present. If the water is cloudy, filter it through clean cloths or allow it to settle, and draw off the clear water for boiling. Boil the water for one minute, let it cool, and store it in clean containers with covers.
- If you can't boil water, you can disinfect it using household bleach. Bleach will kill some, but not all, types of disease-causing organisms that may be in the water. If the water is cloudy, filter it through clean cloths or allow it to settle, and draw off the clear water for disinfection. Add 1/8 teaspoon (or 8 drops) of regular, unscented, liquid household bleach for each gallon of water, stir it well and let it stand for 30 minutes before you use it. Store disinfected water in clean containers with covers.
- If you have a well that has been flooded, the water should be tested and disinfected after flood waters recede. If you suspect that your well may be contaminated, contact your local or State health department or agriculture extension agent for specific advice.

Food Safety: Removing Odors from Refrigerators & Freezers

Refrigerators and freezers are two of the most important pieces of equipment in the kitchen for keeping food safe. We are instantly reminded of their importance when the power goes off, flooding occurs, or the unit fails, causing food to become unsafe and spoil. The odors that develop when food spoils can be difficult to remove. Use this information to learn how to remove odors from units or how to safely discard an affected unit.

TO REMOVE ODORS FROM REFRIGERATORS AND FREEZERS

If food has spoiled in a refrigerator or freezer and odors from the food remain, they may be difficult to remove. The following procedures may help but may have to be repeated several times.

- Dispose of any spoiled or questionable food.
- Remove shelves, crispers, and ice trays. Wash them thoroughly with hot water and detergent. Then rinse with a sanitizing solution (1 tablespoon unscented, liquid chlorine bleach per gallon of water).
- Wash the interior of the refrigerator and freezer, including the door and gasket, with hot water and baking soda. Rinse with sanitizing solution as above.
- Leave the door open for about 15 minutes to allow free air circulation.

If odor remains, try any or all of the following:

- Wipe inside of unit with equal parts vinegar and water. Vinegar provides acid which destroys mildew.
- Leave the door open and allow to air out for several days.
- Stuff both the refrigerator and freezer with rolled newspapers. Close the door and leave for several days. Remove paper and clean with vinegar and water.
- Sprinkle fresh coffee grounds or baking soda loosely in a large, shallow container in the bottom of the refrigerator and freezer.
- Place a cotton swab soaked with vanilla inside the refrigerator and freezer. Close door for 24 hours. Check for odors.
- Use a commercial product available at hardware and housewares stores. Follow the manufacturer's instructions.

IF ODORS REMAIN

If odors cannot be removed, then the refrigerator or freezer may need to be discarded. If you need to discard the refrigerator or freezer, discard it in a safe manner:

- "Childproof" old refrigerators or freezers so children do not get trapped inside. The surest way is to take the door off.
- If the door will not come off, chain and padlock the door permanently and close tightly, or remove or disable the latch completely so the door will no longer lock when closed.

It is unlawful in many jurisdictions to discard old refrigerators or freezers without first removing the door.

Depending on where you live, your appliance will be picked up by your solid waste provider, a recycler, a retailer (if you buy a new unit), or program sponsored by local or regional utilities.

Refrigerator Foods

WHEN TO SAVE AND WHEN TO THROW IT OUT

FOOD	Held above 40 ºF for over 2 hours
MEAT, POULTRY, SEAFOOD	
Raw or leftover cooked meat, poultry, fish, or seafood; soy meat substitutes	Discard
Thawing meat or poultry	Discard
Meat, tuna, shrimp, chicken, or egg salad	Discard
Gravy, stuffing, broth	Discard
Lunchmeats, hot dogs, bacon, sausage, dried beef	Discard
Pizza – with any topping	Discard
Canned hams labeled "Keep Refrigerated"	Discard
Canned meats and fish, opened	Discard
CHEESE	
Soft Cheeses: blue/bleu, Roquefort, Brie, Camembert, cottage, cream, Edam, Monterey Jack, ricotta, mozzarella, Muenster, Neufchatel, queso blanco, queso fresco	Discard
Hard Cheeses: Cheddar, Colby, Swiss, Parmesan, provolone, Romano	Safe
Processed Cheeses	Safe

FOOD	Held above 40 ºF for over 2 hours
Shredded Cheeses	Discard
Low-fat Cheeses	Discard
Grated Parmesan, Romano, or combination (in can or jar)	Safe
DAIRY	
Milk, cream, sour cream, buttermilk, evaporated milk, yogurt, eggnog, soy milk	Discard
Butter, margarine	Safe
Baby formula, opened	Discard
EGGS	
Fresh eggs, hard-cooked in shell, egg dishes, egg products	Discard
Custards and puddings	Discard
CASSEROLES, SOUPS, STEWS	Discard
FRUITS	
Fresh fruits, cut	Discard
Fruit juices, opened	Safe
Canned fruits, opened	Safe
Fresh fruits, coconut, raisins, dried fruits, candied fruits, dates	Safe
SAUCES, SPREADS, JAMS	
Opened mayonnaise, tartar sauce, horseradish	Discard if above 50 °F for over 8 hrs.
Peanut butter	Safe
Jelly, relish, taco sauce, mustard, catsup, olives, pickles	Safe
Worcestershire, soy, barbecue, Hoisin sauces	Safe
Fish sauces (oyster sauce)	Discard
Opened vinegar-based dressings	Safe
Opened creamy-based dressings	Discard
Spaghetti sauce, opened jar	Discard
BREAD, CAKES, COOKIES, PASTA, GRAINS	
Bread, rolls, cakes, muffins, quick breads, tortillas	Safe
Refrigerator biscuits, rolls, cookie dough	Discard
Cooked pasta, rice, potatoes	Discard
Pasta salads with mayonnaise or vinaigrette	Discard
Fresh pasta	Discard
Cheesecake	Discard
Breakfast foods –waffles, pancakes, bagels	Safe
PIES, PASTRY	
Pastries, cream filled	Discard
Pies – custard, cheese filled, or chiffon; quiche	Discard
Pies, fruit	Safe
VEGETABLES	
Fresh mushrooms, herbs, spices	Safe
Greens, pre-cut, pre-washed, packaged	Discard
Vegetables, raw	Safe
Vegetables, cooked; tofu	Discard
Vegetable juice, opened	Discard
Baked potatoes	Discard
Commercial garlic in oil	Discard
Potato Salad	Discard

Frozen Food

WHEN TO SAVE AND WHEN TO THROW IT OUT

FOOD	Still contains ice crystals and feels as cold as if refrigerated	Thawed Held above 40 ºF for over 2 hours
MEAT, POULTRY, SEAFOOD		
Beef, veal, lamb, pork, and ground meats	Refreeze	Discard
Poultry and ground poultry	Refreeze	Discard
Variety meats (liver, kidney, heart, chitterlings)	Refreeze	Discard
Casseroles, stews, soups	Refreeze	Discard
Fish, shellfish, breaded seafood products	Refreeze However, there will be some texture and flavor loss	Discard
DAIRY		
Milk	Refreeze May lose some texture	Discard
Eggs (out of shell) and egg products	Refreeze	Discard
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semi-soft)	Refreeze May lose some texture	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Casseroles containing milk, cream, eggs, soft cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
FRUITS		
Juices	Refreeze	Refreeze. Discard if mold, yeasty smell, or sliminess develops
Home or commercially packaged	Refreeze Will change texture and flavor	Refreeze. Discard if mold, yeasty smell, or sliminess develops
VEGETABLES		
Juices	Refreeze	Discard after held above 40 ºF for 6 hours
Home or commercially packaged or blanched	Refreeze May suffer texture and flavor loss	Discard after held above 40 ºF for 6 hours
BREADS, PASTRIES		
Breads, rolls, muffins, cakes (without custard fillings)	Refreeze	Refreeze
Cakes, pies, pastries with custard or cheese filling	Refreeze	Discard

FOOD	Still contains ice crystals and feels as cold as if refrigerated	Thawed Held above 40 °F for over 2 hours
BREADS, PASTRIES		
Pie crusts, commercial and homemade bread dough	Refreeze Some quality loss may occur	Refreeze Quality loss is considerable
OTHER		
Casseroles – pasta, rice based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze
Breakfast items –waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty items (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

Got Food Safety Questions?

ASK KAREN!

The FSIS automated response system can provide food safety information 24/7. Visit us at *AskKaren.gov*

USDA Meat and Poultry HOTLINE

1-888-MPHotline

(1-888-674-6854)

English & Spanish

10:00-4:00 ET

TTY: 1-800 256-7072

Food Safety Contacts for Areas Affected by Severe Storms and Hurricanes

FSIS

USDA's Food Safety and Inspection Service

Consumers with food safety questions can phone the toll-free **USDA Meat and Poultry Hotline** at **1-888-MPHotline** (1-888-674-6854); TTY, 1-800-256-7072.

The Hotline is available in English and Spanish and can be reached from 10 a.m. to 4 p.m. (ET) Monday through Friday. Recorded food safety messages are available 24 hours a day.

Consumers can also ask safe food handling questions by logging on to FSIS' online automated response system called "Ask Karen," on the Food Safety and Inspection Service's Web site: *www.fsis.usda.gov*

E-mail inquiries can be directed to *MPHotline.fsis@usda.gov*.

Additional information about USDA's food safety efforts can be accessed on the FSIS Web site at *www.fsis.usda.gov*

CDC

Centers for Disease Control and Prevention

- Call 1-800-CDC-INFO or 1-800-232-4636, TTY 1-888-232-6348, for information on hazards, safe clean up, and preventing illness and injury. Available in English and Spanish, 24 hours a day, 7 days a week. *www.cdc.gov*

FDA

Food and Drug Administration

- For information on safe food handling for foods other than meat, poultry, or egg products, call FDA's toll-free information line at 1-888- SAFEFOOD or 1-888-723-3366. *www.cfsan.fda.gov*
- FDA emergency number, staffed 24 hours a day, 1-866-300-4374.

OTHER

Environmental Protection Agency

EPA's Safe Drinking Water Hotline: 1-800-426-4791
www.epa.gov

Federal Emergency Management Agency (FEMA)

Food and Water in an Emergency
www.fema.gov

General Disaster Assistance Site: *www.foodsafety.gov*