This presentation has been developed for:

- **9-1-1 Public Safety Answering Points** (PSAPs)
- EMS agencies and systems
- Law Enforcement agencies
- Fire Service agencies
- Emergency Managers
- **First Responders** (For the purposes of this presentation, “First Responders” means pre-hospital EMS, Law Enforcement, and Fire Service.)
The source of this information is the CDC, unless otherwise identified. **Guidance may change.**

Please check the CDC website frequently for updates:

[www.cdc.gov/vhf/ebola/index.html](http://www.cdc.gov/vhf/ebola/index.html)
First Responder Ebola Briefing + Personal Protective Equipment (PPE)
SECTION 1 – Overview of the Ebola Virus Disease (EVD)
Ebola Virus Disease (EVD)

Ebola is a virus that has worldwide consequences.

MAP SHOWING RECENT + ALL CASES WORLDWIDE

SOURCE: CDC
who.int/csr/disease/ebola/maps/en/
As First Responders, you are on the FRONT LINE of combating this disease should we have cases in Louisiana.
• Experts tell us Ebola poses **no significant risk** to the **United States** . . .

• However, **Louisiana** is **prepared** for a possible threat should one occur.
The purpose of this presentation is to provide you as a Louisiana First Responder with . . .
An overview of the Ebola virus:

- Facts
- Symptoms
- Care
Purpose

Share with you . . .

• What you need to **know** to **protect yourself** in the field.

• **When, what and how to use Personal Protective Equipment (PPE).**
Ebola (previously known as Ebola hemorrhagic fever) is a severe, often fatal disease in humans and nonhuman primates (such as monkeys, gorillas and chimpanzees).

Key facts

Ebola . . .

• Was first discovered in 1976 in the Democratic Republic of the Congo.

• Since then, outbreaks have appeared sporadically in Africa.

SOURCE: CDC
www.cdc.gov/vhf/ebola/outbreaks/history/chronology.htm
and www.cdc.gov/vhf/ebola/about.html
Key facts

The natural reservoir host of the Ebola virus has not yet been identified.
Scientists believe the first patient became infected through contact with an infected animal such as a fruit bat or nonhuman primate.
Key facts

The 2014 Ebola epidemic is the largest in history, affecting multiple countries in West Africa and now with cases presenting in the United States.

SOURCE: CDC
Currently three (3) African countries – Guinea, Liberia and Sierra Leone have severe outbreaks of Ebola.
Key facts

- Other countries – Nigeria, Senegal and Mali – have reported cases.
- The good news is the World Health Organization (WHO) has officially declared the end of the outbreak in Senegal and Nigeria as of October 2014.

SOURCE: CDC
Key facts

As of **November 13, 2014** there have been:

- **14,098 cases** of Ebola
- **5,160 deaths**

SOURCE: CDC
Key facts

As of **November 13, 2014**, only **four (4) cases** have been reported in the **U.S.; one (1) resulting in death.**

SOURCE: CDC
Transmission

You can only get Ebola from unprotected direct contact (e.g., broken skin or mucous membrane of the eyes, nose or mouth) with . . .

SOURCE: CDC
www.cdc.gov/vhf/ebola/transmission/index.html
Transmission

- **Blood, body fluids** or **skin** of a **person** or **animal** who is sick with or has died from Ebola, **OR** . . .
- Through **direct contact** with **contaminated objects** and/or **surfaces**.

**SOURCE:** CDC
www.cdc.gov/vhf/ebola/transmission/index.html
The risk of direct skin contact is lower than the risk from exposure to blood or body fluids.
Transmission

Avoid direct contact with body fluids.

• “Body fluids” include (but are not limited to):
  - Blood
  - Urine
  - Saliva
  - Feces
  - Vomit
  - Sweat
  - Semen
  - Breast milk

SOURCE: CDC
www.cdc.gov/vhf/ebola/transmission/index.html
Transmission

• The current strain of the Ebola virus has not been shown to be transmitted in the air.

SOURCE: CDC
www.cdc.gov/vhf/ebola/transmission/index.html
Transmission

• In addition to direct unprotected contact, in West Africa Ebola may spread as a result of handling wild animals hunted for food and infected bats.

– Only wild animals in West Africa have been shown to carry Ebola – none in the U.S.

SOURCE: CDC
www.cdc.gov/vhf/ebola/transmission/index.html
Transmission

• Once a patient has recovered from Ebola, he/she can no longer spread the virus.

• However, Ebola virus has been found in semen for up to three (3) months.

  – Abstinence from sex (including oral sex) – or the use of condoms if abstinence is not possible – is recommended for up to three (3) months.

SOURCE: CDC
www.cdc.gov/vhf/ebola/transmission/index.html
Incubation

The **incubation period** for Ebola, from **exposure** to when signs or **symptoms appear**, ranges from **2 to 21 days** (most commonly **8 to 10 days**).

Incubation

• Any Ebola patient **WITH signs or symptoms** (symptomatic) should be considered **infectious**.

• **Ebola patients without symptoms** (asymptomatic) **ARE NOT** contagious.

Initial symptoms occur after about **five (5) days**.

- Sudden **fever**
- **Chills**
- **Muscle aches**
- **Diarrhea**
- **Nausea**
- **Vomiting**
- **Abdominal pain**

Initial signs + symptoms

Other symptoms may develop such as:

– Chest pain
– Shortness of breath
– Headache
– Confusion
– Fatigue

Initial signs + symptoms

Symptoms may become increasingly severe and may include:

• **Jaundice** (yellow skin)
• Severe **weight loss**
• **Bleeding** inside and outside the body
• **Shock**
• **Multi-organ failure**
EVD progression

**RISK**

**EARLY STAGES:** Low Viral Load

- Headache + fatigue + fever + muscle soreness

**Sudden high fever + vomiting blood + passive behavior**

**Bruising + brain damage + bleeding from nose + mouth + eyes + anus**

As viral load gets larger, risks increase.

**END OF DISEASE:**

- High Viral Load
- Loss of consciousness + seizures + massive internal bleeding + death

**SOURCE:** U.S. Centers for Disease and Control, BBC
Prevention

If a person is known or SUSPECTED to have Ebola:

• Wear appropriate PPE.
• Isolate the patient.
• Restrict contact with others.

SOURCE: CDC
www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html
Prevention

• **Avoid** aerosol-generating procedures.
  – If unavoidable, use **proper respiratory protection** (PAPR or N95).

• **Be diligent** in environmental **cleaning** and **disinfection** and **safe handling** of potentially contaminated materials.

SOURCE: CDC
www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html
Avoid **direct unprotected contact** with a person known or **SUSPECTED** to have Ebola **AND** any object or surfaces with which he/she may have had **direct contact**.
Prevention

There are two (2) ways to protect yourself and others from Ebola exposure:

• **Maintain distance.** Stay at least three (3) feet away from a person known or SUSPECTED to have Ebola **AND** the area of his/her care.

• Put on **PPE**.

SOURCE: CDC
SUIT UP. OR STAND BACK.
SECTION 2 – Personal Protective Equipment (PPE)
Safe environment requires knowledge and training.
Key questions

• What is proper PPE for First Responders?
• What PPE do you need to stay safe?
• When do you need it?
• How do you correctly put it on and take it off?
• And what do you do with it when once you’ve removed it?
This presentation will answer those questions and more...
First let’s set the **language** for discussing PPE . . .

- **Putting on PPE:** DONNING
- **Taking off PPE:** DOFFING
This is where it begins . . .
When the **risk** of Ebola is **elevated** in the community, **9-1-1 PSAPs** and other Call-Takers ask **screening questions** to determine if the caller has a **SUSPECTED** case of Ebola.
1. Do you have **fever**?

2. Are you a **resident** of – or have you **traveled** within the last **21 days** to – a country where an **Ebola outbreak** is occurring?

3. Have you been exposed to someone who is **known or SUSPECTED** to have Ebola?
If a caller answers **YES** to question 1 . . .

**AND** YES to 2 AND/OR 3 . . .

• Caller **MAY** be **SUSPECTED** of having Ebola.

• Those calls are then identified as a “**SUSPECTED Infectious Patient incident.**”
All dispatched responders will be told:

- “You are responding to a SUSPECTED Infectious Patient incident.”
- “First Responders should limit exposure at the scene.”
- “Full-body PPE REQUIRED to enter the scene.”
Once dispatched, local Law Enforcement (LE) and Fire Service and/or EMS will respond and head to the scene.
First Responders to arrive set a perimeter to secure the scene and ensure ONLY those in appropriate PPE enter the secured area.
“In the Fire Service it’s everyone’s first instinct to run in. During Ebola emergencies I think it’s very important for all of us to remember: Suit up. Or Stand back.”

– Curt Monte
Public Information Officer
Baton Rouge Fire Department
Who sets the standard for PPE?
29 CFR 1910.1030(d)(3)

(3) Personal protective equipment—(i) Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, lab-
PPE is “appropriate” ONLY if it . . .

. . . does NOT permit blood or other potentially infectious materials to pass through to or reach your work clothes, street clothes, undergarments, skin, eyes, mouth or mucous membranes under normal conditions of use and for the duration of time you will be suited up.

In addition to requirements set by OSHA, the Centers for Disease Control and Prevention (CDC) provides guidance on the proper PPE recommend for EMS, Law Enforcement and Fire Service agencies, hospitals and other healthcare providers and professionals.
The most recent guidance can be found at the CDC website
Buddy system

• Properly donning and doffing PPE requires a partnership – or buddy system.

• It’s a minimum two (2) person process.

Trained Observer | First Responder
EACH First Responder going into the patient care area MUST have:

• On proper PPE.

• A **Trained Observer** when *donning* and *doffing* PPE.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE
Principles of PPE:

• Donning
• Patient Care
• Doffing

• Training
• Practice
Principles of PPE

Donning

• PPE **must** be donned **correctly** and in the **proper order** before entering a **patient care area**.
• It should **not** be **modified** while in the patient care **area** or **adjusted** during patient care.
• Donning PPE must be **observed** by a **Trained Observer**.

**SOURCE: CDC** [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE

Donning

• If you add or modify PPE guidelines, consider risks/benefits.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE

During patient care

• PPE must be worn **correctly** for the duration of exposure.

• First Responders should perform **frequent alcohol-based hand rub** (ABHR) on gloved hands.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE

During patient care

• If a breach of PPE occurs, immediately move to the doffing area to assess, and . . .
  
  – Implement your departmental/agency exposure plan, if appropriate.

SOURCE: CDC www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html
Principles of PPE

Doffing

Doffing is when you are most at risk.

- Remove PPE slowly and deliberately.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE

Doffing

Doffing requires:

• A structured **step-by-step** and specifically **sequenced** removal process.

• Trained Observer.

• Designated area for removal.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Principles of PPE

Donning/Doffing

Doing it **right** requires **training** and **practice**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Role of the Trained Observer
Trained Observer should be:

- **Knowledgeable:**
  - About all **PPE** recommended in department or agency protocols.
  - Correct donning and **doffing** procedures, including disposal.
  - Department or agency *Exposure Management Plan* in the event of an unintentional break in procedure.
Trained Observer should be:

- **Qualified** to provide:
  - Guidance.
  - **Technique** recommendations.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Sole responsibility of the Trained Observer is to ensure adherence to procedure.
Trained Observer

The Trained Observer should:

• **Monitor** donning and doffing processes.
• Ensure **adherence to protocols** for donning, doffing and securing used PPE.
• Provide **assistance** if needed.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Trained Observer

The Trained Observer should NOT:

• Enter the room of a patient known or suspected to have Ebola; OR

• Participate in Ebola patient-care activities.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
When do you need PPE . . .

Appropriate PPE is **REQUIRED:**

- If you are within **three (3) feet** of a person **known** or **SUSPECTED** to have Ebola.
- And/or **objects** or **surfaces** with which he/she may have had **direct contact.**
- And/or in the **patient care area.**
When do you need PPE . . .

Continue wearing PPE until you are **NO longer in direct contact** with the **patient OR objects OR in areas that may be contaminated.**
CDC-recommended PPE for First Responders . . .
First Responder PPE

1. TWO PAIRS OF SINGLE-USE (DISPOSABLE) NITRILE EXAM GLOVES
   (At a minimum, outer gloves should have extended cuffs.)

2. COVERALLS (WITH OR WITHOUT INTEGRATED SOCKS) AND APRON AND BOOT or SHOE COVERS
   (SHOE COVERS ACCEPTABLE ONLY IF COVERALLS HAVE INTEGRATED SOCKS)
   (All should be single-use [disposable] fluid-resistant or impermeable.)

3. PAPR (WITH FULL FACE SHIELD, HELMET OR HEADPIECE) AND SINGLE-USE (DISPOSABLE) HOOD (IF PAPR IS REUSABLE)
   OR
   N95 RESPIRATOR AND SINGLE-USE (DISPOSABLE) HOOD AND SINGLE-USE FACE SHIELD
   (Fully cover front and sides of face.)
Let’s look closer . . .
You have a choice . . .

**NIOSH-certified Powered Air Purifying Respirators (PAPR)**
- With external belt-mounted blower unit.
- With a self-contained filter and blower unit integrated inside the helmet.

**NIOSH-certified Fit-tested, disposable N95 respirator**
• While the **current strain of Ebola** is not an airborne pathogen – in other words you **can NOT** get it from the air – a mask or respirator is **recommended** as part of your PPE . . .

• To prevent you from getting **any droplets** from a **sneeze** or **cough** or any thing that could splash in your **mouth** or **nose**.
PAPR and N95 respirators

Both must be:

• NIOSH-certified.
• Fluid-resistant or impermeable.

PAPR and N95 respirators

Both MUST comply with all elements of the OSHA Respiratory Protection Standard found in 29 CFR 1910.134 including:

• Fit testing
• Medical evaluation
• Training

SOURCE: OHSA
oshaweb.owadisp.show_document?p_id=12716&p_table=standards
PAPR

• PAPR MUST have a full face shield, helmet or headpiece.

If PAPR has a **reusable** helmet or headpiece, it **must** be covered with a **single-use** (disposable) **hood**.

- Hood should extend to the **shoulders** and **fully cover** the **neck**.
- Hood must be **compatible** with the selected PAPR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
PAPR with a self-contained filter and blower unit integrated inside the helmet is preferred.
PAPR with an external belt-mounted blower unit requires adjustment of the donning and doffing sequence.

SOURCE: CDC  [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
N95 respirator

- MUST be combined with a single-use (disposable) hood extending to the shoulders;
- AND a single use (disposable) full face shield.

- That fully covers front and sides of face.
CAUTION – N95 respirator users –

• Do **not** inadvertently touch your face **under** the face shield.
  – Avoid touching the **front surface** of the face shield.

• A full face shield may **not** provide full-face protection if there is **significant** splashing.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Coveralls

Coveralls should be . . .

• **Without** an integrated hood.
• **With** or **without** integrated socks.
• **Single-use** *(disposable)* **fluid-resistant** or **impermeable**.

SOURCE: CDC  [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Impermeable

- Impermeable simply means to block any type of liquid or fluid from reaching your under clothing or skin.
Coveralls

• Coveralls with **thumb hooks** help to secure **sleeves** over inner **glove** to prevent skin exposure.

• **Taping** can be used but may make **doffing more difficult**, increasing the **risk** of exposure.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Taping

If tape is used, be sure to use the buddy tab method . . .

• Folding end of tape into a tab to facilitate later removal.
Gloves

• **Two (2) pairs** of *gloves* should be worn.
• Gloves should **fit comfortably** and **properly**, not **too small or too large**.

Gloves should be single-use (disposable) nitrile examination gloves with extended cuffs.

• At a minimum, outer gloves should have extended cuffs.
Gloves

Using **different colored gloves** when double gloving makes it **easier to see** contamination, cuts or tears . . .

• And is a **visual reminder** of where you are in the donning and doffing process.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Even though the donning process calls for **DOUBLE gloving**, you will **need several pairs of gloves** . . .

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Gloves

If gloves are **damaged** during your work:

- **STOP work.**
- **Check for exposure.**
  - Move to **doffing area** if appropriate.
- **Change gloves immediately.**

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
And, glove *changes* occur within the *doffing* process.
You have a choice . . .

Boot covers OR Shoe covers

– Single-use (disposable) fluid-resistant or impermeable.
– Must extend to mid-calf.

– Single-use (disposable) fluid-resistant or impermeable.
– Acceptable ONLY if used in combination with a coverall that has integrated socks.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
The last piece of recommended First Responder PPE is an apron.

- It provides additional protection if a known or SUSPECTED Ebola patient has vomiting or diarrhea.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
The apron should be:

- **Single-use** (disposable) fluid-resistant or impermeable.
- **Cover your torso** to the level of mid-calf.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
If wearing **PAPR**, consider selecting an apron that **ties behind the neck** to facilitate **removal** during the **doffing process**.

*SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)*
CDC-recommended PPE for Trained Observers...
Trained Observer PPE

Each piece should be single-use (disposable).

- **COVERALLS** (Without integrated hood; fluid-resistant or impermeable)
- **FULL FACE SHIELD** (Fully cover front and sides of face)
- **DOUBLE GLOVES** (Nitrile examination gloves with extended cuffs)
- **SHOE COVERS** (Fluid-resistant or impermeable)

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
YOU have responsibilities

While OHSA and the CDC provide regulatory and implementation guidance – YOU, too, have responsibilities . . .
YOU have responsibilities

- Know the proper PPE required.
- Don and doff **carefully, thoughtfully** and **correctly**.
- Demonstrate competency.
- Ensure that you **always** have a Trained Observer when donning and doffing.
PAPR with an external belt-mounted blower unit full suit
N95 respirator full suit
Getting ready to don, doff and secure used PPE
Let’s talk about what’s last, first . . .
• DECON is an important part of the doffing process.

• When you doff PPE in the field you need supplies to DECON as you go.

• Be sure you have what you need BEFORE donning PPE.
What you need to don, doff and secure used PPE . . .

- A sprayer with household bleach solution that is one (1) part household bleach and nine (9) parts water (commonly referred to as a 10% household bleach solution).

- Two (2) buckets:
  - One (1) with clear water.
  - One (1) with 10% household bleach solution.
What you need . . .

- A small plastic disposable kiddie pool or tub.
- Two (2) disposable chairs or stools, OR chairs or stools that can be DECONed after use.
- A box of single-use (disposable) nitrile examination gloves with extended cuffs.
What you need . . .

- A box of **EPA-registered disinfectant wipes** or **alcohol-based hand rub** (ABHR).
- Plastic disposable **tarp**.
- Scene tape.
- Duct tape.
What you need . . .

- Large (33 gallon or larger) leak-proof plastic bags.
- Knife.
- An appropriate container for used (contaminated) sharps.
What you need . . .

- Donning and Doffing Checklists.
- Most importantly you need your Trained Observer!

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Establish work zones

• **Cordon off** an area in which to work.
  – Ensure space allows a **clear separation** between **clean** and **potentially contaminated areas**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Establish work zones

- You may want this area to be **behind** the **building** or **behind** your **vehicle** to block access of **bystanders** or **media**.
Establish work zones

Purpose of work zones is to . . .

• Minimize the transfer of hazardous substances from the site.
• Establish security and physical barriers to exclude unnecessary personnel.
• Optimize number of personnel for effective operations.
Establish work zones

**Purpose** of work zones is to . . .

- Create control points to **regulate access**.
- Operate with intent to **reduce exposures** and **eliminate** airborne dispersion.
- Perform **decontamination** (DECON).
Establish work zones

- **Hot Zone**
  - Contaminated area.

- **Warm Zone**
  - Contamination reduction zone (doffing) or DECON area.
Establish work zones

- **Cold Zone**
  - Clean area for support equipment, traffic limited, normal work PPE, **no contaminated PPE** worn or stored in this area.

- **Safe Zone**
  - Facilitates a nuisance-**free area**.
Establish work zones

• NOTE: Doffing should be located as close to the Hot Zone as safely feasible.
Doffing: Warm Zone

In this reserved area, spread out a plastic disposable tarp and a small plastic disposable kiddie pool or tub.
Doffing: Warm Zone

• Place a large (33 gallon or larger) leak-proof plastic bag in the small plastic disposable kiddie pool or tub.

• These will be used during doffing and to secure used PPE.
Throughout this presentation, **EPA-registered disinfectant wipes** are referenced.

- These are wipes impregnated with an **EPA-registered hospital disinfectant** with a **label claim** of potency at least equivalent to that for a **non-enveloped virus** (e.g., norovirus, rotavirus, adenovirus, poliovirus).

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
SECTION 3 – 
Donning using PAPR or N95
Outcomes

Whether using PAPR or N95 respirator, when responding to a **known** or **SUSPECTED** case of Ebola there should be . . .

- **NO** exposed skin or hair.
- **Full-body coverage** so that you are maximally protected from exposure, including “splash.”

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
“Splash” occurs when a person known or SUSPECTED of having Ebola sneezes or coughs or vomits or exposes you in any other way to his or her blood or other body fluids.
• Donning with **PAPR** is a **12-Step** process.

• Donning with **N95** is a **14-Step** process.
DONNING PPE: PAPR

12-Step process
The donning process is conducted under the guidance and supervision of a Trained Observer.
Engage Trained Observer

Using a **written checklist** and **verbal commands**, your Trained Observer . . .

• **Visually confirms** and **documents** each step of the donning process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Engage Trained Observer

• Assists with ensuring and verifying the integrity of your PPE ensemble.

• Ensures NO exposed skin or hair.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Remove personal clothing and items

- In a clean area, change into surgical scrubs OR disposable garments AND dedicated washable (plastic or rubber) footwear (with closed-toe and heels, and no holes).
- Remove watches, jewelry, cell phones, pens, pagers, etc.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Remove personal clothing and items

You should know that garments worn under PPE may not be reusable.

• Wear something that is disposable.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Inspect

- **Inspect PPE before donning** to ensure it is in serviceable condition and **not torn or damaged**.
- **Confirm all recommend PPE and needed supplies are available**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Inspect

• Confirm that your PPE is the correct size.

• Your Trained Observer reviews the donning sequence with you BEFORE beginning the donning process . . .
  – Reading aloud the checklist in a step-by-step fashion.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Perform hand hygiene

- Perform **hand hygiene** using **ABHR**.
- Allow hands to **dry before** moving to the **next step**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on **inner gloves**

- Put on your **first** pair of gloves. These are the **inner gloves**.
- Cuffs should **extend** as far up the arms as possible.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on boot or shoe covers

• Remember . . .
  – Shoe covers can be used ONLY IF your coveralls have integrated socks.
  – Boot covers should extend to mid-calf.

Put on coveralls

• **Ensure** the coverall is **large enough** to allow **unrestricted movement**; and . . .

• **Ensure** cuffs of **inner** gloves are tucked **under** the sleeves of the coverall.
Put on coveralls

- If tape is needed to secure sleeves over inner gloves, use buddy tabs to facilitate later removal.

SOURCE: CDC www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html
Put on coveralls

- If using PAPR with a self-contained filter and blower unit that is integrated inside the helmet and separate belt and battery unit . . .
  - Belt and battery unit must be put on prior to donning the coveralls so that both are contained under the coverall.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on coveralls

- If using PAPR with an external belt-mounted blower . . .
  - Blower and tubing must be on the outside of the coverall to ensure proper airflow.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on **outer** gloves

- Put on **outer** gloves with **extended cuffs**.
- Ensure cuffs are pulled **over the sleeves** of the coverall, extending as far up arms as possible.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on **outer** gloves

- Remember, using **different colored gloves** when double gloving makes it **easier** to see contamination, cuts or tears.
  - And is a **visual reminder** of where you are in the donning and doffing process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on respirator (PAPR)

- Put on PAPR.
  - It should have a full face shield, helmet or headpiece.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on respirator (PAPR)

- IF using PAPR with a **self-contained filter** and **blower unit** integrated **inside the helmet** . . .
  - You **MUST also** use a **single-use disposable hood**.
  - Hood **MUST** fully cover all **hair, neck and ears** and extend past your neck to your **shoulder**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Put on respirator (PAPR)

• IF using PAPR with an external belt-mounted blower unit and an attached reusable headpiece …
  – A single-use (disposable) hood that extends to the shoulders and that fully covers your neck must ALSO be used.
  – Again, be SURE the hood covers all of your hair and your ears and extends past your neck to your shoulders.
Put on outer apron  (if used)

- Put on full-body outer apron to provide **additional protection** to the **front** of the body against exposure to **body fluids or excrement** from the patient.

- Apron should extend to **mid-calf**.

*SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Verify

- Trained Observer verifies:
  - Donning process is **complete** and the **integrity** of the ensemble.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Verify

– First Responder is comfortable and . . .
  • Can extend arms.
  • Bend at the waist.
  • Has sufficient range of movement while all areas of the body remain covered.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Disinfect **outer** gloves  |  Step **12**

- Outer gloves are disinfected with ABHR and allowed to **dry prior** to patient contact.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/donning_01.html)
Donning using PAPR is COMPLETE.
DONNING PPE: N95

14-Step process
The first **6** steps of the **donning process** for **N95 respirator** users is the **same** as the donning process for **PAPR users**.
Engage Trained Observer

Like donning with a PAPR . . .

- The donning process for those using an **N95 respirator** is conducted under the **guidance and supervision** of a Trained Observer.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Engage Trained Observer

Using a **written checklist** and **verbal commands**, your Trained Observer . . .

- Visually confirms and **documents** each **step** of the donning process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Engage Trained Observer

- Assists with **ensuring** and **verifying** the **integrity** of your PPE ensemble.
- **Ensures NO exposed skin or hair.**

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Remove personal clothing and items

- In a clean area, change into surgical scrubs OR disposable garments AND dedicated washable (plastic or rubber) footwear (with closed-toe and heels, and no holes).
- Remove watches, jewelry, cell phones, pens, pagers, etc.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Remove personal clothing and items

You should know that garments worn under PPE may not be reusable.

• Wear something that is disposable.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Inspect

- Inspect PPE *before* donning to ensure it is in serviceable condition and *not* torn or damaged.
- Confirm all recommend PPE and needed supplies are available.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Inspect

- **Confirm** that your PPE is the correct size.
- **Your Trained Observer** reviews the donning sequence with you **BEFORE** beginning the donning process . . .
  - **Reading aloud** the checklist in a step-by-step fashion.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Perform hand hygiene

- Perform **hand hygiene** using **ABHR**.
- Allow hands to **dry** before moving to the **next** step.

**Step 4. Perform Hand Hygiene**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on **inner gloves**

- Put on your **first pair of gloves**. These are the **inner gloves**.
- Cuffs should **extend** as far up the arms as possible.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on boot or shoe covers

- Remember.
  - Shoe covers can be used **ONLY IF** your coveralls have integrated socks.
  - **Boot** covers should extend to mid-calf.

**Step 6**

*SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)*
Put on coveralls

At step 7, sequencing becomes a little different from donning using PAPR . . .

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on coveralls

• Put on coveralls.
  – Ensure the coverall is large enough to allow unrestricted movement; and . . .
  – Ensure cuffs of inner gloves are tucked under the sleeves of the coverall.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on coveralls

- If **tape** is needed to secure sleeves **over** inner gloves, use **buddy tabs** to facilitate later removal.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on N95 respirator

• Put on the N95 respirator.
Put on N95 respirator

• For a **secure fit** ensure:
  
  – **Top tie** or elastic band is *over* your head and **above** your ears.
  
  – **Bottom tie** or elastic band goes **along the back** of your neck **under** your ears.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on N95 respirator

• Complete a user seal check.
  – Adjust the mask so that it fits securely to the bridge of your nose and your face.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on hood

- Put **hood over** the N95 respirator.
- Hood **MUST** fully cover all **hair**, **neck** and **ears** and extend past your neck to your **shoulders**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on outer apron  
(if used)

• Put on **full-body outer apron** to provide **additional protection** to the **front** of the body against exposure to **body fluids** or **excrement** from the patient.

• Apron should extend to **mid-calf**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on **outer** gloves

- Put on **outer** gloves with **extended cuffs**.

- Ensure cuffs are pulled **over the sleeves** of the coverall, **extending as far up arms as possible**.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on **outer** gloves

- Remember, using **different colored gloves** when double gloving makes it **easier** to see contamination, cuts or tears.
  - And is a **visual reminder** of where you are in the donning and doffing process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Put on face shield

- Put on full face shield.
- Ensure it is placed **over** your N95 respirator AND the hood.
- This provides **additional protection** to the **front** and **sides** of your **face, skin and eyes**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Verify

- Trained Observer verifies:
  - Donning process is complete and the integrity of the ensemble.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Verify

– First Responder is comfortable and . . .
  • Can extend arms.
  • Bend at the waist.
  • Has sufficient range of movement while all areas of the body remain covered.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Disinfect **outer gloves**

- Outer gloves are disinfected with ABHR and allowed to **dry** prior to patient contact.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/donning_01.html)
Donning using an N95 respirator is COMPLETE.
Trained Observers don and **doff** PPE using the same procedures.
Law Enforcement (LE)
If you are Law Enforcement (LE), remember your job is to secure the scene and protect the perimeter.

If you MUST assist Medical Responders OR are going to be within three (3) feet of a person known or SUSPECTED to have Ebola – or direct contact with anything with which that person has had direct contact – you MUST put on PPE.
Remember, when you suit up . . .

- **LOCK** your gear in your car, including your *service weapon*.
- Remove anything that could *puncture* or *tear* your PPE, including your badge.
- You are **NO longer identifiable** as Law Enforcement.
- Be SURE there are **other LE personnel** on site to keep the perimeter secure.
SECTION 4 –
Doffing using PAPR or N95
• **Safely removing and properly disposing of PPE** is just as important as putting it on properly.
  – You MUST remove PPE CAREFULLY.

• **Doffing is your GREATEST risk of exposure.**
  – Take a **breath. Take your time.**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Doff at the PPE removal area you set up earlier.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
DECON: Prepare to doff PPE

Before entering the PPE removal area, inspect and disinfect any visible contamination on PPE including gloved hands using an EPA-registered disinfectant.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html]
DECON: Prepare to doff PPE

Step into the pool and into the large (33 gallon or larger) leak-proof plastic bag.
DECON: Prepare to doff PPE

Remove any **visible contamination** on your PPE using the **10% household bleach solution** you prepared earlier.

- **One (1) part** household bleach and **nine (9) parts water**.
DECON: Prepare to doff PPE

• One common (and improper) approach to decontamination (DECON) is the notion that increasing the strength of a bleach solution will improve effectiveness.

• This should NEVER be attempted when DECONing PPE.
As you doff PPE, you will drop disposable items into the leak-proof plastic bag prepared for that purpose and later double bag the used PPE.
Like donning, the **doffing** sequence is **different** depending on whether you use **PAPR** or **N95** respirators.

**PAPR** – **21-Step process**  
**OR**  
**N95** – **24-Step process**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
Trained Observer

Like the donning process, doffing is conducted under the supervision of a Trained Observer.

SOURCE: CDC www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html
Trained Observer

• A Trained Observer is an ESSENTIAL part of doffing for both PAPR and N95 respirator users.

• You MUST follow his/her commands.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
DOFFING PPE: PAPR

21-Step process
Engage Trained Observer

Your Trained Observer, using a written checklist . . .

- Reads aloud each step of the doffing procedure.
- Visually confirms and documents PPE is removed properly.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Engage Trained Observer

Your Trained Observer . . .

• Reminds you to avoid reflexive actions that put you at risk, such as touching your face.
• Should minimize touching your PPE during the doffing process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Engage Trained Observer

Your Trained Observer . . .

• May **assist** with **removal** of specific components of PPE.
• **Disinfects outer-gloved hands** immediately after handling any of your PPE during the doffing process.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Inspect PPE for **visible** contamination, cuts or tears.
Inspect

• Disinfect potentially contaminated PPE using an EPA-registered disinfectant wipe . . .
  – OR an EPA-registered disinfectant spray (if conditions permit and appropriate regulations are followed)

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect outer gloves

- Use EPA-registered disinfectant wipe OR ABHR.

- Allow to dry.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Remove apron (if used)

- Remove and discard apron.
- To avoid contaminating gloves, roll apron from inside (clean side) to outside.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Inspect

• **Inspect** your PPE ensemble again.

• Look for **visible contamination, cuts or tears**.

• If visibly contaminated, **disinfect affected PPE** using an EPA-registered disinfectant wipe.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect **outer** gloves

- Disinfect **outer**-gloved hands using an **EPA-registered disinfectant wipe** **OR** **ABHR** and allow to dry.

**Step 6**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Remove boot or shoe covers

• Sit down so you don’t risk falling.
  – Avoid legs touching each other.

• While seated, remove and discard boot or shoe covers.
  – Check boot cover manufacturer for additional removal instructions.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect and remove outer gloves

- Disinfect outer-gloved hands.
  - Use an EPA-registered disinfectant wipe OR ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect and **remove** outer gloves

- Remove and **discard outer** gloves.
- Be careful **NOT to contaminate** inner glove.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Inspect and disinfect inner gloves

- Inspect inner gloves’ outer surfaces for visible contamination, cuts or tears.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Inspect and disinfect \textbf{inner} gloves

- \textbf{IF} an inner glove is \textbf{visibly soiled, cut or torn}:
  - \textbf{Disinfect} the glove with either an EPA-registered disinfectant wipe \textbf{OR} ABHR.
  - \textbf{Remove} inner gloves and perform \textbf{hand hygiene} with ABHR on \textbf{bare hands}.
  - \textbf{Don} a clean pair of gloves.

\textbf{SOURCE: CDC} \url{www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html} and \url{www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html}
Inspect and disinfect inner gloves

- **IF no visible contamination, cuts, or tears are identified on the inner gloves:**
  - Disinfect the **inner-gloved hands** with either an EPA-registered disinfectant wipe **OR** ABHR.
Remove PAPR respirator | Step 10

Remember: Two (2) types of recommended PAPR

- PAPR with a self-contained filter and blower unit integrated inside the helmet – wait until Step 15 for removal.
- Go to Step 11 now.

- If a PAPR with an external belt-mounted blower unit is used, all components must be removed at this step.
  - Detach hose from hood. Remove and discard disposable hood.
  - Disinfect inner gloves with either an EPA-registered disinfectant wipe OR ABHR.
- Remove headpiece, blower, tubing and the belt and battery unit.
  - You may need assistance from the Trained Observer.
- Disinfect inner gloves AGAIN.
- Place all reusable PAPR in designated container for disinfection.

SOURCE: CDC
Remove coverall

- **Tilt** head back.
- **CAREFULLY** reach **under** the PAPR hood to locate **zipper** or **fasteners**.
  - Avoid touching your skin.
  - Using **two (2) fingers of one (1) hand only**, unzip or unfasten coverall **completely**.
  - Roll coverall downward, turning inside (clean-side) out.

**Step 11**

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Remove coverall

- **Avoid contact** of surgical scrubs or disposable garments with **outer surface** of coverall.
- Touch **ONLY** the **inside** (clean side) of the coverall.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect inner gloves AGAIN

- Disinfect inner gloves with either an EPA-registered disinfectant wipe OR ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect washable shoes

- Sit on a **new, clean** surface.
- Using an **EPA-registered disinfectant wipe**, wipe down every external surface, including soles, of your washable shoes.
- **Avoid** touching ankles.

**Step 13**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect **inner** gloves AGAIN

- Use either an EPA-registered disinfectant wipe **OR** ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Remove respirator
(if not already removed)

- If using a PAPR with a self-contained filter and blower unit integrated inside a helmet

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Remove respirator (if not already removed)

• Remove all components.
  – Remove and discard **disposable hood**.
  – **Disinfect inner gloves** (again) with either an EPA-registered disinfectant wipe **OR** ABHR.
  – **CAREFULLY remove and discard** inner gloves.
Remove respirator
(if not already removed)

• **Do NOT** contaminate **bare hands**.
  – Perform **hand hygiene** with ABHR.
  – **Don a NEW pair of inner gloves**.

• **Remove helmet and belt and battery unit**.
  – Get **assistance** from your **Trained Observer** if needed.

**Step 15**

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Disinfect and remove NEW inner gloves

- Use an EPA-registered disinfectant wipe OR ABHR.
  - CAREFULLY remove and discard inner gloves.
  - Do NOT contaminate bare hands OR touch face or bare skin.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Hand hygiene

- Perform **hand hygiene** with ABHR.

**SOURCE:** CDC
www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html
and www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html
Inspect

- This is a **final inspection** for any contamination on your surgical scrubs or disposable garments.
- IF contamination is identified, **immediately** notify your supervisor before leaving the PPE removal area.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Scrub OR disposable garments

- You can leave the PPE removal area wearing dedicated washable footwear and surgical scrubs or disposable garments.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Shower

- **Showers** are recommended for those:
  - Performing high-risk patient care.
  - Spending **extended periods of time** with an Ebola patient.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Protocol evaluation/medical assessment

- Either the infection preventionist or occupational safety and health coordinator or their designee should meet with the First Responder to review patient care activities performed to identify any concerns about care protocols and to record First Responder’s level of fatigue.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/PAPRRespirator_Coveralls/doffing_01.html)
Safe removal of gloves

CDC recommends the following process to remove contaminated gloves:

• Using a gloved hand, grasp (or pinch) the palm area of the other gloved hand and peel off first glove, inside (clean side) out.

Safe removal of gloves

- Hold **removed glove** in gloved hand.
- **Slide fingers** of ungloved hand **under** remaining glove at **wrist** and **peel** off second glove **over first glove**, again, **inside** (clean side) **out**.

**NOTE**

Safe removal of gloves

• If double gloved, the process is the same.

• Always perform hand hygiene when removing outer or inner gloves.

Doffing using PAPR is COMPLETE.
DOFFING PPE: N95 respirator

24-Step process
The first 9 steps of an N95 user doffing are the same as those for PAPR.
Engage Trained Observer

Your Trained Observer, using a written checklist . . .

- Reads aloud each step of the doffing procedure.
- Visually confirms and documents PPE is removed properly.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Engage Trained Observer

Your Trained Observer...

- Reminds you to avoid reflexive actions that put you at risk, such as touching your face.
- Should minimize touching your PPE during the doffing process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Engage Trained Observer

Your Trained Observer . . .

- May **assist** with **removal** of specific components of PPE.
- **Disinfects outer-gloved hands** immediately after handling any of your PPE during the doffing process.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect

- Inspect PPE for **visible** contamination, cuts or tears.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect

- **Disinfect potentially contaminated** PPE using an EPA-registered disinfectant wipe . . .
  
  — **OR an EPA-registered disinfectant spray** (if conditions permit and appropriate regulations are followed)

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect outer gloves

- Use EPA-registered disinfectant wipe OR ABHR.
- Allow to dry.
Remove apron (if used)

- **Remove** and **discard** apron.
- **To avoid contaminating gloves**, roll apron from *inside* (clean side) to *outside*.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect

- Inspect your PPE ensemble again.
- Look for visible contamination, cuts or tears.
- If visibly contaminated, disinfect affected PPE using an EPA-registered disinfectant wipe.

SOURCE: CDC www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html and www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html
Disinfect **outer** gloves

- Disinfect **outer**-gloved hands using an EPA-registered disinfectant wipe OR ABHR and allow to dry.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove boot or shoe covers

- **Sit down** so you don’t risk falling.
  - **Avoid** legs touching each other.
- While seated, **remove** and **discard boot or shoe covers**.
  - Check boot cover manufacturer for additional removal instructions.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect and **remove** **outer** gloves

- **Disinfect outer-gloved hands.**
  - Use an **EPA-registered disinfectant wipe OR ABHR.**
- **Remove and discard outer gloves.**
- **Be careful NOT to contaminate inner glove.**

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect and disinfect inner gloves

- Inspect inner gloves’ outer surfaces for visible contamination, cuts or tears.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect and disinfect **inner** gloves

- **If** an inner glove is **visibly soiled, cut or torn**:
  - **Disinfect** the glove with either an EPA-registered disinfectant wipe **OR** ABHR.
  - **Remove** inner gloves and perform **hand hygiene** with ABHR on **bare hands**.
  - **Don** a clean pair of gloves.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect and disinfect inner gloves

• IF no visible contamination, cuts or tears are identified on the inner gloves:
  – Disinfect the inner-gloved hands with either an EPA-registered disinfectant wipe OR ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove face shield

The sequence changes at step 10 for N95 users.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove face shield

• Remove **full face shield**.
  – **Tilt** head slightly forward.
  – Grab the **rear strap** and pull it **over** your head.
  – Face shield will gently **fall forward**.
  – **Discard**.

• **Avoid** touching the **front** of the face shield.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect **inner gloves** AGAIN

• Use either an EPA-registered disinfectant wipe **OR** ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove hood

- Unfasten **hood**.
- Gently **remove** and **discard**.
- **Trained Observer** may **assist** with **unfastening** **hood**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect **inner gloves** AGAIN

- Use either an **EPA-registered disinfectant wipe** OR **ABHR**.
Remove coverall

- **Tilt** head back.
- **CAREFULLY** reach to locate zipper or fasteners.
  - Avoid touching your skin.
  - Using **two (2) fingers of one (1) hand only**, unzip or unfasten coverall completely.
  - Roll down, turning **inside** (clean side) out.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove coverall

- **Avoid contact** of surgical scrubs or disposable garments with **outer surface** of coverall.
- Touch **ONLY** the **inside** (clean side) of the coverall.
Disinfect and change to a **NEW** pair of **inner gloves**

- Disinfect **inner-gloved hands** with either an EPA-registered disinfectant wipe **OR** ABHR.
  - CAREFULLY remove and **discard** inner gloves.
  - Do **NOT** contaminate bare hands.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect and change to a **NEW** pair of inner gloves

- Perform hand hygiene.
- Don **NEW** pair of gloves.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove **N95** respirator

- Tilt head forward.
- Grasp the **bottom tie** or **elastic strap**, then the **top tie** or **elastic strap**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Remove **N95 respirator**

- **Remove** – *without touching the front* of the N95 respirator.
- **Discard** N95 respirator.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect **inner gloves** AGAIN

- Use either an **EPA-registered disinfectant wipe** OR **ABHR**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect washable shoes

• Sit on a **new, clean** surface.
• Using an **EPA-registered disinfectant wipe**, wipe down every external surface, including soles, of the washable shoes.
• **Avoid** touching ankles.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Disinfect and remove NEW inner gloves

- Use an EPA-registered disinfectant wipe OR ABHR.
  - CAREFULLY remove and discard inner gloves.
  - Do NOT contaminate bare hands or touch face or bare skin.

SOURCE: CDC www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html and www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html
Hand hygiene

- Perform **hand hygiene** with ABHR.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Inspect

- This is a **final inspection** for any contamination on your **surgical scrubs** or **disposable garments**.
- **IF** contamination is identified, **immediately** notify your supervisor **before leaving the PPE removal area**.

**SOURCE:** CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Scrubs OR disposable garments

- You can leave PPE removal area wearing dedicated washable footwear and surgical scrubs or disposable garments.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Shower

- **Showers** are recommended for those:
  - Performing high-risk patient care.
  - Spending **extended periods of time** with an Ebola patient.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Protocol evaluation/medical assessment

- Either the infection preventionist or occupational safety and health coordinator or their designee should meet with the First Responder to review patient care activities performed to identify any concerns about care protocols and to record First Responder’s level of fatigue.

SOURCE: CDC [www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html](http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html) and [www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/n95Respirator_Coveralls/doffing_01.html)
Safe removal of gloves

CDC recommends the following process to remove contaminated gloves:

• Using a gloved hand, grasp (or pinch) the palm area of the other gloved hand and peel off first glove, inside (clean side) out.

Safe removal of gloves

- Hold **removed glove** in gloved hand.
- **Slide fingers** of ungloved hand **under** remaining glove at **wrist** and **peel** off second glove **over first glove**, again, **inside** (clean side) **out**.

Safe removal of gloves

- If **double gloved**, the process is the same.
- **Always** perform **hand hygiene** when removing **outer** or **inner gloves**.

**NOTE**

Doffing using N95 respirator is COMPLETE.
However, you are not finished yet . . .
What do you do with PPE after taking it off?
SECTION 5 –
Securing used PPE
Contain and dispose

Complete containment and proper disposal is **ESSENTIAL** for your protection and the protection of others.
Remember you need . . .

- A small plastic disposable kiddie pool or tub.
- Two (2) buckets:
  - One (1) with clear water.
  - One (1) with a 10% household bleach solution (prepared earlier).
Remember you need . . .

- Single-use (disposable) nitrile examination gloves with extended cuffs.
- Plastic disposable tarp.
- Duct tape.
Remember you need . . .

- Large (33 gallon or larger) leak-proof plastic bags.
- Knife.
- An appropriate container for used (contaminated) sharps.
Contain and dispose

Before disposal begins . . .

• **Don a NEW pair of gloves.**

• **Fill two (2) buckets:**
  
  – One (1) with **clear water**.
  
  – One (1) with a **10% household bleach solution** (prepared earlier).
Contain and dispose

• If you are on scene, double bag used PPE in large (33 gallon or larger) leak-proof plastic bags and secure.
Contain and dispose

• Tie large (33 gallon or larger) leak-proof plastic bag in which the PPE was doffed and seal with duct tape.

• Place sealed bag into a second leak-proof plastic bag.
Contain and dispose

• The outer bag is also sealed with duct tape and placed aside.
Contain and dispose

• Once the double bag of used PPE is placed aside, **puncture** and **fold** the pool.

• Then place the pool in a **large** (33 gallon or larger) **leak-proof plastic bag**.
Contain and dispose

- The leak-proof plastic bag containing the pool is then placed on the center of the tarp.
- The tarp is then folded over the pool and placed into another large (33 gallon or larger) leak-proof plastic bag.
  - While folding, the First Responder should only touch the outside (clean side) of the tarp.
DECON

- Go to the prepared buckets of **10% household bleach solution** and clear water.
DECON

• Wash **gloved hands** in the **10% household bleach solution** . . .
  
  – As hands are **removed** from the solution (but still in the bucket), **gently shake off excess solution**.
• . . . followed by washing gloved hands in the bucket of clear water.
  – As hands are removed from the water (but still in the bucket), gently shake off excess water.
Contain and dispose

- Now **remove** gloves
  - . . . careful to **not contaminate** your skin.
Contain and dispose

• Place gloves in the leak-proof plastic bag containing the pool and tarp.
• Seal with duct tape, double bag and seal with duct tape again.
Contain and dispose

- **Bags** containing **used PPE, pool** and **tarp** are secured at the **scene** to wait for a **State-provided contractor** to **properly remove and dispose**.
  - To remain **secure**, someone must **stay** with the bags and wait for the **contractor**.
Disposal

- The **State-provided contractor** places the plastic bags into an **overpack drum** and **seals** for disposal.
Clean-up

Ensure **reusable** equipment is **properly** reprocessed and that **batteries** are **fully** charged.
Clean-up

- Follow **manufacture’s instructions for** DECONing reusable PPE components.
  - Ensure someone has **designated responsibility** for DECONing.
- Follow **departmental/agency guidance**.
- Follow **CDC guidance**.
What MORE can you do to ensure a safe environment?
Remember

• Avoid unprotected direct body contact.

• Stay at least three (3) feet away if you are not wearing appropriate PPE.

• Ensure you have the right PPE.
Remember

• Don and doff PPE CAREFULLY.

• ALWAYS have a Trained Observer when donning or doffing PPE.

• Take your time. Do NOT rush.

• CONTAIN used PPE and any contaminated materials COMPLETELY.
If you are functioning in an **EMS** capacity:

- **Don** PPE *before* entering the scene.
- **Identify** and **isolate** the patient **known** or **SUSPECTED** to have Ebola.
If you are functioning in an **EMS** capacity:

- **Limit** the number of people who come into **contact** with the **patient** and the **patient care area**.
If you are functioning in an **EMS** capacity:

Notify DHH/Office of Public Health/Infectious Disease Epidemiology (**ID EPI**) Section at **1-800-256-2748** . . .

• **AND notify** the **receiving** health care facility that the patient is **SUSPECTED** of having Ebola.
If you are functioning in an **EMS** capacity:

- Limit pre-hospital procedures in transport that **increase** the **risk** of exposure to infectious material.
If you are functioning in an **EMS** capacity:

- For example, limit **intubation**, opening or suctioning of airways, cardiopulmonary resuscitation and similar procedures to the **minimum necessary** for **essential diagnostic evaluation and medical care**.
If you are functioning in an **EMS** capacity:

- **Limit** the use of **needles** and other sharps as much as possible.
- **Follow** your departmental/agency guidance and CDC guidance.
If you suspect you have been exposed to any contaminants while you are on scene, performing your duties OR doffing your PPE . . .
If exposed . . .

- STOP work immediately.
- Wash exposed area with soap and water and/or irrigate eyes, nose and mouth if exposed, with large amounts of water or eyewash solution.
- Notify your supervisor.
Training and practice are ESSENTIAL to successfully donning and doffing PPE and securing used PPE.
To get it right –

PRACTICE! PRACTICE! PRACTICE!
• CDC has produced video training aids including step-by-step guidance for donning and doffing PPE.

• Steps in the video are sometimes different than steps identified in the CDC written guidance.
  – For example, sometimes steps are consolidated, others may vary depending on type of PPE selected.

• The preceding PowerPoint follows the step sequencing in the CDC written guidance published October 20 and 28, 2014.
For more information . . .

• Visit these websites:
  
  – www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-
    medical-services-systems-911-public-safety-answering-points-
    management-patients-known-suspected-united-states.html
  
  – www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html
  
  – osha.gov/pls/oshaweb/owadisp.
    Show_document?p_id=12716&p_table=standards
Video resources

• CDC PPE training module:
  www.cdc.gov/vhf/ebola/hcp/ppe-training/

• PAPR with coveralls:
  www.cdc.gov/vhf/ebola/hcp/ppe-training/
PAPRRespirator_Coveralls/donning_01.html

• N95 with coveralls:
  www.cdc.gov/vhf/ebola/hcp/ppe-training/
n95Respirator_Coveralls/donning_01.html
• This presentation was **produced** and **published** on **November 13, 2014**.

• CDC guidance dated **October 20 and 28, 2014** were used as **foundational material**.

• CDC updates the **website** frequently. Check the website for **most current information**.

  [www.cdc.gov/vhf/ebola/index.html](http://www.cdc.gov/vhf/ebola/index.html)