HealthCare Partners, IPA
HealthCare Partners, Management Services Organization
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Medical Advisory Committee Monthly Meeting
Tuesday, June 30, 2020 @6:30 pm.
AGENDA

- Call to Order — Joseph Cervia, MD.
- Review of the minutes from May 26, 2020 — Joseph Cervia, MD.
- Medical Policies: — Joseph Cervia, MD
  - Functional Endoscopic Sinus Surgery (FESS)

Revision History

Mar. 13, 2020 — added coverage for sinus drug eluting stents (eff. 6/13/2020)

  - Glaucoma Surgery

Revision History

Jan. 10, 2020	Added iStent inject coverage and case-by-case language for goniotomy

  - MYvantage® Hereditary Comprehensive Cancer Panel

Revision History

Dec. 13, 2019 — imported criteria from BRCA 1 and 2 Genetic Testing (Sequence Analysis/Rearrangement) and Genetic Testing for Colorectal Cancer / Lynch Syndrome policies to denote applicability to MYvantage and added coverage for members with certain personal cancers.

  - Posterior Tibial Nerve Stimulation for Voiding Dysfunction

Jul. 12, 2019	The indication of failure/intolerance/contraindication to pharmacotherapy with ≥ 2 anticholinergic medications and/or smooth muscle relaxants was clarified to include overactive bladder and β3 agonist medications.

  - Rhinoplasty

Revision History

Mar. 13, 2020 — added nasal dermoid, saddle nose deformity and vestibular stenosis as covered indications.

- ❖ Presentations: Joseph Cervia, MD
  - Back to the Future-Final
  - Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19
- ❖ Next Meeting- Tuesday, July 28, 2020 Joseph Cervia, MD

- ❖ Adjournment Joseph Cervia, MD

HealthCare Partner Management Services Organization
Medical Advisory Committee meeting
Tuesday, May 26, 2020

PRESENT: Joseph Cervia, MD; Melyssa Gil, Executive Assistant; Lorraine Marin, MD; Roman Urbanczyk, MD; Kauser Yasmeen, MD; Neeta Shah, MD; Noel Brown, MD; Lisa Boodram, Pharm. D.; Darren Kaufman, MD, SVP; George Ingram, Regional VP; Nancy Klotz, MD, VP; David Madover, V.P. Provider Networks; Edward Zamecki, MD

EXCUSED: Peggy McCoy, Executive Assistant; Eric Shoenfeld, MD; Sandra M. Mitchell, RN, VP Medical Mgmt.; Robert LoNigro, MD, EVP; Asif Rehman, MD; James DeMaio, MD; Wesner Moise, MD; Donald Claxton, MD; Aloysius Cuyjet, MD; Roger Boykin, MD; Monique Phillips, CCO; Karl Brown, MD, EVP Claims

AGENDA ITEM	FINDINGS / DISCUSSION / CONCLUSIONS / RECOMMENDATIONS	ACTION	RESPONSIBLE PARTY	FOLLOW-UP/ TARGET DATE
Call to Order	The May 26, 2020 Medical Advisory Committee meeting was called to order at 6:35 p.m.	N/A	Joseph Cervia, MD	N/A
Approval of Minutes from last meeting	The Minutes from the April 28, 2020 were reviewed and approved as presented.	Approved as Presented.	Joseph Cervia, MD	N/A
Open Issues	N/A	N/A	Joseph Cervia, MD.	N/A
Medical Policies	• **Acupuncture - Emblem Health Medicare HMO Plans with Acupuncture Benefit** • **Foot Surgery-Bunion/Hammertoe/Metatarsophalangeal Joint(Commercial)**	The revised medical policies were reviewed and approved as presented	Joseph Cervia, MD	N/A

AGENDA ITEM	FINDINGS / DISCUSSION / CONCLUSIONS / RECOMMENDATIONS	ACTION	RESPONSIBLE PARTY	FOLLOW-UP/ TARGET DATE
	• **Gene Expression Profiling** • **Gene Expression Profiling and Biomarker Testing for Breast Cancer** • **Genetic Analysis of PIK3CA Status in Tumor Cells**			
Presentation	**Management of Critically Ill Adults With COVID-19** Severe acute respiratory syndrome coronavirus 2 is the cause of COVID-19, a pandemic that has affected more than 400 000 individuals and caused nearly 20 000 deaths as of late March 2020. Approximately 5% to 10% of patients require intensive care unit (ICU) admission and mechanical ventilation. The Surviving Sepsis Campaign (SSC) has previously published a series of guidelines for sepsis and septic shock. Based on this experience, experts were recruited to write guidelines on the management of COVID-19 in critically ill adults. Many of these recommendations are extrapolated from studies and experience in critically ill patients without COVID-19. However, this pandemic has necessitated flexibility and ingenuity to address its unique challenges, and it will require continued rapid and judicious synthesis of heterogeneous and rapidly evolving data and clinical experience shared by clinicians.		Joseph Cervia, MD	N/A
Presentation	**Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19) A Review** The pandemic of coronavirus disease 2019 (COVID-19) caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) presents an unprecedented challenge to identify effective drugs for prevention and treatment. Given the rapid pace of scientific discovery and clinical data generated by the large number of people rapidly infected by SARS-CoV-2, clinicians need accurate evidence regarding effective medical treatments for this infection. No proven effective therapies for this virus currently exist. The rapidly expanding knowledge regarding SARS-CoV-2		Joseph Cervia, MD	N/A

AGENDA ITEM	FINDINGS / DISCUSSION / CONCLUSIONS / RECOMMENDATIONS	ACTION	RESPONSIBLE PARTY	FOLLOW-UP/ TARGET DATE
	virology provides a significant number of potential drug targets. The most promising therapy is remdesivir. Remdesivir has potent in vitro activity against SARS-CoV-2, but it is not US Food and Drug Administration approved and currently is being tested in ongoing randomized trials. Oseltamivir has not been shown to have efficacy, and corticosteroids are currently not recommended. Current clinical evidence does not support stopping angiotensin-converting enzyme inhibitors or angiotensin receptor blockers in patients with COVID-19. The COVID-19 pandemic represents the greatest global public health crisis of this generation and, potentially, since the pandemic influenza outbreak of 1918. The speed and volume of clinical trials launched to investigate potential therapies for COVID-19 highlight both the need and capability to produce high-quality evidence even in the middle of a pandemic. No therapies have been shown effective to date.			
Presentation	**Older Clinicians and the Surge in Novel Coronavirus Disease 2019 (COVID-19)** The recent report of 2 critically ill emergency physicians infected by the novel coronavirus disease 2019 (COVID-19) is a sobering reminder of the vulnerability of the nation's health care workforce.1 While all members of the health care workforce are vital as the health care system faces perhaps its greatest challenge in memory, physicians and nurses are the caregivers who typically have the most direct contact with patients, whether through advising, triaging, or treating those who require hospitalization. There are large numbers of older nurses and physicians, who, if they were not in the health care workforce, would be staying at home to minimize their risk of exposure. Instead, many older clinicians are reporting for work every day. These clinicians have decades of experience, knowledge, and decision-making skills that are crucially		Joseph Cervia, MD	N/A

AGENDA ITEM	FINDINGS / DISCUSSION / CONCLUSIONS / RECOMMENDATIONS	ACTION	RESPONSIBLE PARTY	FOLLOW-UP/ TARGET DATE
	important to guide the wise use of scarce resources when treating patients, protecting coworkers, and ensuring the capabilities of health care delivery organizations. It is reassuring that large numbers of older nurses and physicians are caring for patients today. These clinicians have decades worth of knowledge, experience, and relationships with coworkers that will be needed now more than ever when large numbers of patients are hospitalized with COVID-19. These clinician leaders are an essential and vitally important component of many organizations, especially because many of these older clinicians have experience with disasters, triaging, decision making, and managing staff and resources under times of great stress. As the public, government, and the health care workforce prepare for what could be extraordinarily challenging weeks and months ahead, thought should be given on how to wisely use all health care resources, including the nation's nurse and physician workforce—from students to the most seasoned.			
Next Meeting	The next Medical Advisory Committee meeting will be held on Tuesday, June 23, 2020 @6:30 p.m.	N/A	N/A	N/A
Adjournment	The meeting was adjourned at 7:32 p.m.	N/A	Joseph Cervia, MD.	N/A

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Joseph Cervia, MD
Medical Director Reviewer, Medical Advisory Committee Chair

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Date – 2/25/2020

Functional Endoscopic Sinus Surgery (FESS)

Last Review Date: March 13, 2020	Number: MG.MM.SU.56a

Medical Guideline Disclaimer

 The treating physician or primary care provider must submit to EmblemHealth the clinical evidence that the patient meets the criteria for the treatment or surgical procedure. Without this documentation and information, EmblemHealth will not be able to properly review the request for prior authorization. The clinical review criteria expressed below reflects how EmblemHealth determines whether certain services or supplies are medically necessary. EmblemHealth established the clinical review criteria based upon a review of currently available clinical information (including clinical outcome studies in the peer-reviewed published medical literature, regulatory status of the technology, evidence-based guidelines of public health and health research agencies, evidence-based guidelines and positions of leading national health professional organizations, views of physicians practicing in relevant clinical areas, and other relevant factors). EmblemHealth expressly reserves the right to revise these conclusions as clinical information changes, and welcomes further relevant information. Each benefit program defines which services are covered. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered and/or paid for by EmblemHealth, as some programs exclude coverage for services or supplies that EmblemHealth considers medically necessary. If there is a discrepancy between this guideline and a member's benefits program, the benefits program will govern. In addition, coverage may be mandated by applicable legal requirements of a state, the Federal Government or the Centers for Medicare & Medicaid Services (CMS) for Medicare and Medicaid members. All coding and web site links are accurate at time of publication. EmblemHealth Services Company LLC, ("EmblemHealth") has adopted the herein policy in providing management, administrative and other services to HIP Health Plan of New York, HIP Insurance Company of New York, Group Health Incorporated and GHI HMO Select, related to health benefit plans offered by these entities. All of the aforementioned entities are affiliated companies under common control of EmblemHealth Inc.

Definitions

Functional endoscopic sinus surgery (FESS)	Minimally invasive outpatient mucosal-sparing surgical technique utilized to treat medically refractory CRS (with or without polyps) or recurrent acute rhinosinusitis. Rigid endoscopes are employed to visualize the surgical field to achieve one or more of the following goals: 1. Open paranasal sinuses to facilitate ventilation and drainage 2. Remove polyps and/or osteitic bony fragments to reduce inflammatory load 3. Enlarge sinus ostia to achieve optimal instillation of topical therapies 4. Obtain bacterial or fungal cultures and tissue for histopathology
Acute rhinosinusitis (ARS)	Characterized by inflammation of the mucosa of the nose and paranasal sinuses with associated sudden onset of symptoms of purulent nasal drainage accompanied by nasal obstruction, facial pain/pressure/fullness (or both) of ≤ 4 weeks duration.
Recurrent acute rhinosinusitis (RARS)	Characterized by ≥ 4 recurrent ARS episodes with complete clearing of symptoms between episodes over a one year period.
Chronic rhinosinusitis (CRS)	Clinical disorder characterized by inflammation of the nasal mucosa and paranasal sinuses with associated signs and symptoms of 12 week consecutive duration. CRS is characterized by ≥ 2 symptoms, one of which is nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip), with or without facial pain/pressure and reduction or loss of smell with endoscopic evidence of mucopurulence, edema, and/or polyps and/or CT presence of mucosal thickening or air-fluid levels in the sinuses.
CRS with polyposis	Represents a subgroup of CRS patients with endoscopic evidence of unilateral or bilateral polyps in the inferior, superior and middle meatus.
Implantable sinus spacers/stents	Inserted following endoscopic surgery to maintain patency of the sinuses and deliver local steroids. (EmblemHealth regards these devices as investigational and not medically necessary; see Limitations/Exclusions)

Related Medical Guideline

Balloon Sinuplasty

Guideline

A. FESS is considered medically necessary for the treatment of polyposis, sinusitis or sinus tumor when any of the following (1–14) are applicable:

1. Presence of benign or malignant sinonasal tumor (including inverted papilloma) confirmed by physical exam, endoscopic and CT imaging
2. Presence of clinical complications associated with pus formation (suppuration) (e.g., subperiosteal abscess, brain abscess, etc.)
3. Symptomatic chronic polyposis (i.e., nasal airway obstruction or suboptimal asthma control) refractory to maximal medical therapy
4. Allergic fungal sinusitis and **all**:
    i. Eosinophilic mucus
    ii. Nasal polyposis
    iii. Positive CT imaging
5. Chronic sinusitis secondary to mucocele (excludes benign, asymptomatic mucus retention cysts)
6. Recurrent sinusitis with significant associated comorbid conditions (may casual or exacerbate conditions such as asthma, recurrent bronchitis or pneumonia, diabetes, etc.)
7. Uncomplicated sinusitis (i.e., confined to paranasal sinuses without adjacent involvement of neurologic, soft tissue or bony structures); **all:**
    i. ≥ 4 episodes of ARS in one year with documented antibiotic treatment
    or
    CRS that interferes with lifestyle

    ii. Refractory to maximal medical therapy
    (Note: allergy testing is appropriate if symptoms are consistent with allergic rhinitis and have not responded to appropriate environmental controls and pharmacotherapy [antihistamines, intranasal corticosteroids, leukotriene antagonists, etc.])

    iii. Abnormal findings on diagnostic work-up, as evidenced by any:
        1. CT findings suggestive of obstruction or infection (e.g., air fluid levels, air bubbles, significant mucosal thickening, pansinusitis, diffuse opacification, etc.)
        2. Nasal endoscopy findings suggestive of significant disease
        3. Physical exam findings suggestive of chronic/recurrent disease (e.g., mucopurulence, erythema, edema, inflammation)
8. Fungal mycetoma
9. Previously failed sinus surgery
10. Cerebrospinal fluid rhinorrhea
11. Nasal encephalocele
12. Posterior epistaxis cauterization

13. Persistent facial pain after other causes ruled out (relative indication)
14. Cavernous sinus thrombosis secondary to chronic sinusitis

B. Nasal or sinus cavity debridement post FESS is considered medically necessary as follows; **any**:

1. Twice within 1st 30-day postoperative period
2. Postoperative loss of vision or double vision
3. Cerebrospinal fluid leak (i.e., rhinorrhea)
4. Physical obstruction of sinus opening secondary to **any**:
    i. Nasal polyps unresponsive to oral or nasal steroids
    ii. Documented presence of papilloma, carcinoma or other neoplasm
    iii. Allergic fungal sinusitis

Maximal Medical Therapy

1. Oral antibiotics of 2-4 weeks duration for members with CRS (culture-directed if possible)
2. Oral antibiotics with multiple 1-3 week courses for members with RARS
3. Systemic and/or topical steroids
4. Saline irrigations (optional)
5. Topical and/or systemic decongestants (optional , if not contraindicated)
6. Treatment of concomitant allergic rhinitis, including avoidance measures, pharmacotherapy and/or immunotherapy

Limitations/Exclusions

A. FESS is not considered medically necessary unless maximal medical management, when indicated, has been attempted, but failed to resolve the member's clinical condition.

Revision History

Mar. 13, 2020 — added coverage for sinus drug eluting stents (eff. 6/13/2020)

Applicable Procedure Codes

31237	Nasal/sinus endoscopy, surgical; with biopsy, polypectomy or debridement [when specified as debridement following sinus surgery]
31240	Nasal/sinus endoscopy, surgical; with concha bullosa resection
31253	Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including frontal sinus exploration, with removal of tissue from frontal sinus, when performed
31254	Nasal/sinus endoscopy, surgical; with ethmoidectomy, partial (anterior)
31255	Nasal/sinus endoscopy, surgical; with ethmoidectomy, total (anterior and posterior)
31256	Nasal/sinus endoscopy, surgical, with maxillary antrostomy
31257	Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including sphenoidoidotomy
31259	Nasal/sinus endoscopy, surgical with ethmoidectomy; total (anterior and posterior), including sphenoidotomy, with removal of tissue from the sphenoid sinus
31267	Nasal/sinus endoscopy, surgical, with maxillary antrostomy; with removal of tissue from maxillary sinus
31276	Nasal/sinus endoscopy, surgical with frontal sinus exploration, with or without removal of tissue from frontal sinus
31287	Nasal/sinus endoscopy, surgical, with sphenoidotomy

31288	Nasal/sinus endoscopy, surgical, with sphenoidotomy; with removal of tissue from the sphenoid sinus
31295	Nasal/sinus endoscopy, surgical; with dilation of maxillary sinus ostium (eg, balloon dilation), transnasal or via canine fossa
31296	Nasal/sinus endoscopy, surgical; with dilation of frontal sinus ostium (eg, balloon dilation)
31297	Nasal/sinus endoscopy, surgical; with dilation of sphenoid sinus ostium (eg, balloon dilation)
31298	Nasal/sinus endoscopy, surgical; with dilation of frontal and sphenoid sinus ostia (eg, balloon dilation)
S2342	Nasal endoscopy for post-operative debridement following functional endoscopic sinus surgery, nasal and/or sinus cavity(s), unilateral or bilateral

Applicable ICD-10 Diagnosis Codes

B47.0	Eumycetoma
C30.0	Malignant neoplasm of nasal cavity
C31.0	Malignant neoplasm of maxillary sinus
C31.1	Malignant neoplasm of ethmoidal sinus
C31.2	Malignant neoplasm of frontal sinus
C31.3	Malignant neoplasm of sphenoid sinus
C31.8	Malignant neoplasm of overlapping sites of accessory sinuses
C31.9	Malignant neoplasm of accessory sinus, unspecified
D14.0	Benign neoplasm of middle ear, nasal cavity and accessory sinuses
G96.0	Cerebrospinal fluid leak
J01.01	Acute recurrent maxillary sinusitis
J01.11	Acute recurrent frontal sinusitis
J01.21	Acute recurrent ethmoidal sinusitis
J01.31	Acute recurrent sphenoidal sinusitis
J01.41	Acute recurrent pansinusitis
J01.81	Other acute recurrent sinusitis
J01.91	Acute recurrent sinusitis, unspecified
J32.0	Chronic maxillary sinusitis
J32.1	Chronic frontal sinusitis
J32.2	Chronic ethmoidal sinusitis
J32.3	Chronic sphenoidal sinusitis
J32.4	Chronic pansinusitis
J32.8	Other chronic sinusitis
J32.9	Chronic sinusitis, unspecified
J33.0	Polyp of nasal cavity
J33.1	Polypoid sinus degeneration
J33.8	Other polyp of sinus
J33.9	Nasal polyp, unspecified
J34.1	Cyst and mucocele of nose and nasal sinus
J34.81	Nasal mucositis (ulcerative)
J34.89	Other specified disorders of nose and nasal sinuses
J34.9	Unspecified disorder of nose and nasal sinuses
Q01.1	Nasofrontal encephalocele
R04.0	Epistaxis

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EmblemHealth

Glaucoma Surgery

Last Review Date: January 10, 2020	Number: MG.MM.SU.63d

Medical Guideline Disclaimer

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Definitions

Aqueous Humor	Clear aqueous fluid, which fills the space between the lens and retina in the anterior chamber of the eye where it flows continuously in and out of the chamber nourishing nearby tissues. The fluid exits the chamber at the open angle, where the cornea and iris meet, and flows through a spongy meshwork drain.
Schlemm's Canal	Circular canal in the eye that drains aqueous humor from the anterior chamber of the eye into the anterior ciliary veins.
Intraocular pressure (IOP)	The pressure within the eye, which is maintained by a balance between aqueous fluid secretion and fluid outflow; in glaucoma, defects that interfere with aqueous humor outflow lead to a rise in intraocular pressure resulting in degenerative compromise of optic nerve function known as progressive optic nerve atrophy and vision loss.
Glaucoma	A group of eye diseases characterized by increased IOP), which causes pathological changes in the optic disk and defects in the field of vision. ▪ Open-angle glaucoma (OAG) — progressive form of glaucoma in which the drainage channel for the aqueous humor, composed of the attachment at the edge of the iris and the junction of the sclera and cornea, remains open, and in which serious vision-reduction occurs (advanced stages of the disease) due to tissue changes along the drainage channel. ▪ Primary open-angle glaucoma (POAG; aka chronic glaucoma) — most common type of glaucoma, which is associated with a build-up of aqueous fluid pressure within the eye that can lead to visual field loss and optic nerve damage (usually without any associated pain or discomfort). There is no abnormality in the anterior chamber angle; however, the aqueous fluid is unable to flow correctly. ▪ Secondary open-angle glaucoma (SOAG) —open angle glaucoma resulting from other medical conditions (e.g. pseudoexfoliative glaucoma, pigmentary glaucoma) or trauma. The severity of glaucoma damage can be estimated using the following:

	▪ Mild — optic nerve abnormalities consistent with glaucoma and a normal visual field as tested with standard automated perimetry ▪ **Moderate** — optic nerve abnormalities consistent with glaucoma and visual field abnormalities in one hemifield that are not within 5 degrees of fixation as tested with standard automated perimetry ▪ **Severe** — optic nerve abnormalities consistent with glaucoma and visual field abnormalities in both hemifields and/or loss within 5 degrees of fixation in at least one hemifield as tested with standard automated perimetry
Hypotony	Abnormally low IOP of intraocular fluid; typically occurs as a complication of an underlying ocular disorder (such as uveitis or following a glaucoma surgery).
Aqueous shunts **(Aka aqueous drainage devices or glaucoma drainage devices, setons, tube implants and tube shunts)**	Devices implanted into the eye to create an alternate pathway for aqueous humor drainage from the anterior or posterior eye-chamber to a space between the conjunctiva and the sclera where it is absorbed into the blood, thereby lowering IOP. These devices differ depending on explant surface areas, shape, plate thickness, the presence or absence of a valve and details of surgical installation. Generally, the risk of hypotony is reduced with aqueous shunts in comparison with trabeculectomy, but IOP outcomes are higher than after standard guarded filtration surgery. Other aqueous stents (e.g., microstents) are being developed as minimally penetrating methods to drain aqueous humor from the anterior chamber into Schlemm's canal or the suprachoroidal space. These include the iStent® (Glaukos), which is a 1-mm long stent inserted into the end of Schlemm's canal by an internal approach through the cornea and anterior chamber; the third generation iStent supra®, which is designed for ab interno implantation into the suprachoroidal space; and the CyPass® (Transcend Medical) suprachoroidal stent. An advantage of ab interno shunts is that they may be inserted into the same incision and at the same time as cataract surgery. In addition, most devices do not preclude subsequent trabeculectomy if needed. It may also be possible to insert more than one shunt to achieve the desired IOP. (See Limitations/Exclusions)
Trabeculectomy	A surgical filtration procedure in which a portion of the trabecular meshwork is surgically removed through a superficial flap of sclera to lower the IOP by creating an alternate pathway for the aqueous fluid to flow from the anterior chamber to a bleb created in the subconjunctival space; this is currently considered the gold standard treatment for glaucoma that is refractory to medical management.

Related Medical Guideline

Canaloplasty and Viscocanalostomy

Guideline

A. Laser trabeculoplasty, trabeculectomy or FDA-approved aqueous drainage/shunt implants* are considered medically necessary for the treatment of refractory open-angle glaucoma when there is intolerance, contraindication or failure of topical/oral medication** to control IOP. (Note: Goniotomy requests will be case-by-case reviewed)

* First line examples include latanoprost or timolol; second line, brimonidine or dorzolamide, etc.

** Currently available FDA-approved implants include: Ahmed glaucoma implant, Baerveldt seton, Ex-PRESS mini glaucoma shunt, Glaucoma pressure regulator, Krupin-Denver valve implant, Molteno implant, Schocket shunt

B. One iStent®, iStent inject or Hydrus® Microstent per eye is considered medically necessary when used in combination with cataract surgery for mild to moderate open-angle glaucoma, and a cataract, in adult members being treated with ocular hypotensive medication.

C. One XEN45 device per eye is covered for the management of refractory glaucoma, defined as prior failure of filtering/cilioablative procedure and/or uncontrolled IOP (progressive damage and mean diurnal medicated IOP ≥20 mm Hg) on maximally tolerated medical therapy (i.e., ≥4 classes of topical IOP-lowering medications, or fewer in the case of tolerability or efficacy issues). XEN45 insertion must be performed by an ophthalmologist with experience with trabeculectomy and bleb management.

D. Adjunctive use of anti-fibrotic agents (e.g., mitomycin C) is considered medically necessary for use with the Ex-PRESS mini glaucoma shunt

Limitations/Exclusions

The following treatments/procedures are not considered medically necessary due to insufficient evidence of therapeutic value:

1. Transciliary filtration for glaucoma or other indications (e.g., Fugo Blade transciliary filtration, Singh filtration)
2. Ab interno trabeculectomy (trabectome)
3. Beta radiation.
4. Glaucoma drainage devices without FDA approval (e.g., Eyepass, DeepLight SOLX ® Gold Shunt, which are inserted internally)
5. Adjunctive use of anti-fibrotic agents (e.g., mitomycin C) or systemic corticosteroids with shunt implants other than the Ex-Press mini
6. Drug-eluting implants inserted into the lacrimal canaliculus (including punctal dilation and implant removal when performed) for glaucoma or ocular hypertension (CPT 0356T, 0444T and 0445T)

Revision History

Jan. 10, 2020	Added iStent inject coverage and case-by-case language for goniotomy
Dec. 14, 2018	Added coverage for Hydrus
Sept. 14, 2018	Removed CyPass as a covered device due to Alcon recall Aug. 8, 2018
Mar. 9, 2018	Added coverage for CyPass and XEN45 devices

Applicable Procedure Codes

0191T	Insertion of anterior segment aqueous drainage device, without extraocular reservoir, internal approach, into the trabecular meshwork; initial insertion

0449T	Insertion of aqueous drainage device, without extraocular reservoir, internal approach, into the subconjunctival space; initial device
65855	Trabeculoplasty by laser surgery
66150	Fistulization of sclera for glaucoma; trephination with iridectomy
66155	Fistulization of sclera for glaucoma; thermocauterization with iridectomy
66160	Fistulization of sclera for glaucoma; sclerectomy with punch or scissors, with iridectomy
66180	Aqueous shunt to extraocular equatorial plate reservoir, external approach; with graft
66183	Insertion of anterior segment aqueous drainage device, without extraocular reservoir, external approach
66184	Revision of aqueous shunt to extraocular equatorial plate reservoir; without graft
66185	Revision of aqueous shunt to extraocular equatorial plate reservoir; with graft
66710	Ciliary body destruction; cyclophotocoagulation, transscleral
66720	Ciliary body destruction; cryotherapy
66761	Iridotomy/iridectomy by laser surgery (eg, for glaucoma) (per session)
J0171	Injection, Adrenalin, epinephrine, 0.1 mg
J1120	Injection, acetazolamide sodium, up to 500 mg
J7315	Mitomycin, opthalmic, 0.2 mg
J9190	Injection, fluorouracil, 500 mg
L8612	Aqueous shunt

Applicable ICD-10 Codes

H25.10	Age-related nuclear cataract, unspecified eye
H25.11	Age-related nuclear cataract, right eye
H25.12	Age-related nuclear cataract, left eye
H25.13	Age-related nuclear cataract, bilateral
H25.20	Age-related cataract, morgagnian type, unspecified eye
H25.21	Age-related cataract, morgagnian type, right eye
H25.22	Age-related cataract, morgagnian type, left eye
H25.23	Age-related cataract, morgagnian type, bilateral
H25.811	Combined forms of age-related cataract, right eye
H25.812	Combined forms of age-related cataract, left eye
H25.813	Combined forms of age-related cataract, bilateral
H25.819	Combined forms of age-related cataract, unspecified eye
H25.89	Other age-related cataract
H25.9	Unspecified age-related cataract
H26.001	Unspecified infantile and juvenile cataract, right eye
H26.002	Unspecified infantile and juvenile cataract, left eye
H26.003	Unspecified infantile and juvenile cataract, bilateral
H26.009	Unspecified infantile and juvenile cataract, unspecified eye
H26.011	Infantile and juvenile cortical, lamellar, or zonular cataract, right eye
H26.012	Infantile and juvenile cortical, lamellar, or zonular cataract, left eye
H26.013	Infantile and juvenile cortical, lamellar, or zonular cataract, bilateral

H26.019	Infantile and juvenile cortical, lamellar, or zonular cataract, unspecified eye
H26.031	Infantile and juvenile nuclear cataract, right eye
H26.032	Infantile and juvenile nuclear cataract, left eye
H26.033	Infantile and juvenile nuclear cataract, bilateral
H26.039	Infantile and juvenile nuclear cataract, unspecified eye
H26.041	Anterior subcapsular polar infantile and juvenile cataract, right eye
H26.042	Anterior subcapsular polar infantile and juvenile cataract, left eye
H26.043	Anterior subcapsular polar infantile and juvenile cataract, bilateral
H26.049	Anterior subcapsular polar infantile and juvenile cataract, unspecified eye
H26.051	Posterior subcapsular polar infantile and juvenile cataract, right eye
H26.052	Posterior subcapsular polar infantile and juvenile cataract, left eye
H26.053	Posterior subcapsular polar infantile and juvenile cataract, bilateral
H26.059	Posterior subcapsular polar infantile and juvenile cataract, unspecified eye
H26.061	Combined forms of infantile and juvenile cataract, right eye
H26.062	Combined forms of infantile and juvenile cataract, left eye
H26.063	Combined forms of infantile and juvenile cataract, bilateral
H26.069	Combined forms of infantile and juvenile cataract, unspecified eye
H26.09	Other infantile and juvenile cataract
H26.101	Unspecified traumatic cataract, right eye
H26.102	Unspecified traumatic cataract, left eye
H26.103	Unspecified traumatic cataract, bilateral
H26.109	Unspecified traumatic cataract, unspecified eye
H26.111	Localized traumatic opacities, right eye
H26.112	Localized traumatic opacities, left eye
H26.113	Localized traumatic opacities, bilateral
H26.119	Localized traumatic opacities, unspecified eye
H26.121	Partially resolved traumatic cataract, right eye
H26.122	Partially resolved traumatic cataract, left eye
H26.123	Partially resolved traumatic cataract, bilateral
H26.129	Partially resolved traumatic cataract, unspecified eye
H26.131	Total traumatic cataract, right eye
H26.132	Total traumatic cataract, left eye
H26.133	Total traumatic cataract, bilateral
H26.139	Total traumatic cataract, unspecified eye
H26.20	Unspecified complicated cataract
H26.211	Cataract with neovascularization, right eye
H26.212	Cataract with neovascularization, left eye
H26.213	Cataract with neovascularization, bilateral
H26.219	Cataract with neovascularization, unspecified eye

H26.221	Cataract secondary to ocular disorders (degenerative) (inflammatory), right eye
H26.222	Cataract secondary to ocular disorders (degenerative) (inflammatory), left eye
H26.223	Cataract secondary to ocular disorders (degenerative) (inflammatory), bilateral
H26.229	Cataract secondary to ocular disorders (degenerative) (inflammatory), unspecified eye
H26.231	Glaucomatous flecks (subcapsular), right eye
H26.232	Glaucomatous flecks (subcapsular), left eye
H26.233	Glaucomatous flecks (subcapsular), bilateral
H26.239	Glaucomatous flecks (subcapsular), unspecified eye
H26.30	Drug-induced cataract, unspecified eye
H26.31	Drug-induced cataract, right eye
H26.32	Drug-induced cataract, left eye
H26.33	Drug-induced cataract, bilateral
H26.40	Unspecified secondary cataract
H26.411	Soemmering's ring, right eye
H26.412	Soemmering's ring, left eye
H26.413	Soemmering's ring, bilateral
H26.419	Soemmering's ring, unspecified eye
H26.491	Other secondary cataract, right eye
H26.492	Other secondary cataract, left eye
H26.493	Other secondary cataract, bilateral
H26.499	Other secondary cataract, unspecified eye
H26.8	Other specified cataract
H26.9	Unspecified cataract
H40.10X1	Unspecified open-angle glaucoma, mild stage
H40.10X2	Unspecified open-angle glaucoma, moderate stage
H40.1111	Primary open-angle glaucoma, right eye, mild stage
H40.1112	Primary open-angle glaucoma, right eye, moderate stage
H40.1113	Primary open-angle glaucoma, right eye, severe stage
H40.1114	Primary open-angle glaucoma, right eye, indeterminate stage
H40.1121	Primary open-angle glaucoma, left eye, mild stage
H40.1122	Primary open-angle glaucoma, left eye, moderate stage
H40.1123	Primary open-angle glaucoma, left eye, severe stage
H40.1124	Primary open-angle glaucoma, left eye, indeterminate stage
H40.1131	Primary open-angle glaucoma, bilateral, mild stage
H40.1132	Primary open-angle glaucoma, bilateral, moderate stage
H40.1133	Primary open-angle glaucoma, bilateral, severe stage
H40.1134	Primary open-angle glaucoma, bilateral, indeterminate stage
H40.1191	Primary open-angle glaucoma, unspecified eye, mild stage
H40.1192	Primary open-angle glaucoma, unspecified eye, moderate stage

H40.1211	Low-tension glaucoma, right eye, mild stage
H40.1212	Low-tension glaucoma, right eye, moderate stage
H40.1213	Low-tension glaucoma, right eye, severe stage
H40.1214	Low-tension glaucoma, right eye, indeterminate stage
H40.1221	Low-tension glaucoma, left eye, mild stage
H40.1222	Low-tension glaucoma, left eye, moderate stage
H40.1223	Low-tension glaucoma, right eye, severe stage
H40.1224	Low-tension glaucoma, left eye, indeterminate stage
H40.1231	Low-tension glaucoma, bilateral, mild stage
H40.1232	Low-tension glaucoma, bilateral, moderate stage
H40.1233	Low-tension glaucoma, bilateral, severe stage
H40.1234	Low-tension glaucoma, bilateral, indeterminate stage
H40.1311	Pigmentary glaucoma, right eye, mild stage
H40.1312	Pigmentary glaucoma, right eye, moderate stage
H40.1313	Pigmentary glaucoma, right eye, severe stage
H40.1314	Pigmentary glaucoma, right eye, indeterminate stage
H40.1321	Pigmentary glaucoma, left eye, mild stage
H40.1322	Pigmentary glaucoma, left eye, moderate stage
H40.1323	Pigmentary glaucoma, left eye, severe stage
H40.1324	Pigmentary glaucoma, left eye, indeterminate stage
H40.1331	Pigmentary glaucoma, left eye, mild stage
H40.1332	Pigmentary glaucoma, bilateral, moderate stage
H40.1333	Pigmentary glaucoma, bilateral, severe stage
H40.1334	Pigmentary glaucoma, bilateral, indeterminate stage
H40.1411	Capsular glaucoma with pseudoexfoliation of lens, right eye, mild stage
H40.1412	Capsular glaucoma with pseudoexfoliation of lens, right eye, moderate stage
H40.1413	Capsular glaucoma with pseudoexfoliation of lens, right eye, severe stage
H40.1414	Capsular glaucoma with pseudoexfoliation of lens, right eye, indeterminate stage
H40.1421	Capsular glaucoma with pseudoexfoliation of lens, left eye, mild stage
H40.1422	Capsular glaucoma with pseudoexfoliation of lens, left eye, moderate stage
H40.1423	Capsular glaucoma with pseudoexfoliation of lens, left eye, severe stage
H40.1424	Capsular glaucoma with pseudoexfoliation of lens, left eye, indeterminate stage
H40.1431	Capsular glaucoma with pseudoexfoliation of lens, bilateral, moderate stage
H40.1432	Capsular glaucoma with pseudoexfoliation of lens, bilateral, moderate stage
H40.1433	Capsular glaucoma with pseudoexfoliation of lens, bilateral, severe stage
H40.1434	Capsular glaucoma with pseudoexfoliation of lens, bilateral, indeterminate stage
Q12.0	Congenital cataract

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EmblemHealth

MYvantage® Hereditary Comprehensive Cancer Panel

Last Review Date: December 13, 2019	Number: MG.MM.ME.LA.44a

Background

The MYvantage® Hereditary Comprehensive Cancer Panel from Quest Diagnostics ™ provides a comprehensive analysis of 34 hereditary cancer predisposition genes utilizing next-generation (NGS)/massively parallel sequencing (MPS) technologies.

NCCN overview of multigene testing

- The recent introduction of multi-gene testing for hereditary forms of cancer has rapidly altered the clinical approach to testing at-risk patients and their families. Based on next-generation sequencing technology, these tests simultaneously analyze a set of genes that are associated with a specific family cancer phenotype or multiple phenotypes.
- Patients who have a personal or family history suggestive of a single inherited cancer syndrome are most appropriately managed by genetic testing for that specific syndrome. When more than one gene can explain an inherited cancer syndrome, then multi-gene testing may be more efficient and/or cost effective.
- There may be a role for multi-gene testing in individuals who have tested negative (indeterminate) for a single syndrome, but whose personal or family history remains suggestive of an inherited susceptibility.
- As commercially available tests differ in the specific genes analyzed (as well as classification of variants and many other factors), choosing the specific laboratory and test panel is important.
- Multi-gene testing can include "indeterminate" penetrant (moderate-risk) genes. For many of these genes, there are limited data on the degree of cancer risk and there are no clear guidelines on risk management for carriers of pathogenic/likely pathogenic variants. Not all genes included on available multi-gene tests are necessarily clinically actionable.
- As is the case with high-risk genes, it is possible that the risks associated with moderate-risk genes may not be entirely due to that gene alone, but may be influenced by gene/gene or gene/environment interactions. In addition, certain pathogenic variants in a known pathogenic/likely pathogenic variant alone to assign risk for relatives.

- In many cases the information from testing for moderate penetrance genes does not change risk management compared to that based on family history alone.
- Pathogenic/likely pathogenic variants in many breast cancer susceptibility genes involved in DNA repair may be associated with rare autosomal recessive conditions.
- It is for these and other reasons that multi-gene testing is ideally offered in the context of professional genetic expertise for pre-and post-test counseling. (Individuals with the recommended expertise include certified genetic counselors, as well as clinicians who have had extensive training and/or experience in identification and management of hereditary syndromes)

Related Medical Guidelines

BRCA 1 and 2 Genetic Testing (Sequence Analysis/Rearrangement)
Genetic Testing for Colorectal Cancer / Lynch Syndrome
Genetic Testing for PTEN Hamartoma Tumor Syndrome

Guideline (Criteria A, B or C may be applied)

A. MYvantage® testing is considered medically necessary when results will directly impact surveillance or treatment and one or more of the following criteria are met:

- Individual from a family with a known deleterious mutation in a gene on the Myvantage panel
- Personal history of breast cancer (includes invasive and ductal carcinoma in situ) + one or more of the following:
  - Diagnosed ≤ 45 y
  - Diagnosed 46–50 y with:
    - An additional breast cancer primary at any age (Note: Two breast cancer primaries includes bilateral [contralateral] disease or two or more clearly separate ipsilateral primary tumors either synchronously or asynchronously)
    - ≥ 1 close blood relative with breast cancer at any age
    - ≥ 1 relative with prostate cancer (Gleason score ≥ 7 or metastatic)
    - An unknown or limited family history
- Diagnosed ≤ 60 y with:
  - Triple negative breast cancer
- Diagnosed at any age with:
  - ≥ 2 close blood relatives with breast cancer at any age
  - ≥ 1 close blood relative with pancreatic cancer
  - ≥ 1 close blood relative with metastatic prostate cancer
  - ≥ 1 close blood relative with breast cancer diagnosed ≤ 50 y
  - ≥ 1 close blood relative with ovarian carcinoma
  - A close male blood relative with breast cancer
  - For an individual of ethnicity associated with higher mutation frequency (eg, Ashkenazi Jewish) no additional family history may be required (Note: Testing for Jewish Ashkenazi founder-specific mutation[s] should be performed first. Comprehensive genetic testing may be considered if ancestry also includes non-Ashkenazi Jewish relatives or if other BRCA-related criteria are met. Founder mutations exist in other populations)
  - 3 or more diagnoses of breast cancer in patient and/or close blood relative

- Personal history of ovarian carcinoma
- Personal history of male breast cancer
- Personal history of high-grade prostate cancer (Gleason score ≥ 7) at any age with ≥ 1 close blood relative with ovarian carcinoma at any age or breast cancer ≤ 50 y or two relatives with breast, pancreatic, or prostate cancer (Gleason score ≥ 7or metastatic) at any age
- Personal history of metastatic prostate cancer (radiographic evidence of or biopsy-proven disease)
- Personal history of pancreatic cancer at any age with ≥ 1 close blood relative with ovarian carcinoma at any age or breast cancer ≤ 50 y or two relatives with breast, pancreatic cancer, or prostate cancer (Gleason score ≥ 7or metastatic) at any age or Ashkenazi Jewish ancestry
  • Personal history of pancreatic cancer and Ashkenazi Jewish ancestry
- Pathogenic mutation detected by tumor profiling on any tumor type in the absence of germline mutation analysis in any gene that would have clinical implications if found in the germline
- Family history only (significant limitations of interpreting test results for an unaffected individual should be discussed):
  - First- or second-degree blood relative meeting any of the above criteria
  - Third-degree blood relative who has breast cancer and/or ovarian carcinoma (includes fallopian tube and primary peritoneal cancers) and who has ≥ 2 close blood relatives with breast cancer (at least one with breast cancer ≤ 50 y) and/or ovarian carcinoma
- Unaffected/asymptomatic member with positive family history of hereditary breast and ovarian cancer (HBOC) syndrome

Note: Members are eligible for BRCA 1 and 2 rearrangement testing if the criteria for comprehensive sequence analysis are met and the analysis is negative.

B. Applicable to microsatellite instability (MSI), LS/HNPCC (MLH1, MSH2, MSH6, PMS2, EPCAM), FAP coli and attenuated FAP coli (APC genetic testing), MYH-associated neoplasia or MAP (MYH genetic testing)

1. MYvantage® testing is also considered medically necessary when all the following are present:

   Diagnosis or screening, as indicated by 1 or more of the following:

   a. EPCAM, MLH1, MSH2, MSH6, or PMS2 gene or limited gene panel (i.e., EPCAM, MLH1, MSH2, MSH6, PMS2 genes) testing when personal history increases risk, as indicated by 1 or more of the following:

      i. Personal history of colorectal cancer diagnosed before age 50 years
      ii. Personal history of colorectal cancer and 1 or more additional positively diagnosed tumors associated with Lynch syndrome[A] regardless of age
      iii. Personal history of colorectal or endometrial cancer, and one or more first-degree[B] or second degree[C] relatives with Lynch syndrome-related cancer diagnosed before age 50 years
      iv. Personal history of colorectal or endometrial cancer, and 2 or more first-degree [B] or second degree[C] relatives with Lynch syndrome-related cancers, regardless of age

v. Personal history of colorectal cancer or endometrial cancer with high microsatellite instability or pathologic immunohistochemistry on cancer tissue testing[D]
vi. Personal history of endometrial cancer diagnosed before age 50 years
vii. Personal history of synchronous (simultaneous) or metachronous (diagnosed at different times) colorectal cancer or Lynch syndrome-related tumors[A] regardless of age
viii. Member with a LS-related cancer [A] or unaffected member with a ≥5% risk of having an MMR gene mutation based on predictive models (PREMM5, MMRpro, MMRpredict)

b. EPCAM, MLH1, MSH2, MSH6, or PMS2 gene testing when family history increases risk, as indicated by 1 or more of the following:
i. First-degree relative[B] of person with known EPCAM, MLH1, MSH2, MSH6, or PMS2 gene mutation by DNA sequence testing
ii. One or more first-degree relatives[B] diagnosed with colorectal cancer or Lynch syndrome related tumor[A] before age 50 years
iii. One or more first-degree relatives[B] with colorectal or endometrial cancer, and another synchronous or metachronous Lynch syndrome-related cancer
iv. Two or more first-degree[B] or second-degree[C] relatives diagnosed with colorectal cancer or Lynch syndrome-related tumor, [A] with at least 1 diagnosed before age 50 years
v. Three or more first-degree[B] or second-degree[C] relatives with Lynch syndrome-related cancers, regardless of age

Footnotes

[**A**] Lynch syndrome-related tumors include colorectal, endometrial, stomach, small bowel, ovarian, pancreas, prostate, ureter and renal pelvis, biliary tract, brain/CNS, and skin (eg, sebaceous gland adenomas, keratoacanthomas) tumors

[**B**] First-degree relatives consist of male or female parents, siblings, or children

[**C**] Second-degree relatives consist of male or female grandparents, grandchildren, aunts, uncles, nieces, nephews, or half-siblings.

[**D**] Loss of protein expression of the MLH1 gene on immunohistochemistry and subsequent positive BRAF mutation virtually excludes Lynch syndrome and obviates the need for germline mismatch repair gene testing; the added step of BRAF mutation testing is thought to avoid nearly half of mismatch repair gene mutation testing. Histology that is suggestive of the need to perform microsatellite instability testing includes tumor infiltrating lymphocytes, Crohn-like lymphocytic reaction, mucinous or signet ring differentiation, or medullary growth pattern

2. Familial adenomatous polyposis (FAP) coli or attenuated FAP; 1 of the following:
a. Member has > 10 colorectal adenomatous polyps
b. Member has a 1st degree relative(s) with a known APC mutation
c. The individual has a personal history of a desmoid tumor

Note: APC negative members should be tested for MUTYH. Members with Serrated Polyposis Syndrome with associated adenomas should also be tested for MUTYH.

Limitations/Exclusions

For detection of APCI1307K, an APC missense mutation of unclear clinical significance found in Ashkenazi Jewish population.

C. In addition, MYvantage® testing is considered medically necessary for members with a personal history of one of the following 4 cancer diagnoses:

- Endocrine (multiple endocrine neoplasia [MEN] types 1 or 2)
- Gastric
- Melanoma
- Pancreatic

A letter of medical necessity must accompany the request.

Limitations/Exclusions

- Testing with MYvantage is not considered medically necessary for any indication other than those listed in A, B or C above.
- Testing with MYvantage is not considered medically necessary for general population screening.

Revision History

Dec. 13, 2019 — imported criteria from BRCA 1 and 2 Genetic Testing (Sequence Analysis/Rearrangement) and Genetic Testing for Colorectal Cancer / Lynch Syndrome policies to denote applicability to MYvantage and added coverage for members with certain personal cancers.

Applicable Procedure Codes

81432	Hereditary breast cancer-related disorders (eg, hereditary breast cancer, hereditary ovarian cancer, hereditary endometrial cancer); genomic sequence analysis panel, must include sequencing of at least 10 genes, always including BRCA1, BRCA2, CDH1, MLH1, MSH2, MSH6, PALB2, PTEN, STK11, and TP53
81433	Hereditary breast cancer-related disorders (eg, hereditary breast cancer, hereditary ovarian cancer, hereditary endometrial cancer); duplication/deletion analysis panel, must include analyses for BRCA1, BRCA2, MLH1, MSH2, and STK11
81435	Hereditary colon cancer disorders (eg, Lynch syndrome, PTEN hamartoma syndrome, Cowden syndrome, familial adenomatosis polyposis); genomic sequence analysis panel, must include sequencing of at least 10 genes, including APC, BMPR1A, CDH1, MLH1, MSH2, MSH6, MUTYH, PTEN, SMAD4, and STK11
81436	Hereditary colon cancer disorders (eg, Lynch syndrome, PTEN hamartoma syndrome, Cowden syndrome, familial adenomatosis polyposis); duplication/deletion analysis panel, must include analysis of at least 5 genes, including MLH1, MSH2, EPCAM, SMAD4, and STK11

Applicable Diagnosis Codes

Note: As per coding guidelines, the following codes may not be reported as the principal/first-listed diagnosis.

Z85.028	Personal history of other malignant neoplasm of stomach
Z85.038	Personal history of other malignant neoplasm of large intestine
Z85.07	Personal history of malignant neoplasm of pancreas
Z85.3	Personal history of malignant neoplasm of breast
Z85.41	Personal history of malignant neoplasm of cervix uteri
Z85.43	Personal history of malignant neoplasm of ovary
Z85.46	Personal history of malignant neoplasm of prostate
Z85.820	Personal history of malignant melanoma of skin
Z85.858	Personal history of malignant neoplasm of other endocrine glands

References

1. GTR: Genetic Testing Registry. MyVantage™ Hereditary Comprehensive Cancer Panel. https://www.ncbi.nlm.nih.gov/gtr/tests/552183/. Accessed January 23, 2020.
2. National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology. Genetic/familial high-risk assessment: colorectal. V3.2019. Rockledge, PA: National Comprehensive Cancer Network, 2016. https://www.nccn.org/professionals/physician_gls/pdf/genetics_colon.pdf. Accessed January 23, 2020.
3. National Comprehensive Cancer Network. NCCN clinical practice guidelines in oncology. Genetic/familial high-risk assessment: breast and ovarian. V1.2020. Rockledge, PA: National Comprehensive Cancer Network, 2017. https://www.nccn.org/professionals/physician_gls/pdf/genetics_screening.pdf. Accessed January 23, 2020, 2019.
4. Specialty matched clinical peer review.

EmblemHealth

Posterior Tibial Nerve Stimulation for Voiding Dysfunction

Last Review Date: January 10, 2020	Number: MG.MM.ME.67b

Definitions

Percutaneous Tibial Nerve Stimulation (PTNS)	A technique of electrical neuromodulation for the treatment of voiding dysfunction in patients who have failed behavioral and /or pharmacologic therapies. This is the least invasive form of neuromodulation used to treat overactive bladder (OAB) and the associated symptoms of urinary urgency, urinary frequency and urge incontinence. Common causes of voiding dysfunction are pelvic floor dysfunction (e.g., from pregnancy, childbirth, surgery), inflammation, medication (e.g., diuretics and anticholinergics), obesity, psychogenic factors, and disease (e.g., multiple sclerosis, spinal cord injury, detrusor hyper-reflexia). PTNS treatment consists of a series of short-term insertions of a percutaneous needle electrode for approximately 30 minutes, with intermittent neuromodulation while the needle electrode remains in place. The neurostimulator includes a lead set with surface electrodes and a needle electrode, which produces an adjustable electrical pulse that travels to the sacral nerve plexus via the tibial nerve. The sacral nerve plexus then regulates the bladder and the pelvic floor functionality.
Increased Daytime Frequency	The complaint by the individual who considers that he/she voids too often during the day.
Nocturia	The complaint that the individual has to wake at night one or more times to urinate.
Urgency	The complaint of a sudden compelling desire to pass urine, which is difficult to defer.
Urinary Incontinence	The complaint of any involuntary leakage of urine.

Guideline

Treatment with PTNS for OAB in the office setting is considered medically necessary when all the following criteria are documented as met:

1. Evaluation by an appropriate specialist (e.g., urologist or urogynecologist) who has determined that the member is a candidate for PTNS
2. Failure of conservative behavioral therapies for a period of ≥ 3 months duration

   The medical record should reflect the member's willingness to:

   a. Attend in-office treatment sessions
   b. Comply with the behavioral therapies
   c. Maintain voiding diaries, which documents behavioral therapy compliance and shows continued findings of OAB syndrome
3. Failure/intolerance/contraindication to pharmacotherapy with ≥ 2 overactive bladder medications such as an anticholinergic and/or β3 agonist administered for 4–8 weeks

Limitations/Exclusions

1. Initial course of PTNS treatment is defined as one 30-minute session per week for 12 consecutive weeks.
2. Continuation of PTNS is covered for members who complete and show response to the 12-week treatment regimen.

   Response is defined as ≥ 50% improvement in voiding symptoms (based on documentation such as patient voiding diaries). The treatment regimen for continued PTNS is tailored to each individual member; typically 1 treatment administered every 2–3 weeks (26 treatments per 12 month maximum).
3. Treatment with PTNS is not considered medically necessary for any of the following conditions due to insufficient evidence of therapeutic value (list not all-inclusive):
   a. Chronic pelvic pain
   b. Constipation
   c. Fecal incontinence
   d. Voiding dysfunction secondary to a neurological condition
4. Implantable tibial nerve stimulation not considered medically necessary due to insufficient evidence of therapeutic value.

Revision History

Jan. 10, 2010	Added implantable TNS to Limitations/Exclusions as investigational.
Jul. 12, 2019	The indication of failure/intolerance/contraindication to pharmacotherapy with ≥ 2 anticholinergic medications and/or smooth muscle relaxants was clarified to include overactive bladder and β3 agonist medications.

Applicable Procedure Codes

64566	Posterior tibial neurostimulation, percutaneous needle electrode, single treatment, includes programming

Applicable Diagnosis Codes

N32.81	Overactive bladder
N39.41	Urge incontinence
R35.0	Frequency of micturition
R39.15	Urgency of urination

References

Agency for Healthcare Research and Quality. Comparative effectiveness review number 36. Nonsurgical treatments for urinary incontinence in adult women: diagnosis and comparative effectiveness. 2012. https://www.ncbi.nlm.nih.gov/pubmed/22624162**.** Accessed January 21, 2020.

American Urological Association (AUA) and Society of Urodynamics FPMURS. Diagnosis and treatment of overactive bladder (non-neurogenic) in adults/AUA/SUFU guideline 2012; Amended 2014. http://www.auanet.org/guidelines/overactive-bladder-(oab)-(aua/sufu-guideline-2012-amended-2014)**.** Accessed January 21, 2020.

National Government Services. Local Coverage Determination (LCD): Posterior Tibial Nerve Stimulation for Voiding Dysfunction. October 2015. https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=33396&ver=6&DocType=All&bc=AgIAAAAAAAAAAA%3d%3d&**.** Accessed January 21, 2020 .

Specially matched clinical peer review.

EmblemHealth

Rhinoplasty

Last Review Date: March 13, 2020	Number: MG.MM.SU.08h

Definitions

Rhinoplasty is a surgical procedure of the nose to correct external nasal deformity while maintaining, restoring or improving nasal function.

Related Medical Guidelines

Cosmetic Surgery Procedures
Septoplasty

Guideline

Members are eligible for rhinoplasty when **either** of the following criteria is met and high-quality photographs (including endoscopy photos, as applicable) are provided in four views (right and left lateral, anterior, and base or worm's view):[1]

1. Performed in conjunction with a septoplasty for nasal airway obstruction when the nasal deformity contributes to the airway obstruction and septoplasty criteria are met.
2. Performed as part of reconstruction for severe deformity when documented obstructive breathing symptoms secondary to any of the following are present:
    - Excision of a nasal abscess.
    - Excision of a malignant mass.
    - Osteomyelitis.
    - Cleft lip and/or palate repair.
    - Nasal trauma or injury within a 18 month period that resulted in significant deviation of the nasal pyramid or a creation of a significant dorsal hump. Documentation of care by

[1] The Plan must receive substantiating documentation that demonstrates the presence of nasal obstruction as a prerequisite to a medical necessity evaluation by a Medical Director.

physician at time of the trauma and x-ray evidence of fracture of the nasal bones or facial bones must be submitted upon request.

- Nasal dermoid
- Saddle nose deformity' from a large septal perforation either from surgery, trauma, or disease (Granulomatosis with Polyangiitis).
- Vestibular stenosis for prolonged nasal obstruction which is moderate to severe, separate from obstruction caused by deviated septum or turbinate hypertrophy, and causing problems such as breathing difficulty, bleeding, or sinusitis

Limitations/Exclusions

Rhinoplasty is not covered when any of the following are applicable:

1. Performed solely to change appearance in the absence of any signs or symptoms of functional abnormalities or nasal defects, as this would be considered cosmetic.
2. For treatment of polyps not causing severe deformity.

Revision History

Mar. 13, 2020 — added nasal dermoid, saddle nose deformity and vestibular stenosis as covered indications.

Applicable Procedure Codes

30124	Excision dermoid cyst, nose; simple, skin, subcutaneous
30125	Excision dermoid cyst, nose; complex, under bone or cartilage
30400	Rhinoplasty, primary; lateral and alar cartilages and/or elevation of nasal tip
30410	Rhinoplasty, primary; complete, external parts including bony pyramid, lateral and alar cartilages, and/or elevation of nasal tip
30420	Rhinoplasty, primary; including major septal repair
30430	Rhinoplasty, secondary; minor revision (small amount of nasal tip work)
30435	Rhinoplasty, secondary; intermediate revision (bony work with osteotomies)
30450	Rhinoplasty, secondary; major revision (nasal tip work and osteotomies)
30460	Rhinoplasty for nasal deformity secondary to congenital cleft lip and/or palate, including columellar lengthening; tip only
30462	Rhinoplasty for nasal deformity secondary to congenital cleft lip and/or palate, including columellar lengthening; tip, septum, osteotomies
30465	Repair of nasal vestibular stenosis (eg, spreader grafting, lateral nasal wall reconstruction)

Applicable ICD-10 Diagnosis Codes

C11.3	Malignant neoplasm of anterior wall of nasopharynx
C30.0	Malignant neoplasm of nasal cavity
C43.31	Malignant melanoma of nose
C44.311	Basal cell carcinoma of skin of nose
C44.321	Squamous cell carcinoma of skin of nose
C44.391	Other specified malignant neoplasm of skin of nose
D14.0	Benign neoplasm of middle ear, nasal cavity and accessory sinuses
D38.5	Neoplasm of uncertain behavior of other respiratory organs
D49.1	Neoplasm of unspecified behavior of respiratory system
J34.0	Abscess, furuncle and carbuncle of nose
J34.1	Cyst and mucocele of nose and nasal sinus
J34.89	Other specified disorders of nose and nasal sinuses
J34.9	Unspecified disorder of nose and nasal sinuses
M86.68	Other chronic osteomyelitis, other site
M86.8X8	Other osteomyelitis, other site
M95.0	Acquired deformity of nose
Q30.1	Agenesis and underdevelopment of nose
Q30.2	Fissured, notched and cleft nose
Q30.3	Congenital perforated nasal septum
Q30.8	Other congenital malformations of nose
Q35.1	Cleft hard palate
Q35.3	Cleft soft palate
Q35.5	Cleft hard palate with cleft soft palate
Q35.9	Cleft palate, unspecified
Q36.0	Cleft lip, bilateral
Q36.1	Cleft lip, median
Q36.9	Cleft lip, unilateral
Q37.0	Cleft hard palate with bilateral cleft lip
Q37.1	Cleft hard palate with unilateral cleft lip
Q37.2	Cleft soft palate with bilateral cleft lip
Q37.3	Cleft soft palate with unilateral cleft lip
Q37.4	Cleft hard and soft palate with bilateral cleft lip
Q37.5	Cleft hard and soft palate with unilateral cleft lip
Q37.8	Unspecified cleft palate with bilateral cleft lip
Q37.9	Unspecified cleft palate with unilateral cleft lip
S00.30XA	Unspecified superficial injury of nose, initial encounter
S01.20XA	Unspecified open wound of nose, initial encounter
S01.21XA	Laceration without foreign body of nose, initial encounter
S01.22XA	Laceration with foreign body of nose, initial encounter
S01.23XA	Puncture wound without foreign body of nose, initial encounter
S01.24XA	Puncture wound with foreign body of nose, initial encounter
S01.25XA	Open bite of nose, initial encounter
S02.2XXA	Fracture of nasal bones, initial encounter for closed fracture
S02.2XXB	Fracture of nasal bones, initial encounter for open fracture
S07.0XXA	Crushing injury of face, initial encounter
S08.811A	Complete traumatic amputation of nose, initial encounter
S08.812A	Partial traumatic amputation of nose, initial encounter

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Cummings. Otolaryngology Head and Neck Surgery 2010. 5th Edition.

Specialty-matched clinical peer review.

THE AMERICAN ACADEMY OF HIV MEDICINE ■ JUNE 2020

HIV SPECIALIST

At the Intersection of PANDEMIC and EPIDEMIC

Healthcare providers adapt to evolving circumsatnces

The Impact of COVID-19 on HIV Practice

Refilling Prescriptions during Challenging Times

Trichomonas Vaginalis in Women

Helping Your Patients with Social Security Disability Benefits

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FEATURES

DEPARTMENTS

LETTER FROM THE

DIRECTOR

By BRUCE J. PACKETT II
Executive Director, AAHIVM

Novel Virus, Familiar Disparities

2020 has been an "at the time this was written" kind of year, and this edition of the *HIV Specialist* mirrors that leitmotif. The articles written herein are a snapshot in time of an evolving, all-consuming worldwide pandemic, and we hope they are still accurate and relevant as you read them. As a professional healthcare organization, obviously we felt compelled to devote much of the entire June issue to COVID-19 concerns (while still maintaining an HIV focus), even as many providers are starting to feel a kind of "coronavirus fatigue" with regard to medical narratives, clinical trainings, guidelines and strategies—and really just a full saturation of attention from all media.

It's hard to predict exactly what the SARS-CoV2 pandemic will look like when this magazine goes to print and arrives on your desks. Nevertheless, there are emerging universal themes in viral pandemics like HIV and COVID-19 that allow us to retain certain lessons. As Dr. Birx pointed out early on, there's still a lot to learn from and remember about the early days of HIV/AIDS, as we confront another novel virus. I started working in the field well after HIV became considered - due to incredible treatment advances—a chronic condition, as opposed to the dire prognosis of the 80s and 90s. Many of the medical providers who worked on the clinical frontlines in the early days of "GRID", AIDS, HIV and so on are aging out of the workforce and have the stories to tell. They've seen something like this before and can apply those themes to clinics dealing with something similar today.

One of those themes, quite obviously, is disparities in health outcomes for blacks and other minorities in the US. Going back to the "at the time this was written" point, as I push these computer keys into my laptop, I can hear the now-ambient, ubiquitous sound of helicopters circling low over Washington, DC. Protests, most peaceful, some less so, have been raging in this and many other cities since the brutal killing of yet another unarmed black citizen by agents of the state. The protests were certainly triggered by police brutality, but have come to be infused, inevitably, with a much broader outcry against systemic racism. They could just as easily be about the staggering disproportionate effect of the coronavirus outbreak on black communities, where the mortality rate is about two and a half times higher than white Americans. As with HIV, this is not just about the microbiology of viruses.

Many of the changes to healthcare systems that we are witnessing now will likely be an engrained part of care delivery long term. New ways of caring for HIV patients, and those at risk, are being refined, as in-person clinic visits are restricted. There is cause for optimism here, even if there remain challenges. We need to learn more, too, about how the coronavirus interacts with HIV. Likely there are hundreds if not thousands of HIV patients who have acquired SARS-CoV2 in the US, and there is a strong desire to understand how that co-infection relates and responds to specific ARV regimens, CD4 counts, other OIs and any of the salient clinical markers of HIV disease. The Academy is co-sponsoring an HIV/COVID-19 registry started by the Institute of Human Virology at the University of Maryland in an effort to garner more clinical data on co-infections. You can read more about the registry here in this issue, and we hope you will participate.

As always, Academy members, HIV specialists and other frontline providers are the heroes of this story, not only in fighting a new virus, but also in advocating for and pursuing equality in healthcare access and outcomes for all patients regardless of demographics. We know "business as usual" is a difficult proposition at this juncture; but HIV care providers are trained and prepared for moments exactly like these. Thank you.

IN THE NEWS

Ryan White Providers to Receive Funds Through the CARES Act

RYAN WHITE HIV/AIDS PROGRAM (RWHAP) providers will receive grant awards from the Department of Health and Human Services (DHHS) enabling them to "prevent, prepare and respond" to COVID-19 as it affects RWHAP clients. In late March, Congress allocated $90 million to be distributed to 581 RWCA grantees through the passage of the 2020 Coronavirus Aid, Relief and Economic Security Act or CARES (Public Law 116-136). CARES is designed to enable RWCAP providers to pay for their sudden and heavy COVID-related expenses. The grant allows reimbursement of related expenses to be dated back to January 20, as well as throughout the rest of the year.

CARES enables HIV health care services and providers to cope with the costs incurred by the combination of COVID-19 risk and HIV. It addresses a broad array of costs, including technical assistance and workforce training for RWCA personnel on COVID-19, overtime pay, expanded operating hours and adapting systems to provide safe home-based meals and transportation assistance that meet social distancing requirements.

While DHHS clearly specifies that "all RWHAP COVID-19 awards must be used for services, activities and supplies needed to minimize the impact of COVID-19 on RWHAP clients," there are still questions as to what will or will not be covered by the Act. DHHS' "Frequently Asked Questions #CARES" document addresses many of these.

Some states are seeing this emergency funding as a much-needed windfall—not only due to the COVID-19 pandemic, but also as a response to the long-term, chronic underfunding they have endured. In 2018, for example, New Mexico's RWHAP services were provided to only 2100 out of the 3500 eligible state residents living with HIV. Further, 10.5 percent of the state's residents have no health insurance at all. U.S. Senator Tom Udal (D-NM), in a recent press conference said, "I will continue to fight for New Mexicans in subsequent coronavirus funding packages to increase support for critical programs like Ryan White funds that are vital to the health and well-being of our families and communities."

HRSA Funding Opportunity Supports HIV Care Planning in 7 Rural EHE States

The Health Resources and Services Administration's Federal Office of Rural Health Policy (FORHP) has issued a funding opportunity announcement under the Rural HIV/AIDS Planning Program to assist in the development of an integrated rural HIV health network for HIV care and treatment that will collaboratively plan to address key strategies identified in *Ending the HIV Epidemic: A Plan for America* (EHE). Rural public and rural nonprofit private health care provider organizations or providers of health care services in the seven states (Alabama, Arkansas, Kentucky, Mississippi, Missouri, Oklahoma and South Carolina) prioritized in the first phase of EHE because of a substantial number of HIV diagnoses in rural areas are eligible to apply.

Up to $1 million is available to support up to ten $100,000 one-year awards. Applications are due by July 10, 2020, with an anticipated project start of September 1, 2020.

U.S. Department of Health & Human Services
HRSA
Federal Office of Rural Health Policy

HRSA defines a rural HIV health network (also called consortium) as an organizational arrangement among at least three separately owned regional or local health care providers that come together to develop strategies for improving health services delivery systems in a community. Health networks can be an effective strategy to help smaller rural health care providers and health care service organizations align resources, achieve economies of scale and efficiencies, collaboratively address challenges, and create impactful, innovative solutions.

The Rural HIV/AIDS Planning program offers rural health care providers the opportunity to collaborate on a plan to address community HIV needs, gaps, and challenges, including issues related to the need for early diagnosis, comprehensive care that includes support services such as transportation, substance use treatment, innovative service delivery models with the goal of improving health outcomes among people with HIV, addressing stigma, and reducing the number of new HIV infections. The intent is for rural HIV health networks to expand access to HIV care, increase the use of health information technology such as Centers for Disease Control and Prevention data to care models, use telemedicine models for training and care, partner with Ryan White HIV/AIDS Program (RWHAP) recipients, explore innovative health care delivery models, and continue to promote quality health care across the continuum of care.

For more information on eligibility and other requirements as well as the application, visit HRSA's grants page.

IN THE NEWS

CDC Offers New Guidance on PrEP During COVID-19

THE CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) developed guidance for providing PrEP when facility-based services and in-person patient-clinician contact is limited. For programs experiencing disruption in PrEP clinical services, CDC offers the following guidance for clinics to consider in the context of local resources and staff availability.

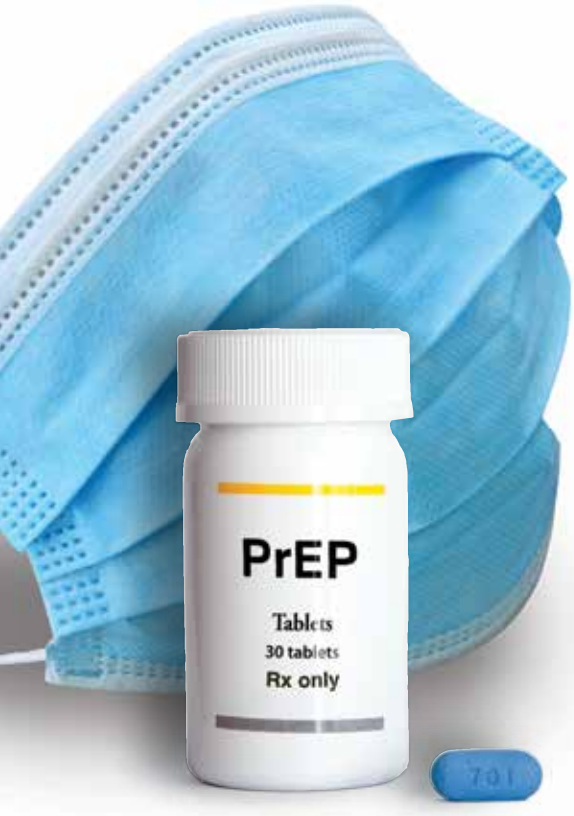
1. Reducing the number of new HIV infections remains a public health priority, and providing PrEP care is an essential health service. Clinicians should continue to ensure the availability of PrEP for patients newly initiating PrEP and patients continuing PrEP use.

2. Quarterly HIV testing should be continued for patient safety. Lab-only visits for assessment of HIV infection and other indicated tests for the provision of PrEP are preferred. When these are not available or feasible, CDC recommends considering two additional options.
   - The first option is a home specimen collection kit for HIV and sexually transmitted infection (STI) tests, which is covered by most insurance plans and can be ordered by clinicians. Some laboratories (such as Molecular Testing LabsTM) have validated protocols for testing home-collected samples for the panel of tests required for those initiating or continuing PrEP. Specimen kits are mailed to the patient's home and contain supplies to collect blood from a fingerstick or other appropriate method (e.g. self-collected swabs and urine). The kit is then mailed back to the lab with test results returned to the clinician who acts on results accordingly. This laboratory-conducted test is sensitive enough to detect recent HIV infection.
   - The second option is self-testing via an oral swab-based test. Although this type of HIV self-test is usually not recommended for PrEP patients due to its lower sensitivity in detecting recent HIV infection during PrEP use, clinicians could consider use of these tests when other options are not available.

3. When HIV-negative status is confirmed, consider providing a prescription for a 90-day supply of PrEP medication (rather than a 30-day supply with two refills) to minimize trips to the pharmacy and to facilitate PrEP adherence. Several programs are available to help provide affordable PrEP medication including Ready, Set, PrEP , a nationwide program that makes PrEP medications available at no cost to individuals who qualify and lack prescription drug coverage; state drug assistance programs; and Gilead's Medication Assistance Program (MAP) , which assists eligible HIV-negative adults in the United States who require assistance paying for PrEP.

4. If a PrEP clinic is considering closing or suspending services temporarily, health care providers should establish referral relationships with other clinics, telemedicine services, or pharmacies so that clients may remain engaged in PrEP care.

If PrEP clinical services have not been disrupted, providers should continue to follow recommendations outlined in the 2017 PrEP Clinical Guidelines and Clinical Providers' Supplement. To further ensure safe delivery of critical public health services, CDC has issued guidance for protecting public health workers engaged in public health activities that require face-to-face interaction.



SHUTTERSTOCK/ DECH ST/ ULRIC GIEZENDANNER

NIH Study: Long-Acting Injectable Drug Prevents HIV Among Men Who Have Sex with Men and Transgender Women

AN INVESTIGATIONAL long-acting form of the HIV drug cabotegravir injected once every 8 weeks safely and effectively prevents HIV acquisition in men who have sex with men and transgender women who have sex with men. This finding, from a planned interim analysis of study data, marks the first time a large-scale clinical trial has shown a systemic, long-acting form of HIV prevention to be highly effective. The trial and an ongoing companion study evaluating long-acting injectable cabotegravir for HIV prevention in women are sponsored by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health.

Daily oral pills containing the drugs tenofovir and emtricitabine, such as Truvada or Descovy, are the only currently FDA-approved form of HIV pre-exposure prophylaxis, or PrEP. Taking a daily pill while feeling healthy can be challenging for some people, so investigators have been working to develop a long-acting alternative to oral PrEP that would be at least equally effective at preventing HIV. Such a long-acting prevention method may offer an easier, discreet option that may be more desirable for some people.

NIAID collaborated on the Phase 2b/3 clinical trial in men who have sex with men and transgender women with ViiV Healthcare, Gilead Sciences, Inc., and the NIH-funded HIV Prevention Trials Network (HPTN). NIAID and ViiV Healthcare co-funded the trial, called HPTN 083, and ViiV Healthcare and Gilead Sciences, Inc., provided the study medications.

Beginning in 2016, the HPTN 083 study team enrolled 4,570 HIV-negative men who have sex with men and transgender women who have sex with men at 43 sites in Argentina, Brazil, Peru, South Africa, Thailand, the United States and Vietnam. The participants were considered at risk for HIV acquisition. Two-thirds of study participants were under 30 years of age, and 12 percent were transgender women. Half of the participants in the United States identified as black or African American. Participants were randomly assigned to receive either injections of cabotegravir and placebo oral tablets or placebo injections and daily oral Truvada tablets. Neither the participants nor the study team knew who was receiving which medication.

In a planned interim review of HPTN 083 on May 14, 2020, an independent data and safety monitoring board (DSMB) found that the study data clearly indicated that long-acting injectable cabotegravir was highly effective at preventing HIV in the study population. Among the 50 people in the trial who acquired HIV, 12 were receiving long-acting cabotegravir and 38 were receiving daily oral Truvada. This translated to an HIV incidence rate of 0.38 percent (95% confidence interval [CI] 0.20%-0.66%) in the cabotegravir group and 1.21 percent (95% CI 0.86%-1.66%) in the Truvada group.

Both cabotegravir and Truvada were generally safe and well-tolerated in the study population, and the DSMB found no safety concerns. Most participants in the cabotegravir group (80%) reported pain or tenderness at the injection site, compared to only 31 percent of those in the Truvada group, who received placebo injections.

Consequently, the DSMB recommended that NIAID stop the blinded phase of the trial, which was originally expected to continue until 2021, and share the results. NIAID has accepted the DSMB's recommendations and is releasing the results now to serve the interests of public health. The study investigators will report more detailed information about the HPTN 083 results in the coming weeks.

The HPTN 083 study team and participants are being notified of the study results. All study participants, including those who initially received Truvada, will be offered long-acting cabotegravir as soon as it can be made available. Study investigators will continue following HPTN 083 participants to gather additional data about the long-term safety of injectable cabotegravir for HIV prevention.

The DSMB also reviewed data on May 14 from the Phase 3 companion study of long-acting cabotegravir for HIV prevention in women in southern and east Africa, called HPTN 084. That trial began a year later than HPTN 083, and the DSMB recommended that it continue as planned. To date, more than 3,000 sexually active women in seven African countries have enrolled in HPTN 084, which is co-funded by NIAID, ViiV Healthcare and the Bill & Melinda Gates Foundation.

More information about HPTN 083 and HPTN 084 is available on ClinicalTrials.gov using the identifiers NCT02720094 and NCT03164564, respectively.

ISTOCK/ FRANCK REPORTER

IN THE NEWS

Academy joins Lambda Legal to Urge Supreme Court to Uphold the Affordable Care Act

THE AMERICAN ACADEMY OF HIV MEDICINE is one of 16 non-profit HIV organizations that joined Lambda Legal and Ropes & Gray to file a friend-of-the-court brief with the U.S. Supreme Court arguing in support of 19 states and DC, led by California, and the U.S. House of Representatives who are collectively defending the Affordable Care Act (ACA). The brief also appeals a ruling from the Fifth Circuit Court of Appeals that invalidates a key provision of the ACA and threatens the law in its entirety.

In the brief, Lambda Legal urges the Court to uphold the constitutionality of the ACA and describes the role it has had in expanding health care coverage for people living with HIV, particularly those with lower incomes or who have faced barriers to care in the past such as LGBTQ people and people of color.

"The COVID-19 pandemic highlights why broad and easy access to health care is so important. As a country, we must ensure access to health insurance and comprehensive, affordable care. The ACA, and in particular its expansion of Medicaid, has helped countless people obtain health insurance who were otherwise left to fend for themselves when they got sick. Its antidiscrimination protections on the basis of sex, race, disability, and those who have pre-existing conditions such as HIV have been critical to eliminating barriers to health care," said Omar Gonzalez-Pagan, Senior Attorney and Health Care Strategist at Lambda Legal.

"If the Court does not uphold the ACA, the impacts to our communities, especially on LGBTQ people and people living with HIV who are people of color and lower-income, will be catastrophic."

ACA reforms have helped an estimated 20 million people obtain health insurance and with it access to lifesaving medical care, including many living with HIV who were previously denied coverage because their HIV status constituted a pre-existing condition or because they simply could not afford it.

"By making HIV testing, PrEP and antiretroviral medications more easily accessible, the ACA has ushered in an era of new progress in the fight against HIV," said Scott Schoettes, HIV Project Director at Lambda Legal.

"We are starting to see the positive impact of this policy in reduced rates of HIV transmission in states like Louisiana and Illinois, which have reported significant drops in new cases. An end to the HIV epidemic is within reach and to dismantle a successful health policy that has made that level of optimism possible is unfathomable."

This is the third challenge to the ACA since its enactment in 2010 to come before the U.S. Supreme Court. The Justices will consider the constitutionality of the individual mandate, now that the penalty for failing to obtain health insurance was reduced to $0, and whether it can be "severed" from the rest of the law, allowing the other provisions to stand, including such provisions as the expansion of Medicaid and antidiscrimination protections for LGBTQ people and those who have pre-existing conditions such as HIV.

In March 2020, the U.S. Supreme Court announced that it would review the decision from the Fifth Circuit Court of Appeals, which ruled that the individual mandate was unconstitutional and indicated in remanding the case that it likely cannot be severed from important aspects of the rest of the law.

Oral argument is expected to take place in the Fall of 2020 and a decision would likely happen by the end of the term in the summer of 2021.

The cases are California v. Texas, brought by 19 states led by California and includes New York, Illinois, Virginia, Massachusetts, Connecticut, Delaware, Hawaii, Minnesota, New Jersey, North Carolina, Oregon, Rhode Island, Vermont, Washington, Colorado, Iowa, Michigan, Nevada, the District of Columbia, and the governor of Kentucky, and Texas v. California, led by Texas on behalf of that state, Alabama, Arizona, Arkansas, Florida, Georgia, Indiana, Kansas, Louisiana, Mississippi, Missouri, Nebraska, North Dakota, South Carolina, South Dakota, Tennessee, Utah, and West Virginia.

The U.S. House of Representatives intervened in support of the states led by California and in defense of the ACA.

Lambda Legal Senior Attorney and Health Care Strategist Omar Gonzalez-Pagan, Counsel Gregory R. Nevins and Counsel and HIV Project Director Scott Schoettes joined Kirsten Mayer, Douglas Hallward-Driemeier, John T. Dey, Brendan McLaughlin, Ryan Sullivan and Megan A. McEntee of Ropes & Gray LLP as counsel on the brief.

Signatories include AIDS United, American Academy of HIV Medicine, Black AIDS Institute, Center for Health Law and Policy Innovation, GLBTQ Legal Advocates & Defenders, Housing Works, Human Rights Campaign, Latino Commission on AIDS, National Alliance of State & Territorial AIDS Directors, National Black Justice Coalition, National Center for Transgender Equality, National Minority AIDS Council, Positive Women's Network - USA, The AIDS Institute, and Whitman-Walker Health and the Whitman-Walker Institute.

SHUITTERSTOCK/ ZIMMYTWS

AAHIVM and the Institute for Technology in Health Care Name PositiveLinks as their 2020 Award Winner

The American Academy of HIV Medicine and the Institute for Technology in Health Care have awarded the 2020 *Caceres Award for Technology in HIV Practice* to Drs. Rebecca Dillingham and Karen Ingersoll of the University of Virginia (UVa) Ryan White Clinic for their PositiveLinks (PL) digital application. PL is a clinic-deployed, smartphone-based platform that provides tools and support to people with HIV (PWH) to improve medication adherence and engagement with care. It includes a patient-facing app, a provider-facing app, a web portal for providers, and an on-line training system. (See website here: **www.positivelinks4ric.com**).

The technology was developed to address the stigma, poor access to transportation, isolation, substance use, and mental health challenges facing many PWH in rural Virginia. Dr. Dillingham, an infectious disease physician, and Dr. Ingersoll, a clinical health psychologist, collaborated to create PL by adapting evidence-based behavioral interventions to improve adherence to ART, as well as to reduce stigma, depression, and isolation.

The PL patient app features include medication reminders, mood and stress check-ins, educational resources, an anonymous community message board (CMB), secure document upload, and private provider messaging. PL shrinks physical and psychological distance between patients and care providers. It expands connections among PWH in a space that is experienced as safe. It provides important tools that support self-monitoring, care coordination, and social support—all in a secure mobile app.

The provider-facing PL app and web portal facilitate providers' ability to monitor patient-reported data about adherence and mood. They also permit "texting"-like messaging in a health system-approved environment that allows for the flexibility and efficiency of texting. Embedded telehealth capability was recently added to PL, allowing PWH who participate in the program the option of securely accessing medical and mental health care through the PL app while maintaining social distancing.

Development of PL was supported originally by AIDS United beginning in late 2012. Since 2017, based on the successful pilot, the Virginia Department of Health (VDH) has supported expansion of PL as a usual care service at UVA and at other organizations that support the care of PWH.

Thanks to the visionary support of the Virginia Department of Health (VDH), the tool is available at no cost to clients, and, in fact, if used regularly, can qualify clients for assistance with cellular voice and data access, an increasingly recognized social determinant of health.

"The ability to remain in touch through a cell phone, whether with calls or through an app, may become increasingly important as the recommended number of visits to an HIV care provider decreases based on the less frequent need for CD4 and viral load monitoring," stated Dr. Dillingham. "In addition, care coordination and secure messaging is growing in importance for our aging PWH population who have a rising number of medical co-morbidities."

Dr. Dillingham, Dr. Ingersoll and their team have documented the impact of PositiveLinks in a demonstration project with the first 77 enrollees. PL implementation resulted in a 30 percent absolute increase in engagement in care (51% to 81%) and a 22 percent absolute increase in viral suppression (47% to 79%) at 12 months in a population of PWH who were identified by providers as being poorly engaged in care. These positive results have now been extended to 24 months, as reported in a recent publication.

in the US including a rural-based academic hospital; an urban health system; a rural Federally Qualified Health Center; a community-based organization serving a large population of people who speak Spanish; an adolescent clinic; and an independent RW clinic associated with a community-based organization.

In its ninth year, the *Caceres Award for Technology in HIV Practice* seeks to acknowledge those who have created, adapted and/or used innovative technology in their HIV practice and to share that technological knowledge with others in the practice of HIV medicine to improve patient care. The name of the award was recently changed to honor the passing of Dr. Cesar Caceres, founder of the Institute for Technology in Health Care.

IN HONOR OF DR. CESAR CACERES, founder of The Institute for Technology in Health Care, the Academy will be changing the name of our joint award to the *Caceres Award for Technology in HIV Practice*. Dr. Caceres passed away earlier this year, leaving behind a profound legacy in HIV care innovation.

In 1970, Dr. Caceres opened his private practice integrating computer technology into the day-to-day real world of medical practice. Beginning in the 1980's Dr. Caceres developed for use in his practice The System Integrated Record, S.I.R. Dr. Caceres is also credited with coining the term "Clinical Engineering." Dr. Caceres joined the Board of Directors of the Association for the Advancement of Medical Instrumentation (AAMI) in 1969 and as President of AAMI from 1971-1972.

SPOTLIGHT

BY AARON AUSTIN, MEMBERSHIP DIRECTOR

Ogechika Karl Alozie, M.D., MPH, FACP, AAHIVS

El Paso, Texas

BEFORE LAUNCHING HIS CAREER IN HIV CARE, Dr. Alozie attended medical school at the University of Benin Medical School in Benin, Nigeria. His education in the developing world was public health-focused and centered on issues like water, malaria and tuberculosis. After medical school, Dr. Alozie moved to Minnesota to complete his Internal Medicine residency at Hennepin County Medical Center before doing an Infectious Diseases fellowship and earning his MPH at the University of Minnesota, where he also served as head of student health services and volunteered for a few organizations that handled HIV care in minorities.

It was about 10 years ago when he moved to El Paso, Texas. Since then, Dr. Alozie has worked in every hospital in the city and has created not one, but two HIV clinics from the ground up. First, working as a new assistant professor with an academic health center, Dr. Alozie led a team in creating the university's first dedicated HIV clinic. In 2014, Dr. Alozie left the university to pursue new ventures. He founded a non-profit organization focusing on Ryan White care and providing a shared clinic case management navigation space for HIV clients; ensuring these patients received the best care possible. Dr. Alozie recalls, "Truthfully, I really had no idea how Ryan White funding mechanisms worked, what 340B was, or how to grow a team and clinic. However, with lots of determination, we have built one of the best, we believe, HIV groups in the state of Texas and I'm immensely proud of that."

When asked what motivated him to pursue specializing in HIV care, Dr. Alozie recalls, "As I began my career, initially my desire was to become a cardiologist. As I was pursuing my MPH in cardiology, one summer my mom called me and told me her sister, my aunt, had been diagnosed with HIV in Nigeria. I'm not sure what it was, if it was the process of engaging with my mom and aunt learning about resources for HIV care in Nigeria and the host of many other things to help her with her journey, but something ignited a fire in me and HIV became my new focus; HIV, infectious diseases and a focus on public health as a whole."

Today, Dr. Alozie's non-profit organization, Southwest Viral Med (SWVM), is responsible for the care of about 1,300 persons living with HIV (PLWH) and other related viral diseases, like hepatitis C. SWVM uses technology and outreach to engage deeply with the community and drive some of the best HIV outcomes in the state of Texas. Dr. Alozie is joined on his team by a nurse practitioner, clinical PharmD, outreach navigators, as well as core clinical staff such as their Director of Operations, HIV Technology Specialist, and two certified medical assistants. At SWVM, the most common age demographic is between 25 and 44; this has changed over the last few years away from the 45+ demographic. Of their total patients, 88 percent are male, 12 percent are female, which has remained consistent over the years. Over 90 percent of their patient population is Hispanic/Latinx.

At SWVM, Dr. Alozie is driven by public health and epidemiology and is constantly analyzing data to improve systems of care. They leverage technology to engage patients and ensure they have access to care, particularly with newer populations of young 'digital natives.' Whether it's the patient portal, text outreach campaigns or telemedicine, providing multiple channels of access to care is what they consistently analyze. They gauge

effectiveness, make revisions and remain flexible to try something different.

"My approach to patient care has always been the same," says Dr. Alozie, "to be compassionate but honest with my patients. They come to me and look to me to tell them the truth yet still give them hope. I know they say hope is not a strategy, but when it comes to patient care in the disease state of HIV, AIDS, and hepatitis C, that initial hope is what people latch onto to give them strength to go on and fight that battle. I've always been that kind of physician and my patients know I will support them. I'll be that to them, but also tell them when I think they're not being honest with me, but more importantly themselves, and they need to make changes. There's a saying I'm sort of famous for, I'm not even sure where I got it, I probably stole it from someone. But during one of the initial visits I tell my patients, 'This is like a date. If the date goes well, I hope you come back and we'll continue working through this relationship. If it doesn't, and I'm not the right one for you, let's find a provider with whom you'll have a thriving, successful, happy relationship.' I let my patients know we are in this together, but if they are doing something to jeopardize their ability to thrive, I'm going to correct them and that's really my approach to patient care."

Dr. Alozie cites talking to clients and their families, especially during initial visits, as the most rewarding part of his job as an HIV specialist. He takes pride in having the ability to bring a sense of calm to these patients by explaining HIV is not a death sentence. Medicine has evolved and HIV is something we can work together to manage, work through, and not only survive, but thrive. Says Dr. Alozie, "The thoughts that bring me the most joy are those patients I've seen in the hospital. They had been put on hospice care, other physicians told them they were going to die so their families had given up. However, working with them, finding the right regimen, combining medicine with our care management and navigator teams, it's amazing that six months later they've come back into clinic unrecognizable, totally new people with a new lease on life." Dr. Alozie's biggest challenge or obstacle is having patience to deal with the bureaucracy around getting patients the care they need and deserve. "I've learned to understand that systems are in place sometimes for a reason and sometimes they are there just to exist. We must stay dedicated to continue to look for ways to improve the systems and educate, educate, educate!"

"... I know they say hope is not a strategy, but when it comes to patient care in the disease state of HIV, AIDS, and hepatitis C, that initial hope is what people latch onto to give them strength to go on and fight that battle..."

The subject of education is one about which Dr. Alozie is passionate. "When I look at HIV and understand that it's a disease of the U.S. South, it makes me sad that in most academic health centers across the South young Black and Hispanic students are not being educated on HIV in an engaging, enlightening and exciting manner." Dr. Alozie hopes to continue to work with organizations like AAHIVM, AIDS Education and Training Centers (AETC), academic health centers and pharmaceutical industry supporters to ensure we are equipping the future of healthcare with the tools and mindset necessary to work in healthcare today and in the future.

Looking to the future, Dr. Alozie envisions a greater focus on prevention and long-acting suppression. He considers today's advances around Undetectable = Untransmittable (U = U), rapid start and the new round of injectable medications to be just the tip of the iceberg. Upcoming therapeutics have the ability to reduce patients' viral loads consistently and durably, but also to reduce the risk of new persons contracting HIV. From a workforce or person-power standpoint, Dr. Alozie thinks the future of HIV is in the hands of clinical pharmacists, nurse practitioners and physician assistants. This is not because he believes physicians shouldn't manage HIV, but Dr. Alozie says, "the financials of healthcare and a dwindling workforce of physicians in HIV and infectious diseases make it imperative that we focus on the young healthcare team members who are out there."

Outside of work, sports, especially basketball and soccer, and his family have always been Dr. Alozie's drivers. "Showing my kids that hard work and the ability to adapt and overcome are important aspects of life." He prioritizes giving back to his community. For the last two years, he has volunteered and worked with friends to set up public health and eye exam fairs in areas within Nigeria. "Giving back to my community has always been important from when I was a student to now being a respected professional here in El Paso and other communities. I believe giving back via community service is critically important to growth and I've focused mine around my passion for education. I am dedicated to educating the next generation, being available for them to ask questions and learn from my speeches and presentations. "

Asked why he joined AAHIVM as an Academy member, Dr. Alozie says, "As I was finishing my HIV fellowship at University of Minnesota, I came across AAHIVM. It was organization that conducted continuing education and outreach, which is what piqued my interest, and I became drawn to it. Not only to have a community of HIV care providers, but to increase my skillset, make connections and really develop in my HIV career. Since I've been in Texas and aligned with the Academy, I've had opportunities to attend sessions and been able to teach sessions. I truly believe that the Academy continues to push HIV-focused agendas for the future of HIV in America." **HIV**

AARON AUSTIN is the AAHIVM Membership Director. Aaron began working with the Academy in 2008 and is currently completing coursework for his MPH at the George Washington University Milken Institute School of Public Health.

Trichomonas Vaginalis in Women with HIV

The Forgotten Pathogen

BY WILLIAM R. SHORT, MD, MPH, AAHIVS

TRICHOMONIASIS, caused by the protozoan *Trichomonas vaginalis*, is the most common non-viral sexually transmitted infection (STI). The prevalence of *Trichomonas vaginalis* in the United States (US) is estimated to be approximately 8 million cases annually.

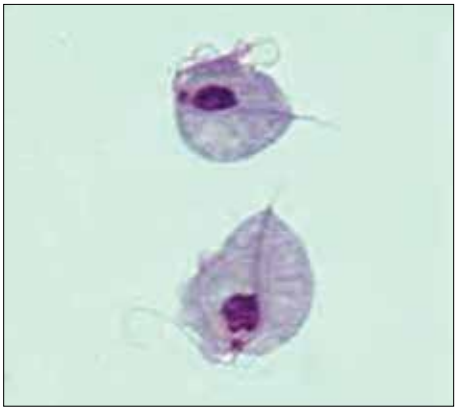
Determining the exact prevalence is difficult for several reasons: Trichomonas is not a reportable infection, there is a low sensitivity of wet mounts, and many infections are asymptomatic. In a nationally representative sample of 4463 females using urine samples who participated in the National Health and Nutrition Examination Survey (NHANES) in 2013–2016, the prevalence was 2.1 percent among women aged 14–59. Prevalence was 9.6 percent for African American women, 1.4 percent for Hispanic women, and 0.8 percent for non-Hispanic white women. Factors that were associated with *Trichomonas vaginalis* were younger age at sexual debut, greater number of sex partners, and a history of Chlamydia infection in the past year.[1]

Microbiology

Flagellated protozoa are widespread in nature and move by means of a flagellum. Although several flagellate genera parasitize humans, only four, Trichomonas, Giardia, leishmania, and Trypanosoma, commonly induce disease. Three members of the genus trichomonas parasitize humans but only one, *Trichomonas vaginalis*, is an established pathogen.

Trichomonas vaginalis is oval and measures 7um by 15um and has five flagella that arise anteriorly (Figure 1). It exists only in the trophozoite stage and lacks a cyst form so it can only survive outside of the body on moist surfaces for 1–2 hours. Trichomonas can be isolated in the vagina, cervix, urethra, bladder, Bartholin glands, and Skene glands where they replicate by binary fission. (see life cycle Figure 1)

FIGURE 1. Two trophozoites of T. vaginalis obtained from in vitro culture, stained with Giemsa



Clinical Presentation

Transmission of Trichomonas occurs predominantly through sexual intercourse. The organism is commonly isolated from vaginal secretions in women and symptoms can range from none to pelvic inflammatory disease. Women often present with an abnormal vaginal discharge which may be purulent, frothy, or bloody. Other clinical manifestations include vulvovaginal itching, burning, dyspareunia, dysuria, post coital bleeding, lower abdominal discomfort.[2]

Trichomonas and HIV Interaction

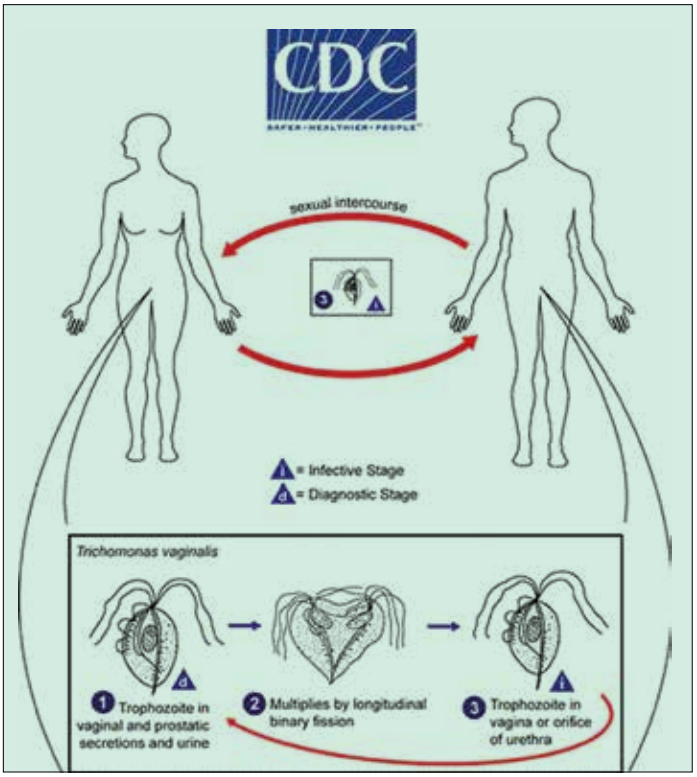
There is strong evidence that *Trichomonas vaginalis* both increases both the transmission and acquisition of HIV among women but with successful treatment genital shedding of HIV is reduced. A recent systematic review and meta-analysis demonstrated that *Trichomonas vaginalis* is an important factor in HIV acquisition and suggests that it augments the likelihood by 50 percent (HR 1.5; 95% CI 1.3 to 1.7).[3] This highlights the rationale for routine screening and prompt treatment.

Diagnostic Considerations

The most common method for diagnosing *Trichomonas vaginalis* is by a wet mount because it can be done in the office by obtaining a swab of vaginal secretions, looking under the microscope, and making a quick diagnosis; however, the sensitivity from vaginal secretion is very low 51–65 percent. In addition, the sensitivity declines over time and is decreased by 20 percent within 1 hour after collection. If you are relying on this test, you are most likely missing the diagnosis of Trichomoniasis.[2]

In the past, culture was the gold standard and it was much more sensitive. It has a sensitivity of 75 percent to 99 percent and a specificity of up to 100 percent. However, it requires that you have the culture medium, Modified Diamonds Medium or other media formulated to support the growth of *Trichomonas vaginalis*, readily available in your office and it needs to be inoculated immediately. Modified Diamonds Medium has been found to be an effective medium for the culture of this organism. It is enriched with yeast extract and

FIGURE 2. The Life cycle of T. vaginalis



supplemented with inactivated horse serum, Amphotericin B, penicillin G, and gentamicin which allows trichomonads to grow while suppressing bacterial growth.

Currently, the use of highly specific tests, Nucleic acid amplification tests, (NAATs), are recommended for detecting Trichomonas. This assay detects RNA by transcription-mediated amplification. The APTIMA T. vaginalis assay is FDA-cleared for detection of *Trichomonas vaginalis* in vaginal, endocervical, or urine specimens and it has a sensitivity of 95.3 percent to 100 percent and specificity of 95.2 percent to 100 percent.

TABLE 1. Treatment Recommendations

	Women with HIV	Women without HIV
Recommended treatment	Metronidazole 500 mg twice daily for 7 days	Metronidazole 2g orally in a single dose OR Tinidazole 2g orally in a single dose
Alternate treatment		Metronidazole 500 mg twice daily for 7 days

Screening Recommendations

Routine screening is recommended for all women with HIV. Screening should occur at entry into care and at least annually. In addition, women who present with vaginal complaints should be tested for *Trichomonas vaginalis*.[2]

Treatment

Women with HIV should receive the same treatment as those who are HIV negative with the exception of the dosing frequency.[2] Table 1 summarizes the recommendations. A randomized clinical trial involving women with HIV demonstrated that a single 2g dose was less effective when compared to 500 mg twice daily for 7 days. Patients were randomly assigned to treatment with metronidazole 500 mg twice daily for 7 days or with metronidazole 2g in a single dose and the seven day treatment group had a lower rate of positive cultures 6 to 12 days after treatment completion (8.5% versus 16.8%; relative risk 0.5, CI 0.2555-1.00) and at 3 months (11% versus 24.1%; relative risk 0.46, CI 0.21-0.98).[4] Based on this randomized trial, the recommended treatment dose and duration is metronidazole 500mg twice daily for 7 days.[2]

On additional concern with the use of the single dose of metronidazole is that there is a high rate of asymptomatic bacterial vaginosis in women with HIV and other factors such as the vaginal ecology and impaired immunity that may interfere with the efficacy of standard dosing.[5] The Centers for Disease Control and Prevention (CDC) recommends rescreening at 3 months after the treatment for women living with HIV due to the likelihood of recurrent or persistent infection. [2]

Conclusion

Trichomonas vaginalis is the most common non-virally transmitted STI and is found in a high proportion of women living with HIV. Providers need to be familiar with Trichomonas and its clinical presentation, diagnostic dilemmas, treatment considerations, and complications. In addition, treatment of *Trichomonas vaginalis* may have an impact on HIV acquisition and transmission. **HIV**

DR. WILLIAM SHORT, MD, MPH, AAHIVS, is an infectious disease specialist in the Division of Infectious Diseases at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia, PA. He is also the vice-chair elect of the Board of Directors for the American Academy of HIV Medicine.

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BACK to the

FUTURE

How lessons from one pandemic may save lives in another

BY JOSEPH S. CERVIA, MD, AAHIVS

RELEASED IN 1985, the same year as HIV antibody testing, the sci-fi classic, *Back to the Future*, is the story of small-town California teen Marty McFly (Michael J. Fox) who is thrown back 30 years into the past when an experiment by his eccentric scientist friend Doc Brown (Christopher Lloyd) goes awry. Marty recognizes that he must ultimately return to his own time, using what has been learned and achieved in order to save a life.

As I observe the current global SARS-CoV-2/COVID-19 pandemic, I feel as though I have been thrown back three decades, my heart racing like Marty's, eager to capture some lessons learned from our early struggles with the ongoing HIV/AIDS pandemic, which may better inform our response and save lives today.

Reflecting upon the unspeakable suffering experienced by HIV-infected patients, their loved ones and caregivers in the early years, it is difficult to miss a striking parallel to the anguish borne by those battling the current pandemic of COVID-19. For certain, the two pandemics have a number of important similarities as well as differences. Both are due to novel viruses with zoonotic origins. However, their modes of transmission are very different. Both HIV-1 and SARS-CoV-2 can be deadly and attack indiscriminately, while disproportionately impacting communities struggling with poverty; however, the latter has advanced through the population with much greater facility and alacrity, resulting in more sudden and widespread disruption of life across the globe.

Finally, both viruses emerged, at first, rather poorly understood, with limited diagnostic testing and no known treatment; whereas, today's more advanced molecular tools have vastly facilitated the development of targeted diagnostics, and offer the promise of swifter development of vaccines and therapeutics. Modern electronic media offer means for more efficient communication and data sharing.

Acknowledging these important similarities and differences, the following 10 lessons learned three decades ago in the early response to the HIV/AIDS pandemic can enlighten the current journey for patients, caregivers and clinicians battling SARS-CoV-2/COVID-19.

Silence = Death: Denial can be Deadly

Denial, a very human initial defense mechanism when coping with a new and frightening reality, can become extremely dangerous when it hampers a prompt and effective response to that reality. Although early reports of what ultimately became known as AIDS were published in June 1981, it was not until 1985 that President Ronald Reagan first mentioned it publicly. Subsequently, global HIV/AIDS denialism, which ignored clear scientific evidence of HIV as the etiology of AIDS, discouraged HIV-positive individuals from using proven treatments. It also justified the policies of some nations which would not sustain the cost and effort to make treatment available, resulting in countless additional infections and lives lost. Recognizing the critical importance of truth and transparency, AIDS activists embraced the slogan, "Silence = Death."

Dr. Li Wenliang, a Chinese ophthalmologist who worked as a physician at Wuhan Central Hospital, warned his colleagues in December 2019 about a possible outbreak of an illness that resembled severe acute respiratory syndrome (SARS), later acknowledged as COVID-19. Dr. Li, who subsequently contracted and died of the infection, was initially discredited by his government. Meanwhile, closer to home, as COVID-19 began to spread across the United States, President Donald Trump repeatedly insisted that it was nothing to worry about. Two months later, the United States became the first country in the world with more than 100,000 cases, the

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economy had ground to a near standstill, and the virus had killed more than 104,000 in the US alone.

Refuse to Play the Blame Game: Fight the Stigma

As observed in society's early response to HIV/AIDS, inadequate scientifically-driven understanding of pandemic illnesses contributes to stigma, and promotes the tendency to lay blame upon victims, which in turn, delays definitive efforts directed toward enhancing diagnostic testing, research and appropriate care. Community support and activism by groups such as Gay Men's Health Crisis (GMHC) and AIDS Coalition to Unleash Power (ACT UP), and by professional societies such as the American Academy of HIV Medicine (AAHIVM) have demonstrated the critical role of advocacy. Today, individuals affected by the current pandemic and those who care for them must lend their voices to rally continuing support for better understanding and scientifically sound, effective preventive strategies and treatments for COVID-19 illness. This may take the form of public advocacy, by means of financial and/or volunteer support for healthcare organizations, political activism (e.g. lobbying efforts), research involvement (e.g. volunteering as collaborators or subjects), and active participation in community-wide educational efforts in the press, and electronic media.

It's a Small World After All

Pandemics have a way of reminding society that it's one human family, inhabiting a predominantly microbial world. With its origins in Africa, blood and body fluid-borne HIV silently crept across continents in the 1970s, before becoming evident in the succeeding decades. Abetted by its very efficient respiratory transmission, SARS-CoV-2 raced much more rapidly across the globe following its early identification in Wuhan, China in December 2019. Respecting no geopolitical boundaries, deadly viruses illustrate that the world is a small after all. We must remain vigilant and concerned about emerging infections and the underlying socioeconomic and cultural challenges faced by neighbors across the globe.

Individuals and families grappling with serious COVID-19 illnesses and their loved ones often face cruel separations wrought by the nature of the affliction, which are only exacerbated by the nature of care delivery in the setting of an acute public health crisis. Courageous and compassionate cooperation with and among embattled care providers is inspiringly reminiscent of the early days of HIV/AIDS.

Team Up: Collaboration is Critical

An optimal model of multidisciplinary primary care with integrated HIV subspecialty services has been offered for decades by teams optimally consisting of physicians, physician assistants, nurse practitioners, nurses, pharmacists, social-work case managers, mental health professionals, nutritionists, chaplains and other dedicated caregivers. These team members have often developed long-standing and intimate bonds with patients and family members. The very strength of these bonds, forged by shared struggles against demons such as poverty and its associated calamities, social stigmatization, substance use, and all too often, the concurrent illnesses and deaths of multiple family members, has made it possible to compassionately and systematically address the needs of individuals and families battling HIV. Similarly, individuals and families grappling with serious COVID-19 illnesses and their loved ones often face cruel separations wrought by the nature of the affliction, which are only exacerbated by the nature of care delivery in the setting of an acute public health crisis. Courageous and compassionate cooperation with and among embattled care providers is inspiringly reminiscent of the early days of HIV/AIDS.

The value of team effort also extends to clinical research infrastructure. The pace of developments in the fight against HIV/AIDS could never have been attained without strong industry, academic, community and government collaboration. Multi-centered clinical trials networks, such as the AIDS Clinical Trials Group (ACTG) and International Maternal Pediatric Adolescent AIDS Clinical Trials (IMPAACT) Network have learned and demonstrated the synergies accruing to organizing themselves into research agenda committees and working groups, comprised of physicians, basic scientists, pharmacologists, biostatisticians, nurses, mental health professionals, and community advisory board members infected with and/or affected by HIV. The research community has certainly appreciated the critical role of collaboration, and has rapidly rallied to accelerate the development of COVID-19 treatments, with for example, the World Health Organizations' (WHO) March 20th launch of the "Solidarity" trial, an unprecedented collaborative study intended to simplify enrollment and follow-up of thousands of patients in dozens of countries amidst the onslaught of the pandemic. The WHO's website will randomize patients to local standards of care or with one of four drug regimens, utilizing the ones available in the patients' hospitals.

Screen Widely

Shortly after the viral etiology of AIDS was identified, reliable screening tests became available. Nevertheless, their widespread implementation lagged despairingly. There was little enthusiasm for identifying individuals afflicted by a stigmatizing illness for which effective treatment appeared to be lacking. With attention to fighting stigma and establishing operational care and research networks, screening has continued to become much more widely accepted. In addition, success in generating more efficacious and better-tolerated therapeutic options has

further bolstered support for widespread screening.

Reliable screening for SARS-CoV-2 and associated antibodies has proven critical in early identification of those at risk and affected. Efforts to more rapidly roll out widespread, community-based screening will facilitate the effort to fully comprehend the extent and nature of this pandemic, and to better direct evidence-based public health efforts. However, more effective screening cannot await optimal therapeutic options, since as was learned in battling HIV, research advances toward safer, more efficacious treatments await the participation of those at risk and infected. If better solutions are to be uncovered in the lifetimes of those infected, they and those who care for them must be a part of that effort.

Let Science Take the Lead

The early years of the HIV/AIDS pandemic were marked by a very real sense of fear and foreboding. This fear sometimes found expression in irrational and cruel responses, such as the avoidance of infected individuals. The ultimate antidote to fear proved to be science and education. Advances in the understanding of the virus promoted more rationale, effective, and humane responses.

Fear of COVID-19 today is palpable, and has found expression in isolation, hoarding and shortages of much needed items such as personal protective equipment. Unfortunately, in the early weeks of this pandemic, limited community-based testing has resulted in incomplete information and inconsistent messaging, which has only exacerbated public anxiety. The ultimate solution lies in allowing science to once again lead. With the benefit of myriad advances in molecular virology, immunology, pharmacology, and information technology over the past three decades, the tools to better comprehend and address the challenges presented by SARS-CoV-2 and the means to communicate about them are well within grasp.

Sometimes Old Drugs can Learn New Tricks

The first weapon against HIV, zidovudine or azidothymidine (AZT), was originally developed in the 1960s as an anti-neoplastic agent; however, it was set aside after having been found ineffective for that purpose in animal models. Two decades later, Burroughs Wellcome, already known for its antiviral drugs, included AZT in its screen for possible anti-retroviral agents and uncovered its efficacy. At this early stage in COVID-19 research, repurposed older drugs such as the anti-malarial immunomodulatory agent hydroxychloroquine with or without the acid-reducing histamine 2 receptor blocker famotidine, the nucleotide analogue anti-Ebola viral drug remdesivir, and immunomodulators tocilizumab and sarilumab, both approved for rheumatoid arthritis are among the early objects of clinical trials.

Share the Wealth

Translating promising basic and clinical research findings into standards of care requires attention to regular communication among experts, and between those experts and front-line providers, patients and caregivers. For many years, comprehensive HIV care guidelines have been widely available and regularly updated with each version prominently marked with a freshness, 'last updated' date. This practice becomes all the more relevant as the pace of research progress accelerates.

Novel basic science and clinical research advances in the diagnosis, prevention, and treatment of COVID-19 must be regularly vetted by experts, and best practices disseminated in the form of comprehensive and current clinical practice guidelines. Armed with modern electronic media, the integral collaboration of government, industry, and the community as part of the larger research team will facilitate this ongoing process of communication.

It's a Marathon, not a Sprint

The HIV/AIDS pandemic is now in its fourth decade, and despite all of the advances in prevention, diagnosis, and therapy, some 38 million individuals remain infected, with as many as 1.7 million new infections each year globally. Clearly, patient and persistent efforts must continue in order to finally put an end to it. With it being only months into the SARS-CoV-2/COVID-19 pandemic, it is already deeply impacting lives throughout the world. Many are expressing great impatience with the public health efforts directed at controlling it, but it is key to remain steadfast and diligent in the efforts.

Keep the Faith

In what might arguably have been the darkest days of the HIV pandemic, I shared a vision with my pediatric HIV team of a time in the not too distant future that we would be able to hang a "Gone Fishin" sign on the clinic door. It seemed laughable at the time, but we kept smiling, and worked to ultimately bring reality to that vision.

All who would venture to undertake the goal of better outcomes for those battling COVID-19 must share a steadfast belief that it can and will be achieved. In the words of Francis of Assisi, "Start by doing what's necessary, then do what's possible, and suddenly you are doing the impossible." Fortified by lessons learned three decades back, with ardent advocacy, relentless research, compassionate care, and limitless love, this is another battle worth fighting to win. **HIV**

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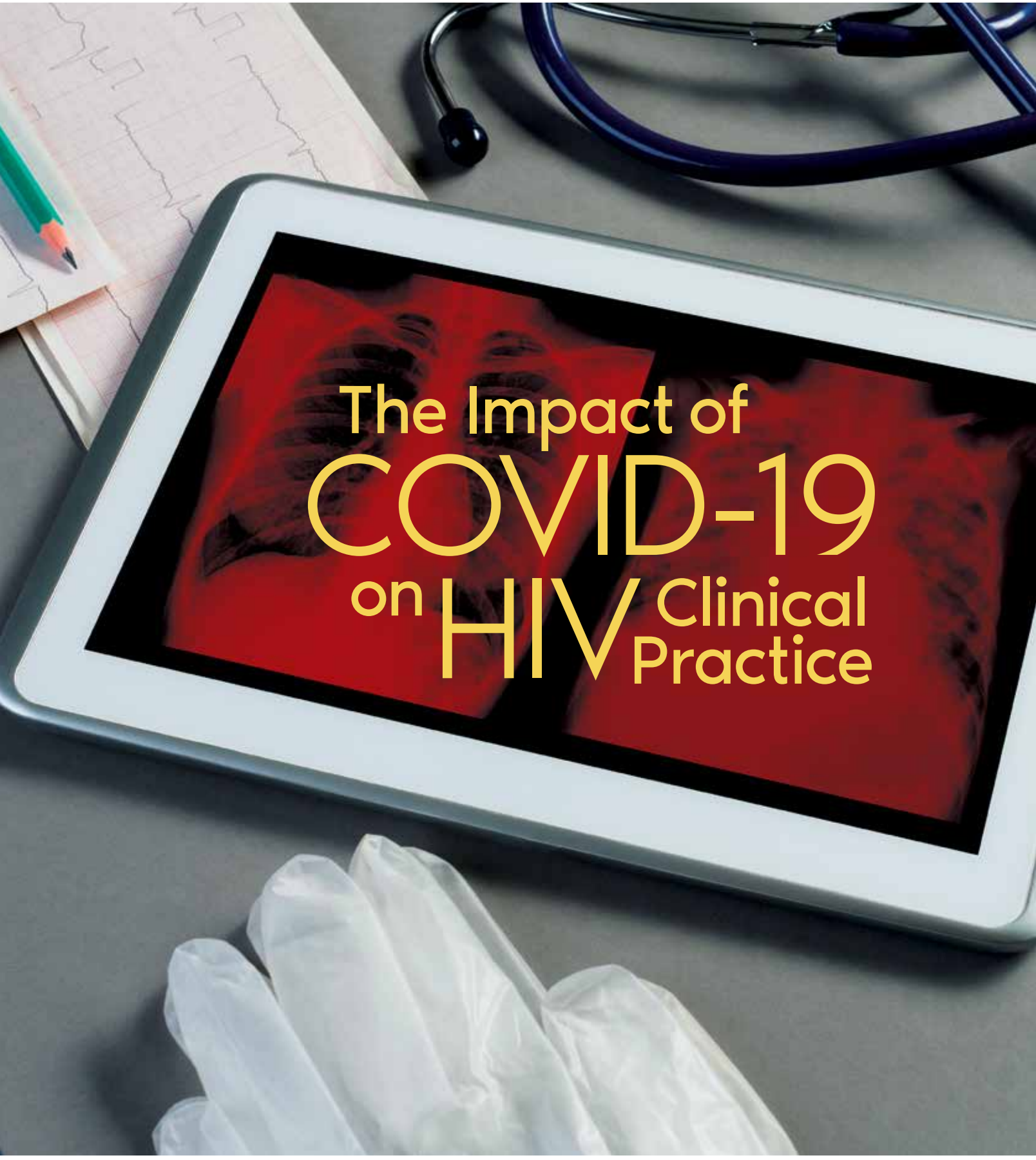

The Impact of COVID-19 on HIV Clinical Practice

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SARS-COV-2 is an RNA virus from the coronavirus family, the causative agent of COVID-19. With nearly 6,000,000 cases worldwide, 365,000 deaths and detection in at least well over 200 countries, it continues to evolve with devastating medical and socio-economic sequelae. The challenge with this virus is that the global population has no underlying immunity since it is novel and much about SARS-CoV-2 unknown.[1] Likely zoonotic transmission occurred from infected bats to an intermediate host mammal which is believed to be a Pangolin.[2] Symptoms of COVID-19 are non-specific and the disease presentation can range from no symptoms (asymptomatic/pre-symptomatic) to severe pneumonia and death.

According to data from the Chinese Center for Disease Control and Prevention, almost 80 percent of persons who contract the virus will experience no or mild symptoms, while 15 percent may experience severe symptoms requiring hospitalization and about five percent, critical care.[3]

One of the most troubling aspects of the disease is the silent spread among pre-symptomatic persons. Studies from China indicate pre-symptomatic transmission of 12.6 percent while investigation of all 243 cases of COVID-19 cases in Singapore during January 23rd through March 16, 2020 revealed a 6.4 percent rate of pre-symptomatic transmission.[4] The shedding is more impactful in children because of their mild symptoms, low disease severity and depth of interaction with other age groups.

The median incubation time for SARS-CoV-2 is four to five days and of those that are symptomatic, 97.5 percent will experience symptoms within 11.5 days of exposure. Moreover, the serial interval is between five to six days and the Ro- is two to three which means that one person can pass the virus on to two to three other persons through simple direct contact and droplet spread.

Populations at Risk

COVID-19 disproportionally affects medically vulnerable persons. These include the elderly, persons with chronic diseases, persons diagnosed with cancer, those with an underlying immunodeficiency and those on immunosuppressive therapy. Early studies from U.S. hospitals indicate age (generally > 65 years) as risk factor for increased mortality (Table 1). This is important for the HIV population since in a few years over 50 percent of the people living with HIV (PLWH) will be over 50 years of age according to the Centers for Disease Control and Prevention (CDC).[5]

Studies from hospitalized patients in Wuhan, China show that persons with co-morbid conditions such as diabetes (7%) and cardiovascular disease (10%) have higher case fatality rates compared to persons with no underlying condition (0.6%). The effect is even more pronounced in persons with pre-existing conditions that become worse during hospitalization in which case the case-fatality rate rises to as much as 49 percent for this vulnerable cohort.[7]

Pathogenesis of SARS-CoV-2

The pathogenesis of advanced COVID-19 disease is related to the destruction of type 1and type 2 pneumocytes in the lungs. The destruction of type 2 pneumocytes is responsible for alveolar membrane integrity and type 1 pneumocytes responsible for gaseous exchange. When both cell types are compromised this leads to alveoli collapse, increased work of breathing and severe gaseous exchange problems resulting in profound lung and systemic hypoxemia. The detection of the SARS-CoV-2 virus by macrophages initiates an intense inflammatory process resulting in neutrophils recruitment, IL-6 initiation and reactive oxygen species. These milieu of reactive oxygen species and other mediators including cytokines induces a "cytokine storm" that causes indirect and perhaps direct destruction to lung and other organ tissue that possess the ACE2 receptors such as the kidney, heart and gastrointestinal tract. The cascade of inflammatory process increases coagulation, decreases fibrinolysis and increases the risk of thrombosis in the small blood vessels. Not only is lung tissue damaged but so are other organs resulting in acute respiratory distress syndrome, acute renal failure, septic shock, multi-organ failure and death.[8] Although not much is known about the effects of the SARS-CoV-2 virus on T-cell mediated immunity, preliminary research from China indicates a severe decrease in CD4 and CD8 T cells in the acute phase of infection. This may have implications for immune restoration in the short and long term as for HIV infection.[9]

Clinical Manifestations of SARS-CoV-2 in Adults and Children

COVID-19 has a wide range of symptoms that may appear anywhere from two to 14 days after exposure to the virus. The most common symptoms are a persistent dry cough, and progressive shortness of breath with at least two of the following symptoms: fever, fatigue chills, repeated shaking with chills, muscle pain, headache sore throat and loss of taste or smell. Other symptoms include, nausea, vomiting, and diarrhea. Conjunctivitis has also been reported in some patient cohorts raising the possibility that this coronavirus may be present in the conjunctival secretions of patients with COVID-19. Children have similar symptoms to adults but those are generally milder. Typical symptoms are cold-like and include cough, fever and rhinorrhea.[10,11] However, concerning symptoms in children include persistent fever, lethargy, convulsions poor oral intake and persistent vomiting and diarrhea. Due to the risk of cytokine storm, children are also at increased risk of progressing to respiratory failure, shock, coagulation dysfunction and renal injury.[12]

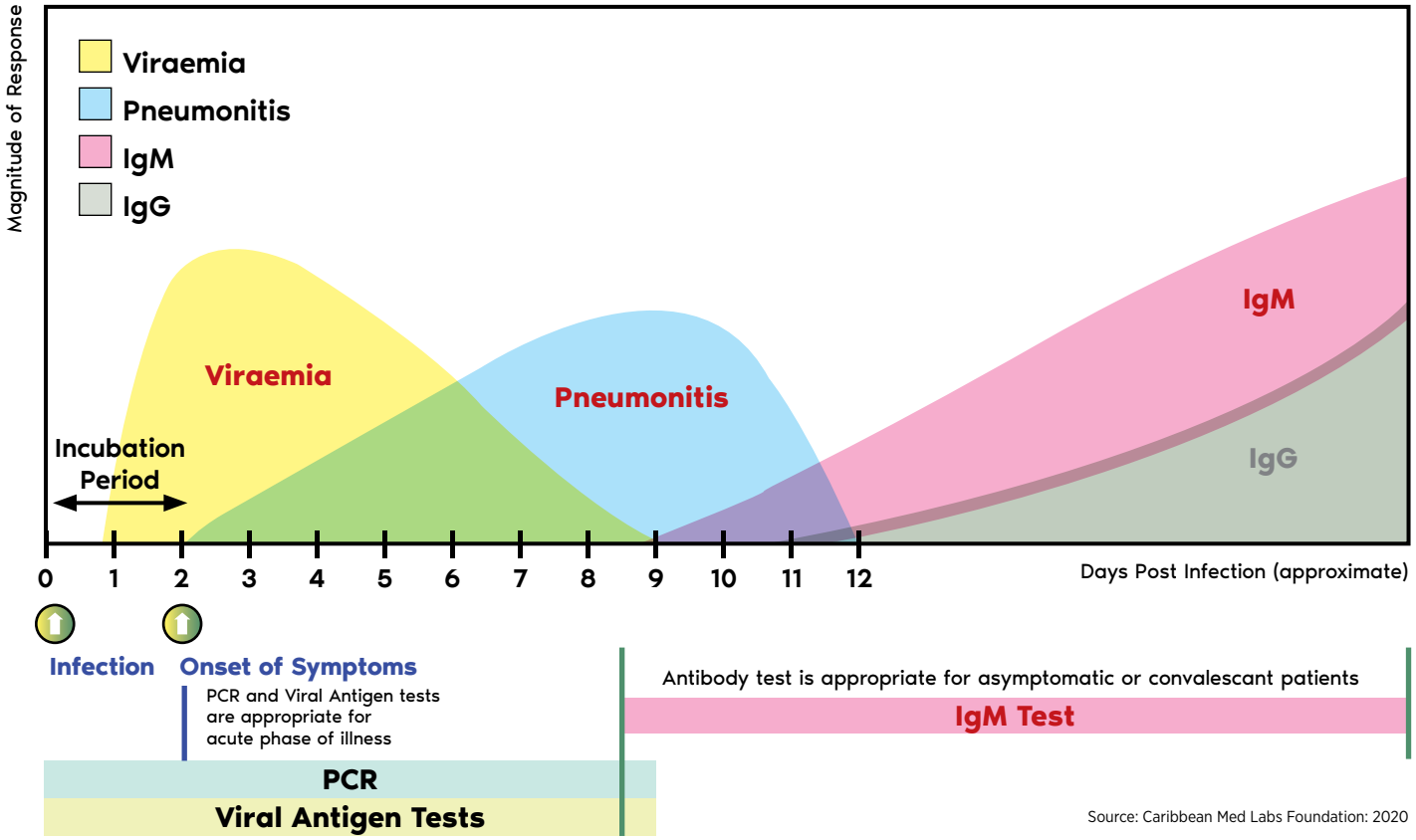
Several countries in Europe and states such as New York have begun reporting cases of Kawasaki-like disease in children, recently named Multisystem Inflammatory Syndrome (MIS). It is characterized by some or all of the following symptoms: fever, truncal rash, swelling of the hands and feet, conjunctivitis, lymphadenopathy, strawberry tongue and elevated blood markers for inflammation such as elevated sedimentation rate (ESR).[13]

TABLE 1. Hospitalization, intensive care unit (ICU) admission and case–fatality percentages for reported COVID–19 cases, by age group—United States, February 12–March 16, 2020

Age group (yrs) No. of cases	%		
	Hospitalizations	ICU Admissions	Case-Fatality
0–19 (123)	1.6–2.5	0	0
20–44 (705)	14.3–20.8	2.0–4.2	0.1–0.2
45–54 (429)	21.2–28.3	5.4–10.4	0.5–0.8
55–64 (429)	20.5–30.1	4.7–11.2	1.4–2.6
65–74 (409)	28.6–43.5	8.1–18.8	2.7–4.9
75–84 (210)	30.5–58.7	10.5–31.0	4.3–10.5
≥85 (144)	31.3–70.3	6.3–29.0	10.4–27.3
Total (2,449)	20.7–31.4	4.9–11.5	1.8–3.4

Source: Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19—United States, February 12–March 16, 2020 *Morbidity and Mortality ReportWeekly* / March 26, 2020 / 69(12);343-346 (6)

FIG 1. Illustrative Graphic of Disease Progression and Laboratory Test for COVID-19



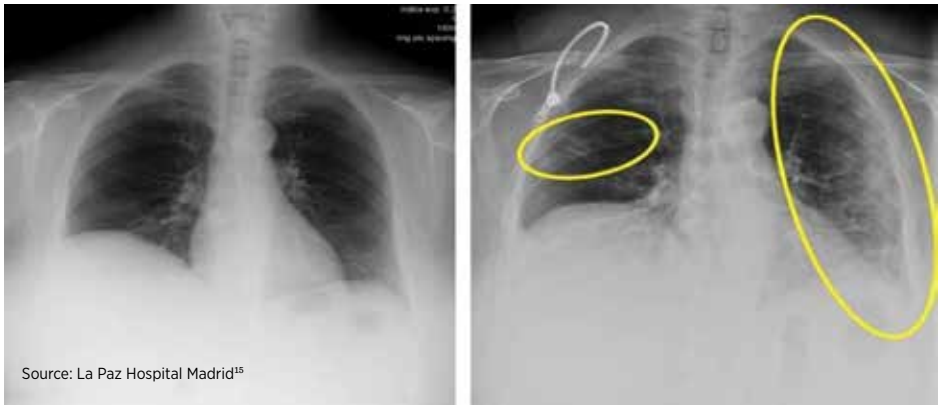
Diagnosis SARS-CoV-2/ COVID-10

The diagnosis of COVID-19 is most commonly performed through nucleic acid detection technology, (RT-qPCR), by sampling and detecting the virus in respiratory secretions via a nasal or pharyngeal swab. The CDC continue to recommend these methods of testing antigen and not antibody testing. Antibody testing can be used to ascertain patients who have recovered from COVID-19 through levels of IgM and IgG antibodies, (Fig. 1) but data on the utility of antibody testing including sensitivity and specificity of currently available tests as well as correlates of immunity continues to evolve. Studies using antibody testing are on-going looking at population-based seroprevalence of infection but the clinical implications of such data remain to be determined.[14]

Radiological diagnosis for COVID-19 can start with a simple chest X-ray. This may show ground glass opacities, consolidation and pleural edema. (Fig. 2)

Such high case fatality rates are important for PLWH in that many are over the age of 50 years. They suffer from multi-morbidity syndrome which is characterized by a panorama of chronic diseases that are inherently managed with polypharmacy requiring careful attention.

FIG. 2. Pre and Post Chest X-ray in a 72-year-old Female Patient Diagnosed with COVID-19



Although remdesivir is for now considered standard of care for hospitalized patients with COVID-19, comprehensive treatments must include mechanisms to control viral replication, the inflammatory process (cytokine storm), and other aspects of supportive care including high-flow oxygen and mechanical ventilation.

For high yield diagnosis, some clinical practice guidelines recommend chest CT scan especially for moderate to severe COVID-19 patients requiring admission to the hospital. Common findings include bilateral ground glass appearances in the upper lobes and areas of consolidation. Lung disease has been categorized in two forms of disease: "type L" which is a milder disease and "type H" type which is a more severe form, exhibiting extensive areas of consolidation on CT scannning.[16]

Clinical Management of COVID-19

The clinical management of COVID-19 is complex and continues to evolve. The CDC has recommended that patients with COVID-19 minimally require supportive care and stringent infection prevention and control. Several professional societies have issued clinical practice guidelines including the IDSA.[17]

There was some early enthusiasm for hydroxychloroquine with or without azithromycin for patients with COVID-19 with these drugs undergoing testing in numerous clinical trials—including persons with HIV disease. The most recent data reported found these agents **do not** appear to confirm any benefit on in-hospital outcomes when used alone or with a macrolide antibiotic. Moreover, these drug regimens were associated with decreased in-hospital survival and increased frequency of cardiac arrhythmias.[18]

The National Institute of Health (NIH) has supported clinical trials of several drugs for COVID-19 treatment. In late April 2020, the FDA approved the drug remdesivir for the emergency use in COVID-19 patients. This was based on a randomized control trial with placebo, conducted at 68 multiple sites in the U.S., Europe and Asia. The study, Adaptive COVID-19 Treatment Trial (ACTT) showed that in hospitalized patients with advanced disease time to recovery was 31 percent faster for patients who received remdesivir than those who received placebo ($P<0.001$). The median time to recovery was 11 days for patients treated with remdesivir compared with 15 days to those who received the placebo. Moreover, results also suggested a survival benefit with a mortality rate of 8 percent for the group receiving remdesivir and 11.5 percent for the patients that received the placebo ($P=0.59$).[19] Although remdesivir is for now considered standard of care for hospitalized patients with COVID-19, comprehensive treatments must include mechanisms to control viral replication, the inflammatory process (cytokine storm), and other aspects of supportive care including high-flow oxygen and mechanical ventilation.

Infection Control

Infection control remains a priority for healthcare workers in the fight against COVID-19. Clinicians must be prepared to avoid the risk of acquisition of the SARS-CoV-2 through the implementation of administrative procedures and the use of personal protective equipment (PPE) based on risk assessment. The principle strategy should be triage, early recognition and source control. In the case of COVID-19, the risk for healthcare workers is both for direct contact and respiratory droplets which means that they need to have PPE for their eyes, nose, mouth and body necessitating the use of surgical masks/medical masks, N95 or higher FF2, goggles, respirator fit, aprons, gowns and gloves. The use of aerosolized procedures such as bronchiolar lavage requires the use of powered air purifying respirators and comprehensive personal protection equipment for the rest of their bodies.[20,21]

Patients in turn should use surgical masks and practice proper respiratory hygiene as well as hand washing. As more persons continue to graduate from stay at home orders, it is germane that social distancing from at least six feet continue as an effective means of controlling SARS-CoV-2 community transmission until effective therapies and (ideally) a vaccine becomes available.

Clinical Considerations and Recommendations for HIV Management and Risk Stratification

Based on the possibility of severe CD4 and CD8 T cell depletion in the acute phase of COVID-19, it may be worth risk-stratifying PLWH during the COVID-19 pandemic.[22] However, more data are needed to ascertain the implication of this recommendation. The overall treatment goals should continue to be maintaining HIV viral suppression through treatment adherence, ensuring a multi-month supply of antiretrovirals (ARV), prophylaxis for opportunistic infections, recommended vaccinations and infection prevention and control.

The Department of Health and Human Services (DHHS) in collaboration with the CDC. They have issued interim guidance for PLWH which include the following;

- Persons age 60 years and older and those with co-morbidities are at greater risk for more severe disease
- Smokers appear to be at increased risk for complications

- The limited data currently available does not indicate that the disease course of COVID-19 in PLWH differs from that in persons without HIV. Before the advent of effective combination antiretroviral therapy (ART), advanced HIV infection (i.e., CD4 cell count <200/mm3) was a risk factor for complications of other respiratory infections. Whether this is also true for COVID-19 is yet unknown. Until more data is available, caution is advised for those with advanced or poorly controlled HIV disease.
- ART and concomitant medication supply for PLWH should be prioritized and a minimum of 30 days and maximum of 90-day-supply of ART is advised.
- Influenza and pneumococcal vaccinations should be kept up to date.
- PLWH should follow all applicable CDC recommendations to prevent the spread of COVID-19, such as social distancing and proper hand hygiene.
- Although pregnancy is in itself an immunosuppressive condition, studies have not shown thus far that infection with SARS-CoV-2 in pregnant women with HIV bears any increased risk in pregnancy compared to someone without HIV. However, many hospitals have instituted universal screening for SARS-CoV-2 in woman admitted for delivery.23 Clinical practice and management should continue as usual. Additional Information on pregnancy and COVID-19 is available from CDC, the Society for Maternal-Fetal Medicine, and the American College of Obstetricians and Gynecologists.

With regards to HIV and opioid abuse, the CDC recommends medically assisted therapy (MAT) including buprenorphine and methadone be continued. Clinicians caring for PLWH who are enrolled in opioid treatment programs (OTPs) should refer to the Substance Abuse and Mental Health Service Administration (SAMHSA) website for updated guidance on avoiding treatment interruptions. State methadone agencies are also responsible for regulating OTPs in their jurisdictions and may provide additional guidance.

Clinic or Laboratory Monitoring Visits Related to HIV Care

- Together with their healthcare providers, PLWH should weigh the risks and benefits of attending, versus not attending in-person, HIV-related clinic appointments.

Factors to consider include the extent of local COVID-19 transmission, the health needs that will be addressed during the appointment, the person's CD4 cell count and HIV viral load as well as their overall health.

Telephone or virtual visits for routine or non-urgent care and adherence counseling may replace face-to-face encounters.

For persons who have a suppressed HIV viral load and are in stable health, routine medical and laboratory visits should be postponed to the extent possible.

For further guidance on the quarantining of PLWH, it is prudent to refer to the DHHS guidelines and CDC guidelines. **HIV**

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BEST PRACTICES

Ever-Changing During the COVID–19 Crisis

We are learning together

BY D. TREW DECKARD, PA-C, MHS, AAHIVS

ON FRIDAY MARCH 6TH, I realized things were about to change in our clinic here in Dallas, Texas and around the country as CROI 2020 abruptly sent all of its attendees, including myself, an email stating that the 2020 Live Conference on Retroviruses and Opportunistic Infections (CROI) had been cancelled and that it had become a virtual conference.

Although I had prepared to wear a mask on my flights, socially distance while there, and take as many precautions as possible, I didn't expect to cancel all my plans for travel the day before the conference was to begin. Clearly the organizers at International Antiviral Society-USA (IAS-USA) had made the correct decision.

Over the next five days, the virtual CROI conference went surprisingly smooth. On the Tuesday during the conference, the organizers presented a special COVID-19 update led by Dr. Anthony Fauci. This special session shown a light on a quickly emerging pandemic that had taken everyone by storm. Everyone was interested in attempting to understand what was known about this new coronavirus, SARS-CoV-2 and how it may affect our patients, our practices and our communities.

When I returned to our practice, an Internal Medicine practice with a specialty in HIV/AIDS, on Thursday March 12th, I swabbed what would be the first of many patients with COVID-19 symptoms. We were not accustomed to wearing PPE outside of patients with high risk respiratory symptoms and for certain procedures, therefore beginning to wear PPE regularly was a new reality. As an Internal Medicine practice, we regularly work with LabCorp and Quest for most of our laboratory needs. However we were unsure what to expect from the new COVID-19 PCR tests, how to interpret these new tests with only internally validated sensitivity and specificity data, how quickly we could expect these tests to return, and the correct verbiage to deliver to our patients while they were awaiting results. The Centers for Disease Control and Prevention (CDC) guidelines began being disseminated and updated regularly, as we would soon find out would become the norm. The virus was beginning to spread into more U.S. states and communities quickly, including our own.

That weekend on March 15th, I happened to be on-call and took the first call from our Dallas County Health Department informing me we had a positive COVID-19 result. What followed was a panic of calls, clarifications, and researching of information on current CDC COVID-19 guidelines regarding quarantining if a medical professional has a high-risk exposure with a known positive. The result of this inquiry was that one provider and another staff member were determined to be at risk and self-quarantined over the next 14 days.

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It was clear that the next day would be a turning point as to how we would approach our patients, our practice and our own protection. On Monday March 16th, I was able to convince our building's owners that it was in the best interest of all persons entering our building that our practice should be allowed to offer drive-up testing in the parking structure adjacent to our building. That would reduce the risk of COVID-19 exposed individuals exposing others to the virus, while maintaining a safe and familiar environment to our patients, in a scheduled setting. The owners agreed—with the caveat that only our patients would be allowed to be tested and no advertising of this service would be allowed. In a building where at least 50 percent of the tenants are not medical, we understood this request of discretion was reasonable.

Over the coming weeks, all six of our providers would become familiar with the process of dressing in full PPE to test for COVID-19 on a regular basis. Simultaneously in-clinic protocols were quickly updated to increase protection for patients, providers, staff and anyone needing to enter our practice (e.g. deliveries, suppliers, etc.). Updating our Electronics Health Record (EHR) system, learning how to start up telehealth visits, and updating all our internal protocols concurrently was a challenge.

Over the coming weeks, all six of our providers would become familiar with the process of dressing in full PPE to test for COVID-19 on a regular basis.

As we began testing for COVID-19, we began to experience a percentage of our patients cancelling their appointments due to risk of exposure to COVID-19. Therefore, we quickly transitioned most of our patients to telehealth. We stressed continuity of care for all our patients as we are their PCPs and their HIV specialists if necessary.

One large on-going challenge has been which laboratory tests are appropriate to use and how to interpret the results. As CDC guidelines and the evolving data have attempted to keep us all abreast of these changes, confusion has remained a mainstay. We began using COVID-19 PCR tests from the usual large corporate laboratories, such as LabCorp and Quest as these were two of the first to market. Learning quickly that many PCR tests could have false negative rates as high as 30 percent, we quickly learned that our clinical acumen would serve us well when interpreting these results.

By the first week in April, we had tested many of our patients resulting in several positive results, most of who were symptomatic since we were following CDC protocol and testing only patients who were showing symptoms consistent with probable infection.

Once our office entered the second half of April, we had gotten into a new norm for our clinic. This includes constant disinfecting of our equipment, exam rooms, laboratory, common areas, and our own office spaces; daily calls to every scheduled patient (regardless of visit type) to obtain newly developed symptoms creating a 'pre-triage' system; wearing of PPE for all providers, staff, and any patients having in-clinic visits; becoming more efficient in our telehealth interactions; streamlining outside COVID-19 testing and regular follow-ups for each of these patients; all-the-while stressing that our HIV positive patients, and all patients with chronic co-morbidities continue their regular healthcare engagements.

We then recognized that COVID-19 antibody tests were about to be released and it was our responsibility to research how to test, which laboratories or platforms were more likely to give our reasonably accurate results, and if it was appropriate to even use these tests. This was going to add yet another layer of conversation and interpretation that, like so many other areas of focus recently, would test our ability to continue to give scientifically rigorous and accurate information to our patients.

As we move through this pandemic, we seem to be continually discovering new manifestations of this devastating disease. Whether gastroenterological, cardiovascular or neurological, this virus appears to deviously affect just about every human body system. Anecdotally in our own clinic, we have seen very few of our HIV patients test positive for COVID-19.

As in the writing of this article, new COVID-19 cases and deaths in Dallas, in our metropolitan area, and in Texas are all on the rise as our state is now "opening up." Weeks ago, the CDC recommended that the first phase of beginning to relax 'safer at home' orders would be to see at least 14 days of decline in cases and deaths. Our trajectory is moving in the opposite direction. Those recommendations are not being adhered to here nor in many other states in the country. As providers confronting the realities of COVID-19 daily, we ask ourselves many questions. Most are currently unanswerable. In the meantime, we will continue to show up and do our best because that is what our patients deserve. As we in our practice and many others have experienced, recovery and death, fear and joy, despair and hope, we will discover the answers through scientifically rigorous research and compassionate delivery of care. **HIV**

D. TREW DECKARD, PA-C, MHS, AAHIVS, began his involvement in the HIV/AIDS community in 1984 providing supportive services in Nashville, TN and then in San Francisco where he was engaged in community outreach. He transitioned into administration in the HIV/AIDS community providing these services from 1987-1991 in San Francisco. He began his career in medicine after his Bachelor's, which he received at the University of Texas at Arlington in 1995. He completed his Master's in Health Sciences and his P.A. degree from Duke University in 2000. Immediately he began his practice in Internal Medicine and HIV/AIDS specialty in Dallas. Since 2001 he has been practicing at the same outpatient Internal Medicine-HIV/AIDS practice.

COVID-19 and HIV
Resources for Health Care Providers

People with HIV may have concerns and questions related to their risk for coronavirus 2019 disease (COVID-19). We know that people at higher risk include older adults and those with serious underlying medical conditions like heart disease, diabetes, and lung disease.

In the United States, nearly half of people with HIV are aged 50 and older. Additionally, people with HIV may have higher rates of chronic heart and lung disease. The risk of getting very sick from COVID-19 is likely greatest in those with a low CD4 cell count and people not on HIV treatment.

To support health care providers managing these patients, the Centers for Disease Control and Prevention's (CDC's) *Let's Stop HIV Together* campaign for health care providers offers a collection of key federal resources on COVID-19 and HIV. These resources:

- Address concerns related to COVID-19 and HIV.
- Provide guidance to health care providers managing people with HIV.
- Highlight how people with HIV can protect their health.

Practice Tips for Health Care Providers

- Encourage people with HIV to continue taking HIV medications as prescribed. Achieving and maintaining an undetectable viral load is one of the best things your patients with HIV can do to stay healthy.
- If possible, prescribe a 90-day supply of antiretroviral therapy (ART) to maintain their ART regimen during physical distancing. Consider changing to mail-order delivery of medications when possible.
- Underscore the importance of following all CDC precautions to prevent COVID-19, such as physical distancing, hand-washing, wearing cloth face coverings in public settings, disinfecting surfaces, avoiding travel, and ensuring essential vaccinations are up to date.
- Together with each patient, weigh the risks and benefits of attending in-person, HIV-related clinic appointments. Factors to consider include the extent of local COVID-19 transmission, the health needs that will be addressed during the appointment, and the person's HIV status (e.g., CD4 cell count, HIV viral load) and overall health.
- Consider telemedicine visits for routine and non-urgent visits and adherence counseling.

To access COVID-19 and HIV resources for your practice and patients, visit:

www.cdc.gov/HIVNexus

HEALTH DEP

[MANAGING EPIDEMICS

BY LORI TREMMEL FREEMAN, MBA

THE COVID-19 RESPONSE has taken time, attention, and personnel away from many other heath priorities, as underfunded and understaffed local health departments (LHDs) respond to this extraordinary crisis. However, in doing so, existing services—including those for HIV, STIs, and viral hepatitis—are strained or paused, with health impacts that will ripple through communities.

Local health departments play a critical role in the prevention, detection, and treatment of various infectious diseases in the U.S. by monitoring disease trends, promoting and implementing best practices, and addressing gaps in the healthcare system. Health departments are often the first to identify and respond to local outbreaks and work closely with local providers to promote new biomedical interventions (e.g., pre-exposure prophylaxis (PrEP), direct-acting antivirals for hepatitis C (HCV)) and best practices (e.g., rapid initiation of antiretrovirals, extragenital STI testing). They also meet the needs of populations disproportionately affected by HIV, STIs, and viral hepatitis, including people of color, LGBTQ+ people, young people, low-income or un/under-insured people, people who use drugs (PWUD), and those in the criminal justice system. This involves conducting outreach and education to marginalized populations, operating clinics that provide critical care for people who may not be able to access it elsewhere, and implementing prevention strategies, such as immunization clinics or syringe services.

Local health departments also must consider the broader context in which people access health services by addressing syndemics (linked health problems that contribute to excess burden of disease in a population), and social and structural barriers. This involves establishing connections among services and providing case management to ensure access to shelter, food, and transportation, so that clients can initiate and adhere to necessary medical treatments.

The COVID-19 pandemic exposes and exacerbates inequities and gaps in our healthcare system. People of color are more likely

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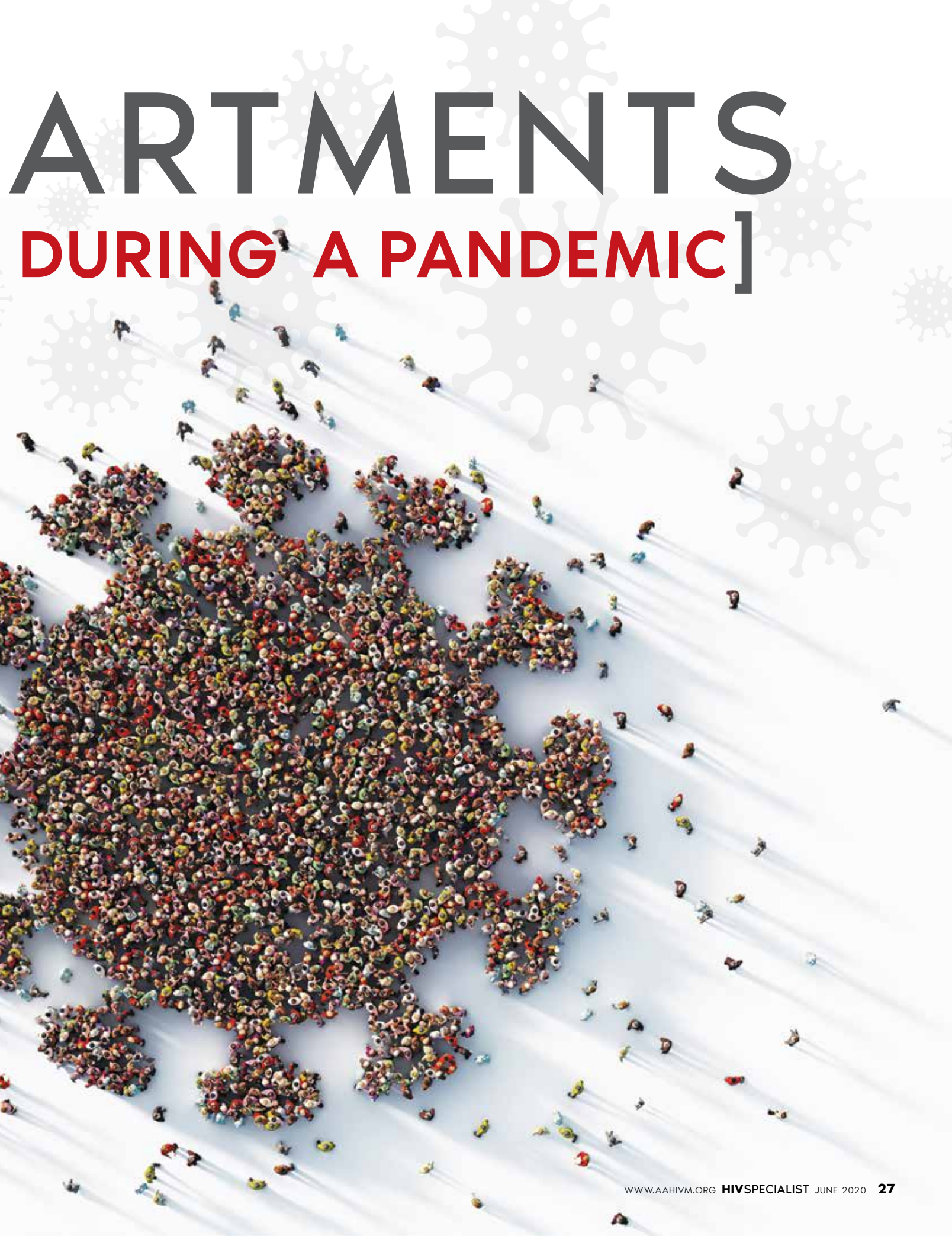
DURING A PANDEMIC]



to be diagnosed with and to die from COVID-19; people experiencing homelessness may not have a safe place to quarantine.[1] Persons who use drugs or who are in recovery may have limited access to substance use and harm-reduction services, putting them at risk for overdose, relapse along with the acquisition of HIV and HCV. While health departments work to protect marginalized populations, many are already stretched thin after more than a decade of budget cuts. Consequently, health departments and affiliated medical providers must work together to address inequities and ensure no one is left behind in the response to COVID-19.

The Impact of COVID-19 on HIV, STI, and Hepatitis Services

In March 2020, the National Association of County and City Health Officials (NACCHO) queried a convenience sample of LHD HIV, STI, and viral hepatitis programs regarding the impact of the pandemic on their programs and communities. More than 50 responded.[2] As LHD staff are pulled away from their regular work to respond to COVID-19, and as they implement social distancing guidelines to protect clients and staff, many have had to close their STI clinics, reduce their hours, or eliminate walk-in appointments. Local health departments also reported suspending outreach and education efforts, reducing HIV/STI partner services and testing, or only treating symptomatic HIV/STI cases and partners of confirmed cases. Many expressed concern for increased transmission of infections including HIV and hepatitis during the pandemic and are exploring innovative ways to adapt programs and services.

Local health departments and healthcare providers should consider how they can continue to offer HIV, STI, and hepatitis services through telehealth, self-testing, and other strategies during the pandemic.

Maintaining HIV, STI, and Hepatitis Services

Health departments are using a variety of strategies to maintain clinical services during the pandemic. Many are using telehealth to offer screening, counseling, case management, and partner services. To prevent and diagnose HIV, some health departments are mailing HIV testing kits to clients or using dating apps to encourage PrEP initiation. They are also using express testing—triage-based STI testing without a full clinical examination—to offer STI testing with fewer staff and limited face-to-face contact. Express strategies include using technology to automate the intake process or deliver test results, having patients collect their own samples, or testing asymptomatic patients without a provider visit. Health departments are also relying on syndromic management and presumptive treatment of STIs, which involves diagnosis and treating clients based on their symptoms. Others have expanded the use of expedited partner therapy (EPT), which involves treating the sexual partners of STI cases without a visit. To maintain harm reduction services, some programs are distributing more syringes per visit and letting clients place orders by phone.

Local health departments and healthcare providers should consider how they can continue to offer HIV, STI, and hepatitis services through telehealth, self-testing, and other strategies during the pandemic. While COVID-19 underscores the need to expand telehealth services, it will remain an important strategy to increase access to clinical services, especially for young people, those in rural communities, and others who face heightened barriers to care. Self-testing for HIV and other STIs can address gaps in care during and beyond the pandemic, reducing the burden of undiagnosed cases - including the more than 160,000 people living with undiagnosed HIV in the U.S.[3] However, providers should still deliver education and counseling, even when self-testing is used, and ensure access to timely treatment as needed.

The Toll of the Pandemic on Mental Health

Nearly half of Americans report that the pandemic has had a negative impact on their mental health.[4] This is likely due to social distancing, which limits our ability to connect with loved ones; unemployment, which causes financial anxiety and distress; and the grief resulting from the loss of so many lives. This may contribute to substance use, which is closely associated with mental health disorders, and often serves as a coping strategy in response to stress, grief, or pain.[5] Mental health and substance use disorders can prevent patients from seeking health services or adhering to treatment for chronic health conditions. To mitigate these trends, it will be important to establish linkages between clinical care, mental and behavioral health, and social services and to treat the whole patient—not merely one disease or condition.

Certain populations of people living with HIV (PLWH) are more likely to be lost to care, such as those with mental health or substance use disorders, as well as minorities or people experiencing housing instability or poverty.[6,7,8] Case managers, patient navigators, linkage to care specialists, and community health workers—many of whom come from and are positioned within the community they are trying to reach—can form meaningful relationships with clients. These relationships enable them to link patients to care and address unmet needs that are keeping patients from being retained in care. However, many of the strategies, including outreach and peer support groups, that link vulnerable populations to prevention and care services have been suspended during this pandemic. Therefore, it is critical to re-evaluate current strategies and what is defined as "essential services" to ensure no one is left behind.

Addressing Stigma, Discrimination, and Bias

HIV is a highly stigmatized condition, and it's important to address potential forms of stigma that may occur when PLWH seek treatment for COVID-19. As reflected in the U.S. Department of Health and Human Services guidance, PLWH who are diagnosed with COVID-19 should not be treated or clinically managed differently than the general public, including during triage determinations.[9] Other priority populations such as LGBTQ+ people or PWUD also experience stigma and discrimination when seeking health services, and implicit bias against people of color is common among healthcare providers.[10,11,12] The legacy of racism and unethical research practices has engendered medical mistrust among communities of color, and may deter people from seeking timely testing and treatment for COVID-19, and continued bias and discrimination has already resulted in people of color being misdiagnosed or turned away when presenting with COVID-19 symptoms.[7] It is important to recognize and work to overcome medical mistrust and implicit bias, as they can be barriers in educating, testing, and caring for populations disproportionately affected by COVID-19. Health departments should monitor inequities in COVID-19 case and deaths and consider how they can access marginalized communities with testing initiatives to ensure early diagnosis and rapid treatment and containment.

Looking Forward: Strengthening the Public Health Workforce

Since the "Great Recession" of 2007 to 2009, local health departments have lost nearly one-fourth of their workforce, leaving many overburdened and under-resourced. In 2013, 62 percent of their STI programs reported budget cuts, and of those, 42 percent reported reductions in partner services—a critical strategy to prevent further HIV/STI transmission and ensure access to timely treatment. Not only has this hindered their ability to combat HIV and other STIs, but it undermines their ability to respond to outbreaks, as the skills required for partner services translate well to contact tracing and other response activities. Reopening the United States through the COVID-19 pandemic will require at least 100,000 contact tracers. While the expertise of the health department-based clinical programs can be leveraged to support this work, far more resources are needed to expand and strengthen the workforce. Our health departments are key leaders in the prevention and care of HIV, STIs, viral hepatitis, and other infectious disease and work closely with the healthcare sector to assure access to health services. Ending the HIV epidemic, eliminating viral hepatitis, and combatting the STI crisis are in reach, but we must ensure that local public health has the resources and support to maintain clinical services while concurrently playing a critical role in COVID-19 response efforts. **HIV**

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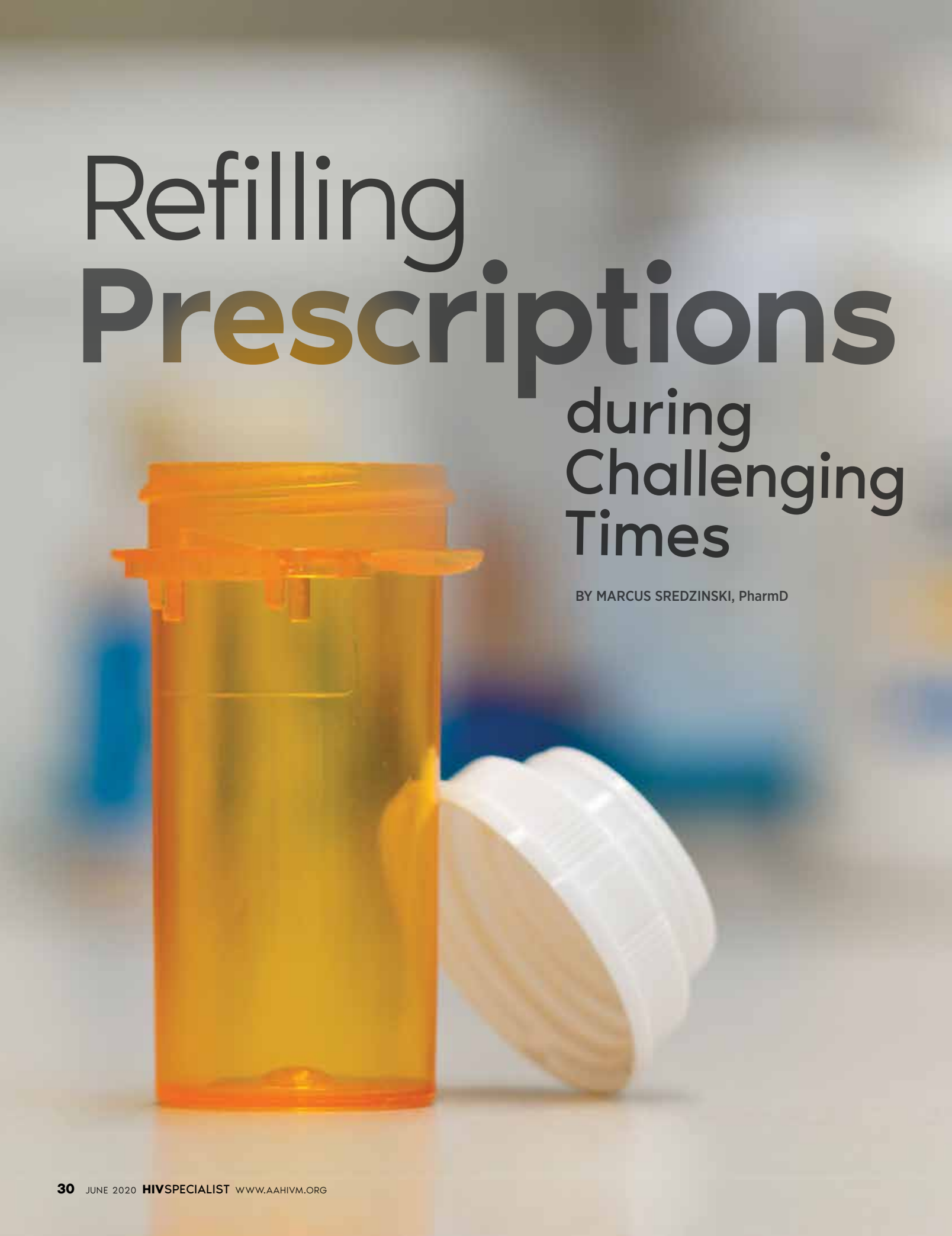
Refilling Prescriptions during Challenging Times

BY MARCUS SREDZINSKI, PharmD



MANY PEOPLE in the U.S., including those with HIV, may be having difficulty getting their prescriptions filled during the COVID-19 pandemic. A lag in refills causes anxiety for all, but for HIV patients, a delay in medication can cause additional anxiety and compromise their health. Making it even more stressful for these patients, the retail cost of HIV medications can range from $3000 to $5000 per month which is unaffordable for most without prescription coverage.

A person living with HIV is typically able to obtain a 30-day supply or their antiretroviral therapy(ART). However, it is not typical to simply walk into a pharmacy and request a 60 or 90 day supply. To better accommodate, some health insurers and State ADAP programs are adapting to the current COVID-19 pandemic by lifting restrictions for refills. According to America's Health Insurance Plans (AHIP) these emergency plans "may include easing network requirements, prescription drug coverage, referral requirements, and/or cost sharing." Many insurance companies are waiving limits on 30-day supplies of prescriptions and encouraging people to get 90-day supplies instead in order to maintain shelter-in-place recommendations. This not only provides patients with three months of their medication, but also reduces wait time and burden on pharmacy staff. However, providers and patients interested in a 90-day-supply should make sure that their insurance has changed their policies before placing the order.

Rules and Regulations Vary by State

Every state has the ability to set their own pharmaceutical regulations with laws guiding pharmacy standards and requirements. During the pandemic, states continue to amend their general regulations to combat COVID-19. In terms of pharmaceutical regulations, pharmacies are starting to change how they deliver prescriptions to people who are in quarantine. For example, at Northern Pharmacy in northeast Baltimore, the front door is locked, and employees wearing masks and gloves greet customers at the back entrance. Other states are taking even more drastic measures to help those in need of their medication.

Finding the Best Price

The Kaiser Family Foundation reported earlier this year the annual cost of family health coverage for Americans will hit a new record in 2020, exceeding $20,000. That's a 5 percent increase from last year, pushing a large number of American workers into plans that cover less or cost more—or force them to live without health insurance altogether. These costs may be even higher as they sometimes do not include co-payments, deductibles and other forms of cost-sharing once patients need care. Kaiser's research shows that while employers pay most of the costs of health coverage, workers' average contribution is now $6,000 for a family plan. For many HIV patients, there are discount prescription programs and coupons that can help them with the cost of ART. ScriptSave WellRx has a prescription discount program that has helped more than half a million consumers save more than $10 billion dollars on prescription costs. Patients need to be reminded by their care providers and pharmacist of these different discount programs.

Prescription Delivery

Many pharmacy chains such as CVS, Rite Aid, HEB and Walgreens, are now offering free home delivery of prescriptions in 1–2 business days. Although delivery for prescriptions is available, there are some restrictions that may leave patients ineligible for this service. Specific medications for HIV patients are available for free delivery in select areas from pharmacies such as Walgreens and CVS.

Pharmacy Benefit Managers Principles

America's pharmacy benefit managers (PBMs) manage prescription drug benefits on behalf of health insurers. They have a significant behind-the-scenes impact in determining total drug costs for insurers, shaping patients' access to medications, and determining how much pharmacies are paid. In this case, PBM's are instilling new principles that change how prescription drugs are managed during the coronavirus pandemic.

These principles are:

- PBMs, other drug supply chain stakeholders and federal, state, and local government partners should work together to sustain access to care for patients and prevent drug shortages.
- PBMs recommend multiple approaches be made available that ensure patients have access to their prescription drugs now and in the days ahead, by balancing convenient, reliable access—such as home delivery and additional supply on hand—with the potential for drug shortages.
- PBMs recommend guidance from federal, state, and local government agencies that balances patients' need to stay at home, the clinical appropriateness of supply for any given drug, and the need to prevent future drug shortages. **HIV**

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SHUTTERSTOCK/ DAVID PINO PHOTOGRAPHY

Missed Opportunity or

A TALE OF TWO

BY KAYLA L. CARR, FNP-C AND
ROBERTO PARULAN SANTOS, MD, MSCS, FAAP, AAHIVS, FIDSA

THE COVID-19 PANDEMIC creates a significant challenge in delivering services to a vulnerable group of patients—youth with HIV. Before the pandemic, there were missed opportunities in the care of this vulnerable population. Patients ages 13 to 24 years old are the least likely to be aware of their HIV status.[1] Adolescents are also among the most challenging group to engage in healthcare.[2]

In the era of COVID-19, the younger population is less likely to be correctly social distancing. The footage of young spring breakers flocking to the beaches, declaring their invincibility to the virus is just one example. This is a common mentality that HIV providers have to confront. And yet medical providers continue to be creative and strive to be better providers for the youth.

While COVID-19 presents obstacles to HIV testing and care, it also challenges providers to be creative, innovative and to confront the pandemic head on so as to ease the burden in caring for patients with HIV disease. As providers strive to optimize the care of adolescents and young adults, consider these missed opportunities that occurred before the pandemic.

Transgender Clinic

An 18 year old was recently diagnosed with HIV at a local transgender clinic. He reports being sexually active and quite "versatile" in his behaviors. He lives in a rural community and like other teenagers of his age, enjoys the company of friends.

ADOLESCENTS

Opportunity not to be Missed

He has been sexually active for several months with people older than him. He lives with his single parent who is very supportive of him and aware of his HIV status. The patient has been taking his antiretroviral (ARV) medication that, in his own words, "made his virus go away in less than a month." He thoroughly enjoys coming to the transgender clinic since he finds it to be a safe place and notes that "it's like a one-stop shop that cares for all his needs."[2] He does not have a primary care provider (PCP) and requests that the transgender clinic serve as his medical home. Several months prior to the visit, he was evaluated in a local hospital clinic for an acute medical condition. By his report, no one asked him about being sexually active, having possible sexually transmitted diseases (STD) or discussed HIV prevention. He was not offered HIV testing at the encounter.

Missed Opportunity

Adolescents remain disproportionately affected by HIV. They engage in risky sexual behaviors including 10 percent having four or more sex partners and only 56 percent using condoms according to a survey study published by the Centers for Disease Control and Prevention (CDC) in 2018.[3] These behaviors can lead to unintended health outcomes such as STDs, including HIV. In 2018, adolescents and young adults ages 13 to 24 years old comprised at least 21 percent of those newly diagnosed with HIV in the U.S.[1] Hence, HIV testing should be offered to young patients. Since 2006, the CDC has recommended routine HIV screening for patients ages 13 to 64 years old in all healthcare settings.[4] Unfortunately, this is not consistently the case. Those ages 13 to 24 years old are the least likely to be aware of their HIV status with only four out of seven knowing they have the virus.[1]

SHUTTERSTOCK/ STORY TIME STUDIO

If the 18 year old had been offered HIV testing at the hospital clinic and found to be negative, he could have been counseled on risk-reduction strategies including safer sex practices, pre-exposure prophylaxis (PrEP) and guidance towards a healthy sexual life. If he had been found to be positive, he could have been linked earlier to care, immediately started ARV medication and learned about how undetectable = untransmittable.

More than a decade after the CDC recommended routinely testing for HIV, the rate of HIV testing among adolescents remains low. In the recent Youth Risk Behavior Surveillance, only nine percent of high school students had been tested for HIV.[3] In the southeastern U.S., where HIV infections are the most prevalent, HIV testing rates were reported in Texas (13.5%), Louisiana (22.5%), South Carolina (12.1%) and North Carolina (10.8%) while Alabama, Georgia and Mississippi did not have available weighted data.[3]

There have been reports of missed opportunities for HIV screening among adolescents in the emergency department (ED) settings and among those with acute STDs. In a pediatric ED in Dallas, Texas, a retrospective chart reviewed among more than 200 adolescents noted a missed opportunity encounter score (MOE, defined as inpatient, outpatient and ED encounters without HIV screening performed) of 6.7 for every new HIV infection compared to a nearby adult ED with a MOE score of 0.9. ($p<0.01$).[5] The research team stated that universal HIV screening is key in identifying gaps in the diagnosis of HIV infection particularly in areas with high HIV prevalence.[5]

Another retrospective study involving at least 1300 adolescents between the ages of 13 and 24 years old from July 2014 to December 2017 were evaluated for acute STDs (chlamydia, gonorrhea, syphilis and trichomoniasis) in two urban clinics. Only half (55%) of those with an acute STD were tested for HIV, when in reality all should have been. This is another reminder of how HIV testing rates remain suboptimal among adolescents even among those evaluated for STDs.[6]

New epidemiologic data from the CDC suggests declining HIV diagnoses (reduced by 10%) among youth overall from 2010-2017.[1] The trend for HIV infections varied for different groups of youth. It is important to note that HIV diagnoses decreased among those disproportionately affected previously including young Black, gay and bisexual men.[1] A poster presentation from the Conference on Retroviruses and Opportunistic Infections (CROI) in 2018, entitled "The changing face of the HIV epidemic among people who injects drugs" authored by Lyss SB, et al noted that HIV diagnoses increased among 13 to 34 year olds (by age group), among Whites (by race/ethnicity), and in those living outside larger central metropolitan areas (by urbanicity).[7] This data provides a changing landscape for HIV infections among youth and how providers can adopt strategies to prevent missed opportunities for diagnosing HIV.

Adolescent Clinic

In this scenario, the same 18 year old learned about sexual health issues and prevention of STDs, including HIV prevention and testing, from a local school nurse. He discovered his HIV diagnosis through an HIV test performed at the school clinic. When his pediatrician learned that he had tested positive, he referred him to an adolescent clinic.

School-based health services may include HIV education, school-wide programming, creation of safe and affirming spaces for sexual minority youth and Condom Availability Programs (CAP)

Opportunity Not to Be Missed

Approximately 15 million adolescents per day attend public schools, on average six hours a day, during these formative developmental years.[8] The American Academy of Pediatrics recognizes school health services as a critical piece in the health safety net.[9] Certified school nurses and their aides are equipped to provide safe, confidential and cost-effective care in context. School-based health services may include HIV education, school-wide programming, creation of safe and affirming spaces for sexual minority youth and Condom Availability Programs (CAP).

Nurses effectively implement HIV counseling, screening and referral protocols in collaboration with physicians. In some states they independently perform Medicaid Early and Periodic Screening, Diagnostic and Treatment (EPSDT) visits. EPSDT visits can serve as critical points for HIV counseling and screening. School-based health centers (SBHC) offer an expanded scope of services where physicians, nurse practitioners and nurses offer collaborative care, often in partnership with local hospitals or healthcare systems. For students, a visit to the school health room or clinic can be an opportunity for nurses to provide education, HIV screening, and if needed linkage to an HIV provider.

Despite the CDC's recommendations to increase the number of adolescents with access to school health services, disparity remains with approximately 25 percent of schools in the U.S. having no school nurse or SBHC.[10] Advocating for school nurses is critical in the prevention of HIV infection and helps bridge the gap in HIV diagnoses among adolescents.

Informed by the *Whole School, Whole Community, Whole Child* (WSCC) Model, the CDC provides several resources related to HIV care in schools.[11] *Get Yourself Tested* is an evidence-based HIV prevention toolkit, complete with a Get-Tested locator tool to help find testing sites, should screening not be available within the school.[12–14] CDC funding for state and local education agencies is available for school health services,[15] although funding restrictions such as having to provide care for 10,000 students over a five-year funding period may be a challenge for many

schools. Alternate sources of funding for HIV programming in schools include Medicaid billing, partnerships with local state health departments and Title X funding.[16]

Amidst COVID-19 Pandemic

On March 20, 2020, the Department of Health and Human Services (DHHS) published its "Interim Guidance for COVID-19 and Persons with HIV" despite limited data available and the rapidly evolving information between HIV and SARS-CoV-2 infections.[17] The guidance provides some framework for HIV medical providers to continue caring for patients with HIV. It addresses the use of virtual clinic visits using the telehealth platform, Drive Thru Blood Draw, and other creative strategies, which can facilitate medical care during a time when access to clinic sites is extremely limited or not an option.

The COVID-19 pandemic could be an ideal time to adopt quality improvement (QI) projects intended to mitigate the effects of SARS-CoV-2 infections. There are various harm reduction strategies including calling patients to check on their medication needs as well as reminding patients of the importance of adherence to their medications. Another is a video clip highlighting the four principles of hand washing awareness in cartoon format (https://www.henrythehand.com/) endorsed by the American Medical Association and the American Academy of Family Physicians regarding how to appropriately wash hands to prevent respiratory viral infections, includes SARS-CoV-2. These are few of the positive attitudes that healthcare providers can foster and make a difference in the behaviors and lives of patients.[18]

The tales of the two adolescents give perspective to providers to be resilient, creative and innovative in the delivery of care to this vulnerable population who remain at risk for or are already at risk for HIV. It takes a village to end the HIV epidemic and everyone's collaborative effort should be sought. Patients rely on providers to guide them with simple, straight forward and honest advice, especially during the COVID-19 pandemic. **HIV**

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HIV-COVID Registry Laun

EVALUATING THE IMPACT OF COVID-19 CASES IN HIV PATIENTS

BY ANITA KOHLI, MD

ched by HIV Providers

TO AID IN THE UNDERSTANDING of the impacts of COVID-19 on HIV patients, physicians from the University of Maryland, Baltimore and Arizona Liver Health in Chandler, Ariz., have launched the CURE (Coronavirus Under Research Exclusion) registry. CURE is an HIV-COVID registry for providers from any location in the United States to report confirmed cases of COVID-19 occurring in HIV patients.

The goal of the registry is to help elucidate the natural history of COVID-19 in patients with HIV, determine the effects of treatments given, and analyze the impacts of factors like age, CD4 counts, and comorbidities on COVID-19 outcomes. Through updates published twice every week, these findings are being shared with providers around the world to accelerate the understanding of COVID-19 and its impact on persons with HIV disease.

There is little data on how COVID-19 affects patients with HIV. For persons living with HIV (PLWH), the effect and outcomes of co-infection with SARS-CoV-2 is unclear. The HIV virus causes abnormal or impaired response to infections, so there is a potential for increased adverse outcomes in patients with HIV who become infected with SARS-CoV-2. Through the data collected from the registry, providers can learn how best to manage and treat patients with HIV and COVID-19 and improve the care of patients co-infected with both viruses, as well as overall survival rates.

Summaries of data reported to the registry will be shared and updated on the website at least twice a week for medical providers to review. Given our unique patient population, we hope providers will take the time to share this critical information so we can rapidly find answers on how best to care for HIV patients with COVID-19.

Data entry into HIV-COVID registry should only take approximately five minutes. Providers are encouraged to report all cases regardless of severity, including asymptomatic cases detected through public health screening.

Similar efforts to gather data on COVID in subpopulations are in place by other groups including The Global Rheumatology Alliance and Surveillance Epidemiology Coronavirus Under Research Exclusion (SECURE-IBD). We were inspired to establish this registry after seeing how other groups have gathered important and timely information to aid their colleagues in managing patients.

To find out more information or to report a case as a provider in the U.S., visit the CURE HIV-COVID Registry at www.hivcovid.org. **HIV**

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SHUTTERSTOCK/ AMERICA 365/ SABUHI NOVRUZOV

Helping Your Patients Qualify for Social Security Disability Benefits

BY RACHEL GAFFNEY, DISABILITY BENEFITS CENTER

SHUTTERSTOCK/ ISOVECTOR; ISTOCK/ GEORGE TSARTSIANIDIS

IF YOU HAVE A PATIENT that has been diagnosed with HIV/AIDS and is unable to work because of the condition, he or she may qualify for disability benefits from the Social Security Administration (SSA). An individual with an HIV/AIDS diagnosis is likely to be approved for disability benefits if he or she has a symptomatic infection. Those who have symptomatic HIV/AIDS will need to meet specific medical criteria to have their claim approved.

The SSA uses a very detailed process, and the patient must meet the medical criteria established for a qualifying condition to confirm that he or she is disabled and unable to work. The disability claims process is complex, requiring a detailed form to be completed and supporting documentation provided, including hard medical evidence, to have a claim approved. As a healthcare provider, you can help apply for disability benefits on behalf of a patient.

Meeting the Medical Criteria

The SSA uses a medical guide, which is called the Blue Book, to determine if a claimant medically qualifies as disabled per the guidelines used by the SSA. To show a claimant meets the criteria of the listing for HIV/AIDS, you will need to provide medical documentation, including accepted medical tests that confirm an HIV diagnosis. Accepted tests include HIV antibody tests, HIV RNA or DNA detection tests, HIV p24 antigen test, isolation of HIV viral culture or other highly specific lab tests effectively used to diagnose HIV.

If a patient doesn't have the results from one of those tests , other medical evidence will need to be provided, such as a proof of the diagnosis of an opportunistic disease that is common for those who have HIV/AIDS. For example, the opportunistic disease must show there is a defect in cell-mediated immunity and it must have supporting laboratory evidence. For cancer, you must provide biopsy results. For toxoplasmosis of the brain, you must show a brain imaging scan, positive serology tests or proof of the symptoms of the condition.

Using an RFC and Medical Vocational Allowance

If a patient doesn't meet the specific criteria of the HIV/AIDS disability listing, they may still qualify using a medical vocational allowance and through the support of a residual functional capacity (RFC) form. The SSA will review the medications taken for the condition and how they limit functioning. While some medications improve symptoms from the condition, they may have disabling side effects. The SSA will likely need to look at any adverse reactions that occur, as well as the difficulty and time involved in a treatment plan, how long treatment plan lasts, and any effects of that treatment on mental functioning.

There are many common side effects of medications for treating HIV/AIDS. Those side effects may include fatigue, diarrhea, nausea, joint pain, abdominal pains, diarrhea, hypersensitivity, fatigue, sleep disturbances, depression, dizziness, general weakness and anxiety. Sometimes there are even more severe side effects from treatment, such as liver damage or fat, sugar or acid buildup in the blood stream. Confusion, inability to concentrate, memory problems, insomnia and fatigue caused by the medications can be disabling.

A treating physician may complete an RFC for the patient, which will be very detailed and explain what he or she can and cannot do. It will say how long a patient can stand, how frequently he or she must reposition, how far he or she can walk and detail any mental impairments. By considering medical problems, restrictions and limitations, age, educational background, and work history then reviewing the RFC, the SSA can determine if a claimant can work, and if so, what kind of work he or she can do.

Applying for Disability Benefits with HIV/AIDS

If a patient has HIV/AIDS and it is disabling, he or she will want to start the disability claims process. You can start his or her application process online at the SSA website, or by calling 1-800-772-1213 and speaking with a representative. The patient can also make an appointment to apply at a nearby SSA field office. Remember, detailed medical evidence is essential to a claim's success, so no matter how you apply, have a patient's medical evidence ready when applying on his or her behalf. **HIV**

RACHEL GAFFNEY is an Outreach Specialist at Disability Benefits Center, an independent organization dedicated to helping people of all ages receive the Social Security disability benefits they deserve. She currently lives in Boston, Mass. but helps those seeking assistance nationwide. If you have any questions on this article or would like a little more information on how to qualify for disability benefits, she can be reached at rsg@ssd-help.org.

RESOURCES

https://www.ssa.gov/benefits/disability/

https://www.ssa.gov/disability/professionals/bluebook/AdultListings.htm

https://www.disabilitybenefitscenter.org/glossary/acceptable-medical-source

https://www.ssa.gov/disability/professionals/bluebook/14.00-Immune-Adult.htm - 14_11

https://secure.ssa.gov/apps10/poms/images/SSA4/G-SSA-4734-U8-1.pdf

https://www.disabilitybenefitscenter.org/state-social-security-disability

UPDATE

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AAHIVM Chief Medical Officer

FEATURED LITERATURE FROM CROI 2020

Chinula L et al. **Safety and Efficacy of Dolutegravir versus Efavirenz and Tenofovir Disoproxil Fumarate versus Tenofovir Alafenamide in Pregnancy: IMPAACT 2010 Trial**. *CROI 2020, Boston, MA. Abstract # 130*

This study compared the safety and virologic efficacy in pregnancy of three antiviral regimens: Dolutegravir (DTG) + emtricitabine (FTC)/tenofovir alafenamide fumarate (TAF); DTG + FTC/tenofovir disoproxil fumarate (TDF) and efavirenz (EFV)/FTC/TDF. The trial included 643 HIV-infected women from 22 sites in nine countries. The subjects were randomized (1:1:1) to open-label DTG+FTC/TAF, DTG+FTC/TDF, or EFV/FTC/TDF at 14 to 28 weeks gestational age. The women were allowed to have taken no more than 14 days of antiretroviral therapy (ART) before randomization. The baseline median gestational age at study entry was 22 weeks. Median viral load at baseline was 903 copies/mL and the median CD4 count was 466 cells/ųL.

The primary goal of the IMPAACT trial was comparing the two combined DTG-containing arms to the EFV arm for non-inferiority (- 10% margin), and also superiority, with regards to having a viral load of < 200 copies/mL at time of delivery. Safety outcomes between the three arms included: A) Adverse pregnancy outcomes (preterm delivery <37 weeks, small for GA <10 percentile, spontaneous abortion or stillbirth; B) Maternal grade >three adverse events through 14 days postpartum; C) infant grade >three adverse events including neonatal death at <28 days. **At time of delivery, 97.5 percent of women in the combined DTG arms compared to 91 percent in the EFV arm had viral loads of <200 cp/mL. This difference was statistically significant (p=0.005)**. Pregnancy outcomes were available for 99.5 percent of the subjects. Only 24 percent of women in the DTG+FTC/TAF arm had an adverse pregnancy outcome compared to 33 percent in the DTG+FTC/TDF and 33 percent in the EFV/FTC/TDF arms. Two infants were diagnosed with HIV at <14 days, one each in DTG+FTC/TAF and DTG+FTC/TDF arms. For one, the maternal VL at delivery was 58,590 cp/mL however, the second mother was undetectable (< 40 cp/mL), suggesting in-utero transmission occurred.

AUTHOR'S COMMENTARY:
The findings of the IMPAACT trial should influence clinical practice including an update of the Department of Health and Human Services (DHHS) perinatal guidelines for HIV treatment in pregnancy. Not only were virologic outcomes superior with DTG but there were also fewer adverse events with DTG + FTC/TAF. Data published in 2019 re-established the overall safety and efficacy of DTG use in pregnancy regarding neural tube defects and this update was included in guidance by the World Health Organization (WHO). Prior to the IMPAACT trial there was little data on the use of TAF in pregnancy. This study suggests that it may be preferable to TDF.
Webcast Link: http://www.croiwebcasts.org/p/2020croi/croi/130

FEATURED LITERATURE FROM CROI 2020

Orkin C et al. **Long-acting CABOTEGRAVIR + RILPIVIRINE for HIV Treatment: Flair Week 96 Results**. *CROI 2020 | Boston, MA. #* 482

The 48-week data on the FLAIR study investigating the use of two long-acting (LA) injectable agents, the integrase strand transfer inhibitor (INSTI) cabotegravir (CAB) and the non-nucleoside reverse transcriptase inhibitor (NNRTI) rilpivirine (RPV) were recently published in The New England Journal of Medicine (NEJM) and discussed here (March 24, 2020). At CROI, the 96-week data from the study was presented. The trial included 566 antiretroviral therapy (ART)-naïve patients who were virologically suppressed (HIV-1 RNA < 50 c/mL) while taking a three-drug oral regimen of dolutegravir/abacavir/lamivudine. After 16 weeks, participants were randomized (1:1) to either continued oral therapy or switch to CAB + RPV given as two IM injections every four weeks. Those randomized to the CAB/RPV arm first received oral formulations of these agent for four weeks. The two endpoints assessed at 96 weeks were subjects with viral loads ≥50c/mL and <50c/mL. Confirmed virologic failures included those with two consecutive viral loads ≥200c/mL. At week 96, only nine (3.2%) participants in each arm had viral loads > 50c/mL, confirming non-inferiority seen at week 48. The rate of virologic failure in the CAB + RPV was unchanged at about one percent from week 48 to week 96. Of these four participants, three had NNRTI mutations and one had an INSTI mutation. The rate of failure was the same (n=4) in the oral therapy arms.

Across both arms, adverse events (AE) were uncommon and led to treatment withdrawal in only one percent in the oral therapy arm and four percent in the IM arm. Injection site reactions were the most common drug-related AE but their frequency decreased over time. Moreover, at week 96 those receiving the IM therapy reported greater overall treatment satisfaction compared to those in the oral therapy arm. These results attest to the durability of CAB+RPV LA. An extension phase of the FLAIR study is ongoing.

AUTHOR'S COMMENTARY:
These data complement the 96-week data from ATLAS 2M and provide additional evidence for the efficacy and tolerability of long-acting injectable ART. On March 20th, IM CAB plus RPV (Cabenuva®) was approved for use in Canada. As noted in my commentary on ATLAS2M, I would anticipate having these agents available sometime during 2020 with hopefully an eight-week treatment option for patients. The initial FDA approval of CAB-RPV was expected in December 2019 but reportedly delayed due to manufacturing problems and not specifically efficacy or safety concerns.
Webcast Video Link: http://www.croiwebcasts.org/p/2020croi/croi/482-PS

FEATURED LITERATURE FROM CROI 2020

Overton ET al. **CABOTEGRAVIR + RILPIVIRINE every two Months is Non-Inferior to Monthly: ATLAS-2M Stud**y. *CROI 2020, Boston, MA. Abstract #34*

The two-drug regimen of long-acting (LA) cabotegravir (CAB) and rilpivirine (RPV) given IM every four weeks was found to be highly effective and non-inferior to daily oral antiretroviral therapy (ART) in two Phase 3 studies. These results and the known pharmacokinetics of CAB+RPV enabled the evaluation of a longer and more convenient eight-week dosing interval.

The **ATLAS-2M** is a multicenter, open-label, Phase 3b non-inferiority (NI) study of CAB+RPV maintenance therapy given Q 8-weeks or Q 4-weeks to treatment-experienced, HIV-infected adults. The study randomized 1,045 persons who were virologically suppressed on IM CAB+RPV every four weeks (rolled over from the ATLAS study) or on oral therapy, to receive CAB+RPV every eight or every four weeks. Sixty-three percent were naive to CAB+RPV LA while 37 percent transitioned from the Q 4-week arm of the ATLAS trial. The primary endpoint (at week 48) was the proportion of subjects with plasma HIV-1 RNA ≥ 50 c/mL with a NI margin of four percent and the secondary endpoint was the proportion with HIV-1 RNA < 50 c/mL based on a NI margin of 10 percent. For the primary endpoint CAB +RPV given Q 8 weeks was noninferior to Q 4-week dosing (1.7% vs 1.0%) and for the secondary analysis 94.3 percent vs 93.5 percent had viral loads < 50 c/mL. There were eight confirmed virologic failures (two sequential VLs of > 200 c/mL) in the eight-week arm and two confirmed virologic failures in the Q 4-week arm. Five and 0 (NOT SURE WHAT THIS MEANS) of the virologic failures respectively, had archived resistance-associated mutations to RPV either alone (n=4) or with a CAB mutation (n=1) at baseline. On-treatment resistance mutations to RPV, CAB, or both drugs not present at baseline were found in five out of eight of the eight-week virologic failures and both of the four-week virologic failures. The safety profiles were similar for four-week and eight-week dosing. Injection site reactions were reported in 98 percent of participants but were mild or moderate and lasted a median of three days. Discontinuation for an adverse event occurred in only two percent of patients including 12 in the eight-week and 13 in the four-week groups. Of those treated every eight weeks (rolled over from ATLAS Q 4-weeks), 93 percent expressed a preference for Q 8-week dosing. This study concludes that Q 8-week dosing of LA CAB+RPV is non-inferior to Q 4-Week dosing and generally well tolerated, thus supporting the therapeutic effectiveness of these two antiviral agents given at two-month intervals.

AUTHOR'S COMMENTARY

This is the follow-up data from the 48-week data recently published in The New England Journal of Medicine (NEJM) and presented as the Clinical Research Update on March 24th (ATLAS and FLAIR trials). It appears likely by the end of this year, if not sooner, long-acting IM CAB+RPV will be a therapeutic option for some of our patients. However, there will be logistical issues with clinical sites and reimbursement factors to work out. Overall, an eight-week option for this treatment would certainly be preferable to every four weeks.
Webcast Link: http://www.croiwebcasts.org/p/2020croi/croi/34

FEATURED LITERATURE FROM CROI 2020

Marcus JL. **Increased Overall Life Expectancy but not Comorbidity-free Years for People with HIV.** *CROI 2020, Boston, MA. Abstract # 151.*

The life expectancy for persons living with HIV (PLWH) is often noted in the post-antiretroviral (ART) era to be "normal" or "similar" to those without HIV. However, this opinion is perhaps more observational than quantitatively factual. This study included a large cohort (N=39,000) of adult PLWH who lived in California, Maryland, Virginia and the District of Columbia. They were matched 1:10 for ethnicity/race, sex, calendar year and site of medical care to uninfected adults. These patients were in care from 2000 to 2016. The authors used abridged life tables to estimate the average number of total and comorbidity-free years of life remaining, beginning at age 21 by calendar year. The co-morbidities specifically looked at included: cancer, cardiovascular disease (CVD), diabetes, liver disease, renal disease or respiratory disease. Among the 39,000 PLWH, there were 2,661 deaths compared to 9,147 deaths in the control group which translated to mortality rates of 1,303 verses 390 per 100,000 person years. From 2000-2003, life expectancy at age 21 was about 58 for PLWH compared to 79 for those without HIV–a gap of about 20 years.

Over time, life expectancy for both groups improved and in 2016 a PLWH were expected to live until age 77 compared to age 86 for someone not infected–a significant gap of nine years. However, for those who initiated ART with a CD4 count > 500 cells/mm3 the study found no difference in life expectancy. In regards to comorbidities, PLWH were likely to have a first onset of one of these conditions at age 37 compared to age 52 in persons without HIV. This number has not improved over time. For persons who initiated ART with a CD4 count > 500 cells/mm3 there was a decrease in incidence of CVD and cancer but not diabetes, kidney, liver or lung disease or renal disease.

AUTHOR'S COMMENTARY

This is an important study rich with data that has significant clinical implications for our patients. While it is true patients with HIV are living longer, life expectancy across the board is NOT the same as those without HIV, except for those who had a normal CD4 count at the time of diagnosis and had early initiation of ART. This supports our goals of early diagnosis and treatment known to be imperative for a variety of reasons, including preventing new infections. Conversely, HIV infection appears to still confer increase risk for co-morbid illness with a much earlier onset than in persons without HIV, resulting in "fewer healthy years." I would encourage you to watch the FULL presentation of this study by Dr. Julia Marcus at the link below. http://www.croiwebcasts.org/console/player/44840?mediaType=slideVideo& **HIV**

NEW FROM CDC

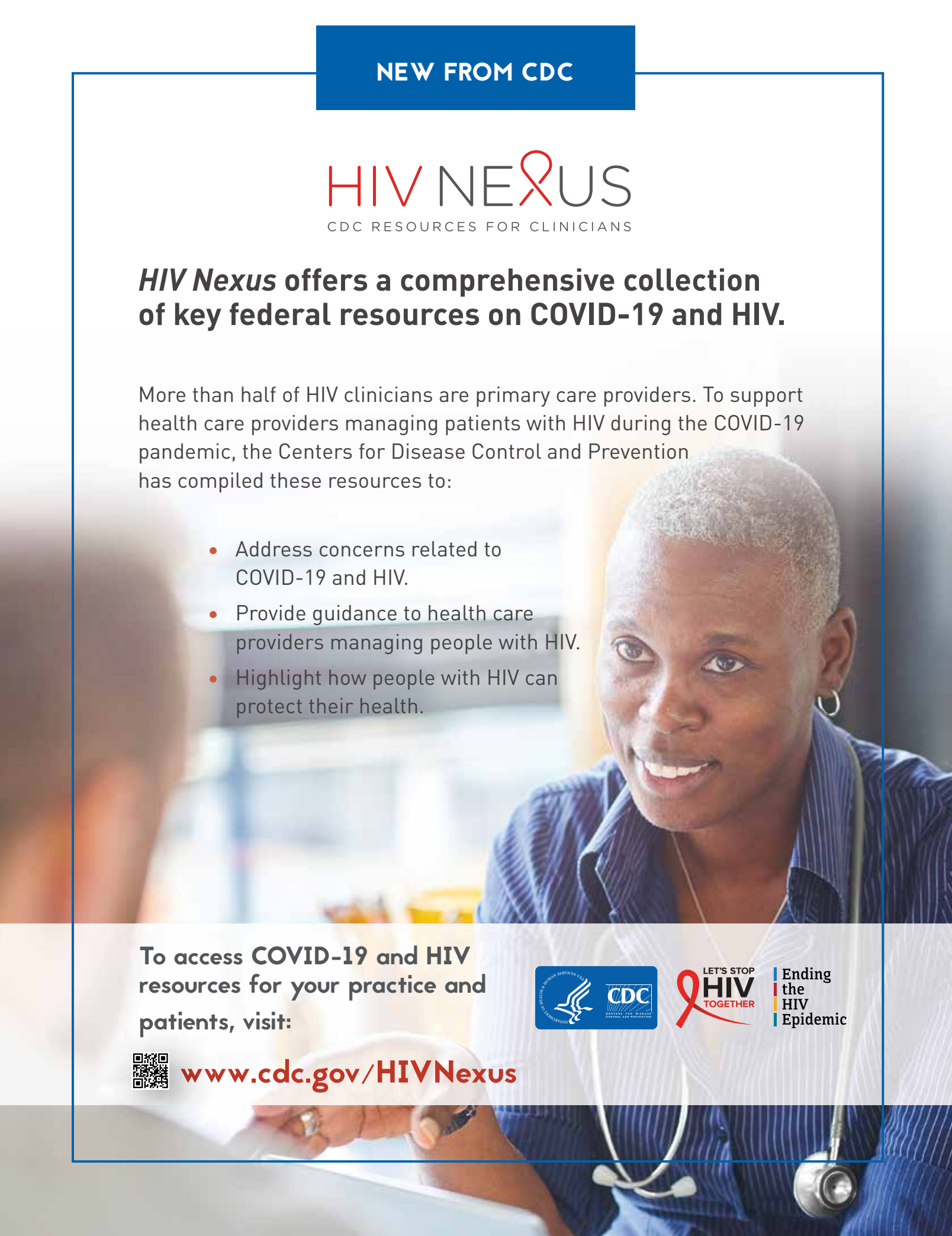
HIV NEXUS

CDC RESOURCES FOR CLINICIANS

HIV Nexus offers a comprehensive collection of key federal resources on COVID-19 and HIV.

More than half of HIV clinicians are primary care providers. To support health care providers managing patients with HIV during the COVID-19 pandemic, the Centers for Disease Control and Prevention has compiled these resources to:

- Address concerns related to COVID-19 and HIV.
- Provide guidance to health care providers managing people with HIV.
- Highlight how people with HIV can protect their health.



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ORIGINAL ARTICLE

Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19

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ABSTRACT

BACKGROUND

Hydroxychloroquine has been widely administered to patients with Covid-19 without robust evidence supporting its use.

METHODS

We examined the association between hydroxychloroquine use and intubation or death at a large medical center in New York City. Data were obtained regarding consecutive patients hospitalized with Covid-19, excluding those who were intubated, died, or discharged within 24 hours after presentation to the emergency department (study baseline). The primary end point was a composite of intubation or death in a time-to-event analysis. We compared outcomes in patients who received hydroxychloroquine with those in patients who did not, using a multivariable Cox model with inverse probability weighting according to the propensity score.

RESULTS

Of 1446 consecutive patients, 70 patients were intubated, died, or discharged within 24 hours after presentation and were excluded from the analysis. Of the remaining 1376 patients, during a median follow-up of 22.5 days, 811 (58.9%) received hydroxychloroquine (600 mg twice on day 1, then 400 mg daily for a median of 5 days); 45.8% of the patients were treated within 24 hours after presentation to the emergency department, and 85.9% within 48 hours. Hydroxychloroquine-treated patients were more severely ill at baseline than those who did not receive hydroxychloroquine (median ratio of partial pressure of arterial oxygen to the fraction of inspired oxygen, 223 vs. 360). Overall, 346 patients (25.1%) had a primary end-point event (180 patients were intubated, of whom 66 subsequently died, and 166 died without intubation). In the main analysis, there was no significant association between hydroxychloroquine use and intubation or death (hazard ratio, 1.04, 95% confidence interval, 0.82 to 1.32). Results were similar in multiple sensitivity analyses.

CONCLUSIONS

In this observational study involving patients with Covid-19 who had been admitted to the hospital, hydroxychloroquine administration was not associated with either a greatly lowered or an increased risk of the composite end point of intubation or death. Randomized, controlled trials of hydroxychloroquine in patients with Covid-19 are needed. (Funded by the National Institutes of Health.)

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The aminoquinolines chloroquine and hydroxychloroquine are widely used in the treatment of malaria and rheumatic diseases, and they have been suggested as effective treatments for coronavirus disease 2019 (Covid-19) on the grounds of both antiinflammatory and antiviral effects.[1-4] In the United States, the Food and Drug Administration issued an Emergency Use Authorization on March 30, 2020, that allowed the use of these drugs in patients with Covid-19 who were not enrolled in clinical trials. Guidelines suggested that these drugs be administered to hospitalized patients who had evidence of pneumonia,[5] and to date, they have been used in many thousands of patients with acute Covid-19 around the world. However, to date, there have been no robust clinical trials that have shown efficacy of these agents for this illness, and the data that are available come from small studies that have either been uncontrolled or underpowered to detect meaningful clinical effects.

The original report of hydroxychloroquine as a treatment for Covid-19 described 26 patients who had been treated in an open-label, single-group study that involved contemporaneous, but nonrandomized controls in hospitals in France.[6] Patients were treated with hydroxychloroquine at a dose of 200 mg three times daily for 10 days. Data from this study were reported as showing the effectiveness of hydroxychloroquine in reducing the viral burden in treated patients (65.0% clearance by day 5, vs. 18.8% clearance by day 5 in untreated patients). However, data from 6 patients who received hydroxychloroquine were excluded from the analysis because of clinical worsening or loss to follow-up, which makes it difficult to interpret the findings.

Recent work suggests that hydroxychloroquine has more potent antiviral properties than chloroquine, as well as a better safety profile.[7] In accordance with clinical guidelines developed at our medical center, hydroxychloroquine was suggested as treatment for hospitalized patients with Covid-19 and respiratory difficulty, as indicated by a low resting oxygen saturation, during the period in which patients in this report were admitted.

We examined the association between hydroxychloroquine use and respiratory failure at a large medical center providing care to a substantial number of patients with Covid-19 in New York City. We hypothesized that hydroxychloroquine use would be associated with a lower risk of a composite end point of intubation or death in analyses that were adjusted for major predictors of respiratory failure and weighted according to propensity scores assessing the probability of hydroxychloroquine use.

Methods

Setting

We conducted this study at New York–Presbyterian Hospital (NYP)–Columbia University Irving Medical Center (CUIMC), a quaternary, acute care hospital in northern Manhattan. We obtained samples from all admitted adults who had a positive test result for the virus SARS-CoV-2 from analysis of nasopharyngeal or oropharyngeal swab specimens obtained at any point during their hospitalization from March 7 to April 8, 2020. Follow-up continued through April 25, 2020. These tests were conducted by the New York State Department of Health until the NYP–CUIMC laboratory developed internal testing capability with a reverse-transcriptase–polymerase-chain-reaction assay on March 11, 2020. Patients who were intubated, who died, or who were transferred to another facility within 24 hours after presentation to the emergency department were excluded from the analysis. The institutional review board at CUIMC approved this analysis under an expedited review.

A guidance developed by the Department of Medicine and distributed to all the house staff and attending staff at our medical center suggested hydroxychloroquine as a therapeutic option for patients with Covid-19 who presented with moderate-to-severe respiratory illness, which was defined as a resting oxygen saturation of less than 94% while they were breathing ambient air. The suggested hydroxychloroquine regimen was a loading dose of 600 mg twice on day 1, followed by 400 mg daily for 4 additional days. Azithromycin at a dose of 500 mg on day 1 and then 250 mg daily for 4 more days in combination with hydroxychloroquine was an additional suggested therapeutic option. The azithromycin suggestion was removed on April

12, 2020, and the hydroxychloroquine suggestion was removed on April 29, 2020. The decision to prescribe either or both medications was left to the discretion of the treating team for each individual patient.

Patients receiving sarilumab were allowed to continue hydroxychloroquine. Patients receiving remdesivir as part of a randomized trial either did not receive or had completed a course of treatment with hydroxychloroquine.

DATA SOURCES

We obtained data from the NYP–CUIMC clinical data warehouse. This warehouse contains all the clinical data available on all inpatient and outpatient visits to one of the CUIMC facilities (see the Data Extraction section in the Supplementary Appendix, available with the full text of this article at NEJM.org). No data were manually abstracted from the electronic medical record or charts. The data obtained included patients' demographic details, insurance status, vital signs, laboratory test results, medication administration data, historical and current medication lists, historical and current diagnoses, clinical notes, historical discharge disposition for previous inpatient hospitalizations, and ventilator use data.

VARIABLES ASSESSED

From the clinical data warehouse, we obtained the following data elements for each patient: age; sex; patient-reported race and ethnic group; current insurance carrier; the first recorded vital signs on presentation; the ratio of the partial pressure of arterial oxygen to the fraction of inspired oxygen (Pao_2:Fio_2) at admission, estimated with the use of methods developed by Brown and colleagues[8,9] (see the Data Extraction section in the Supplementary Appendix); the first recorded body-mass index as calculated for measured height and weight (the body-mass index is the weight in kilograms divided by the square of the height in meters), grouped on the basis of the Centers for Disease Control and Prevention guidelines for adults; the first recorded inpatient laboratory tests; past and current diagnoses; patient-reported smoking status; and medication administration at baseline. Details of the variables assessed are provided in the Supplementary Appendix.

HYDROXYCHLOROQUINE EXPOSURE

Patients were defined as receiving hydroxychloroquine if they were receiving it at study baseline or received it during the follow-up period before intubation or death. Study baseline was defined as 24 hours after arrival at the emergency department.

END POINT

The primary end point was the time from study baseline to intubation or death. For patients who died after intubation, the timing of the primary end point was defined as the time of intubation.

STATISTICAL ANALYSIS

We calculated bivariate frequencies to examine the associations among the preadmission variables described above. Patients without a primary end-point event had their data censored on April 25, 2020.

Cox proportional-hazards regression models were used to estimate the association between hydroxychloroquine use and the composite end point of intubation or death. An initial multivariable Cox regression model included demographic factors, clinical factors, laboratory tests, and medications. In addition, to help account for the nonrandomized treatment administration of hydroxychloroquine, we used propensity-score methods to reduce the effects of confounding. The individual propensities for receipt of hydroxychloroquine treatment were estimated with the use of a multivariable logistic-regression model that included the same covariates as the Cox regression model. Associations between hydroxychloroquine use and respiratory failure were then estimated by multivariable Cox regression models with the use of three propensity-score methods.

The primary analysis used inverse probability weighting. In the inverse-probability-weighted analysis, the predicted probabilities from the propensity-score model were used to calculate the stabilized inverse-probability-weighting weight.[10] Kaplan–Meier curves and Cox models that used the inverse-probability-weighting weights were reported.

We conducted a secondary analysis that used propensity-score matching and another that included the propensity score as an additional covari-

ate. In the propensity-score matching analysis, the nearest-neighbor method was applied to create a matched control sample. Additional sensitivity analyses included the same set of analyses with the use of a different study baseline of 48 hours after arrival to the emergency department as well as analyses that defined the exposure as receipt of the first dose of hydroxychloroquine before study baseline only. Multiple imputation was used to handle missing data, and model estimates and standard errors were calculated with Rubin's rules.[11] The nonparametric bootstrap method was used to obtain 95% pointwise confidence intervals for the inverse-probability-weighted Kaplan–Meier curves. The statistical analyses were performed with the use of R software, version 3.6.1 (R Project for Statistical Computing).

RESULTS

CHARACTERISTICS OF THE COHORT

Of 1446 consecutive patients with Covid-19 who were admitted to the hospital between March 7 and April 8, 2020, a total of 70 patients were excluded from this study because they had already had intubation or death, were discharged after inpatient admission, or were directly admitted to alternative facilities within 24 hours after presentation to the emergency department. Thus, 1376 patients were included in the analysis (Fig. 1).

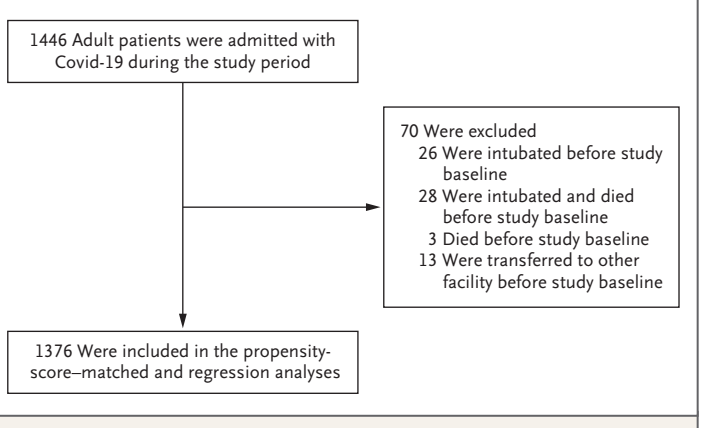

Figure 1. Study Cohort.
Study baseline was defined as 24 hours after arrival at the emergency department. Covid-19 denotes coronavirus disease 2019.

Over a median follow-up of 22.5 days, 346 patients (25.1%) had a primary end-point event (166 patients died without being intubated, and 180 were intubated). At the time of data cutoff on April 25, a total of 232 patients had died (66 after intubation), 1025 had survived to hospital discharge, and 119 were still hospitalized (only 24 of whom were not intubated) (Table S1 in the Supplementary Appendix).

Of the 1376 patients, 811 (58.9%) received hydroxychloroquine (median duration of treatment, 5 days) and 565 (41.1%) did not. Among the patients who received hydroxychloroquine, 45.8% received it in the 24 hours between their presentation to the emergency department and the start of study follow-up, and 85.9% received it within 48 hours after presentation to the emergency department. The timing of the first dose of hydroxychloroquine after presentation to the medical center is shown in Figure S3. The distribution of the patients' baseline characteristics according to hydroxychloroquine exposure is shown in Table 1, both in the unmatched and propensity-score–matched analytic samples. In the unmatched sample, hydroxychloroquine exposure differed according to age group, sex, race and ethnic group, body-mass index, insurance, smoking status, and current use of other medications. Hydroxychloroquine-treated patients had a lower Pao_2:Fio_2 at baseline than did patients who did not receive hydroxychloroquine (median, 233 vs. 360 mm Hg). In addition to the 27 patients listed in Table 1 who received remdesivir according to compassionate use, 30 patients in the study cohort were enrolled in randomized, blinded, placebo-controlled trials of that investigational agent or of sarilumab.

The distribution of the estimated propensity scores for receipt of hydroxychloroquine among patients who did and did not receive hydroxychloroquine is shown in Figure S1. The odds ratios (with 95% confidence intervals) for receipt of hydroxychloroquine according to all the variables included in the propensity-score model are shown in Table S2. The C-statistic of the propensity-score model was 0.81. In the matched analytic sample, 811 patients were exposed to hydroxychloroquine and 274 were not exposed. The differences between hydroxychloroquine and pre-

treatment variables were attenuated in the propensity-score–matched samples as compared with the unmatched samples (Table 2 and Fig. S2).

STUDY END POINTS

Among the 1376 patients included in the analysis, the primary end point of respiratory failure developed in 346 patients (25.1%); a total of 180 patients were intubated, and 166 died without intubation. In the crude, unadjusted analysis, patients who had received hydroxychloroquine were more likely to have had a primary endpoint event than were patients who did not (hazard ratio, 2.37; 95% CI, 1.84 to 3.02) (Table 2). In the primary multivariable analysis with inverse probability weighting according to the propensity score, there was no significant association between hydroxychloroquine use and the composite primary end point (hazard ratio, 1.04; 95% CI, 0.82 to 1.32) (Fig. 2). There was also no significant association between treatment with azithromycin and the composite end point (hazard ratio, 1.03; 95% CI, 0.81 to 1.31).

Additional multivariable propensity-score analyses yielded similar results (Table 2). Multiple additional sensitivity analyses, including analyses that used a different baseline at 48 hours after presentation and analyses with treatment defined as receipt of the first dose of hydroxychloroquine before study baseline, showed similar results (Table S3).

DISCUSSION

In this analysis involving a large sample of consecutive patients who had been hospitalized with Covid-19, the risk of intubation or death was not significantly higher or lower among patients who received hydroxychloroquine than among those who did not (hazard ratio, 1.04; 95% CI, 0.82 to 1.32). Given the observational design and the relatively wide confidence interval, the study should not be taken to rule out either benefit or harm of hydroxychloroquine treatment. However, our findings do not support the use of hydroxychloroquine at present, outside randomized clinical trials testing its efficacy.

As we noted in the introduction, the findings from an early study showing a benefit of hydroxychloroquine in 26 patients who had been treated in French hospitals are difficult to interpret, given the small size of that study, the lack of a randomized control group, and the omission of 6 patients from the analysis.[6] A clinical trial testing two doses of chloroquine in patients with Covid-19 planned to include 440 patients but was halted after 81 patients had been enrolled because of excessive QTc prolongation and an indication of higher mortality in the high-dose group (in which patients received 600 mg twice daily for 10 days) than in the low-dose group (in which patients received 450 mg daily for 4 days after an initial dose of 450 mg administered twice on the first day).[12]

Two small, randomized trials from China have been reported. Physicians in Wuhan randomly assigned 62 patients with mild illness to either the control group (in which patients could receive supplemental oxygen, unspecified antiviral agents, antibiotic agents, and immune globulin, with or without glucocorticoids) or the experimental group (in which patients also received 400 mg of hydroxychloroquine daily). This report has not yet been fully peer-reviewed, but results were posted to the MedRxiv website for public comment.[13] Investigators reported a faster mean time to clinical recovery (resolution of fever and cough and improvement on chest radiography) in the experimental group than in the control group. Four patients (all in the control group) had progression to severe infection. A small, randomized trial involving 30 patients in Shanghai reported on outcomes in patients treated with 400 mg of hydroxychloroquine daily for 5 days, as compared with a control group in which patients received "conventional treatment only."[14] This trial showed that by day 7, a total of 86% of the patients in the hydroxychloroquine-treated group and 93% of those in the control group had negative results on viral throat swabs. All the patients in this trial also received aerosolized interferon alfa by nebulizer.

A randomized clinical trial is the best approach to determine whether benefit can be ascribed to any given therapeutic intervention because this trial design minimizes the two major problems inherent in observational studies: unmeasured confounding and bias. With the analytic approaches we used in this examination of

Table 1. Characteristics of Patients Receiving or Not Receiving Hydroxychloroquine, before and after Propensity-Score Matching.*

Characteristic	Unmatched Patients		Propensity-Score–Matched Patients†	
	Hydroxychloroquine (N=811)	No Hydroxychloroquine (N=565)	Hydroxychloroquine (N=811)	No Hydroxychloroquine (N=274)
Age — no. (%)				
<40 yr	80 (9.9)	105 (18.6)	80 (9.9)	28 (10.2)
40–59 yr	217 (26.8)	142 (25.1)	217 (26.8)	69 (25.2)
60–79 yr	367 (45.3)	220 (38.9)	367 (45.3)	118 (43.1)
≥80 yr	147 (18.1)	98 (17.3)	147 (18.1)	59 (21.5)
Female sex — no. (%)	337 (41.6)	258 (45.7)	337 (41.6)	113 (41.2)
Race and ethnic group — no. (%)‡				
Non-Hispanic white	74 (9.1)	57 (10.1)	97 (12.0)	36 (13.1)
Non-Hispanic black	89 (11.0)	92 (16.3)	120 (14.8)	40 (14.6)
Hispanic	412 (50.8)	286 (50.6)	530 (65.4)	172 (62.8)
Other	48 (5.9)	36 (6.4)	64 (7.9)	26 (9.5)
Missing data	188 (23.2)	94 (16.6)	0	0
Body-mass index — no. (%)§				
<18.5	13 (1.6)	13 (2.3)	18 (2.2)	7 (2.6)
18.5–24.9	147 (18.1)	98 (17.3)	184 (22.7)	53 (19.3)
25.0–29.9	224 (27.6)	157 (27.8)	279 (34.4)	96 (35.0)
30.0–39.9	218 (26.9)	133 (23.5)	268 (33.0)	99 (36.1)
≥40.0	52 (6.4)	20 (3.5)	62 (7.6)	19 (6.9)
Missing data	157 (19.4)	144 (25.5)	0	0
Insurance — no. (%)				
Medicaid	165 (20.3)	146 (25.8)	166 (20.5)	54 (19.7)
Medicare	396 (48.8)	261 (46.2)	399 (49.2)	141 (51.5)
No insurance	79 (9.7)	49 (8.7)	79 (9.7)	29 (10.6)
Commercial insurance	166 (20.5)	106 (18.8)	167 (20.6)	50 (18.2)
Missing data	5 (0.6)	3 (0.5)	0	0
Current smoking — no. (%)	89 (11.0)	68 (12.0)	89 (11.0)	32 (11.7)
Past diagnoses — no. (%)				
Chronic lung disease¶	146 (18.0)	105 (18.6)	146 (18.0)	49 (17.9)
Diabetes	301 (37.1)	190 (33.6)	301 (37.1)	94 (34.3)
Hypertension	398 (49.1)	38 (6.7)	398 (49.1)	146 (53.3)
Cancer	109 (13.4)	67 (11.9)	109 (13.4)	35 (12.8)
Chronic kidney disease	133 (16.4)	105 (18.6)	133 (16.4)	61 (22.3)
Transplantation, HIV infection, or immune-suppressive medications	40 (4.9)	18 (3.2)	40 (4.9)	11 (4.0)
Medications at baseline — no. (%)				
Statin	308 (38)	197 (34.9)	308 (38)	107 (39.1)
ACE inhibitor or ARB	236 (29.1)	142 (25.1)	236 (29.1)	85 (31.0)
Systemic glucocorticoid	216 (26.6)	57 (10.1)	216 (26.6)	42 (15.3)
Direct oral anticoagulant or warfarin	76 (9.4)	47 (8.3)	76 (9.4)	24 (8.8)
Azithromycin	486 (59.9)	127 (22.5)	486 (59.9)	102 (37.2)
Other antibiotic agent	604 (74.5)	305 (54.0)	604 (74.5)	183 (66.8)
Tocilizumab	58 (7.2)	12 (2.1)	58 (7.2)	9 (3.3)
Remdesivir	22 (2.7)	5 (0.9)	22 (2.7)	5 (1.8)
Initial vital signs — median (IQR)				
Systolic blood pressure — mm Hg	125 (111–139)	127 (111–144)	125 (111–139)	126 (110–138)

Table 1. (Continued.)

Characteristic	Unmatched Patients		Propensity-Score–Matched Patients†	
	Hydroxychloroquine (N=811)	No Hydroxychloroquine (N=565)	Hydroxychloroquine (N=811)	No Hydroxychloroquine (N=274)
Diastolic blood pressure — mm Hg	75 (67–82)	76 (68–84)	75 (67–82)	74 (65–83)
Heart rate — beats/min	98 (86–111)	97 (83–109)	98 (86–111)	97 (84–108)
Oxygen saturation — %	94 (90–96)	96 (94–98)	94 (90–96)	94.5 (92–96)
Respiratory rate — breaths/min	20 (18–22)	18 (18–20)	20 (18–22)	19.5 (18–22)
Calculated Pao_2:FIO_2	223 (160–303)	360 (248–431)	223 (160–303)	273 (185–360)
Initial laboratory tests — median (IQR)‖				
D-Dimer — μg/ml	1.25 (0.76–2.28)	1.1 (0.59–2.35)	1.26 (0.76–2.29)	1.33 (0.66–2.45)
Ferritin — ng/ml	785 (420–1377)	481 (213–989)	777 (417–1370)	552 (283–1095)
Lactate dehydrogenase — U/liter	414 (322–546)	333 (246–448)	412 (321–544)	370 (273–515)
C-reactive protein — mg/liter	125 (75–199)	76 (20–150)	125 (74–199)	106 (48–183)
Procalcitonin — ng/ml	0.21 (0.11–0.53)	0.14 (0.09–0.39)	0.21 (0.11–0.53)	0.18 (0.10–0.45)
Neutrophil count per mm^3	5.06 (3.64–7.26)	4.53 (2.72–6.81)	5.05 (3.63–7.26)	4.95 (3.20–7.30)
Lymphocyte count per mm_3	0.94 (0.65–1.28)	1.02 (0.64–1.47)	0.95 (0.66–1.30)	0.98 (0.68–1.37)

* ACE denotes angiotensin-converting enzyme, ARB angiotensin-receptor blocker, FIO_2 fraction of inspired oxygen, HIV human immunodeficiency virus, IQR interquartile range, and Pao_2 partial pressure of arterial oxygen.
† Data for patients included in the propensity-score–matched analysis were multiply imputed.
‡ Data on race and ethnic group, as reported by the patient, were obtained from the clinical data warehouse.
§ The body-mass index is the weight in kilograms divided by the square of the height in meters.
¶ Chronic lung disease was defined as chronic obstructive pulmonary disease, asthma, or chronic bronchitis.
‖ In the unmatched analysis, data on the D-dimer level were missing for 291 patients, on the ferritin level for 168, on the lactate dehydrogenase level for 153, on the C-reactive protein level for 150, on the procalcitonin level for 121, on the neutrophil count for 33, and on the lymphocyte count for 33. Multiple imputation was used to account for missing data in the propensity-score–matched analysis.

our observational cohort, we have tried to minimize possible confounding in a variety of ways.

In the main analysis, a multivariable regression model with inverse probability weighting according to the propensity score, there was no significant association between hydroxychloroquine use and the risk of intubation or death. We also performed a series of analyses using several propensity-score approaches. Findings were similar in multiple sensitivity analyses. The consistency of the results across these analyses is reassuring. In our analysis, we adjusted for likely confounders, including age, race and ethnic group, body-mass index, diabetes, underlying kidney disease, chronic lung disease, hypertension, baseline vital signs, Pao_2:FIO_2, and inflammatory markers of the severity of illness. Despite this extensive adjustment, it is still possible that some amount of unmeasured confounding remains. Additional limitations of our study include missing data for some variables and potential for inaccuracies in the electronic health records, such as lack of documentation of smoking and coexisting illness for some pa-

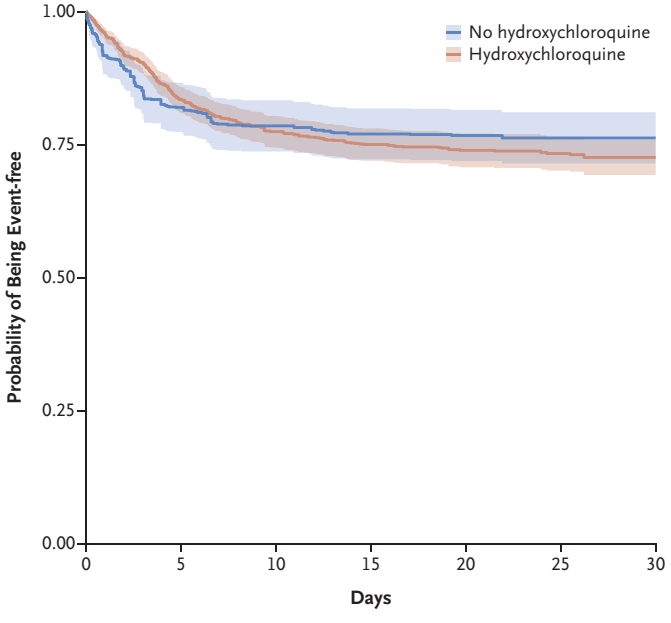

Figure 2. Freedom from Composite End Point of Intubation or Death.
The shaded areas represent pointwise 95% confidence intervals.

Table 2. Associations between Hydroxychloroquine Use and the Composite End Point of Intubation or Death in the Crude Analysis, Multivariable Analysis, and Propensity-Score Analyses.

Analysis	Intubation or Death
No. of events/no. of patients at risk (%)	
Hydroxychloroquine	262/811 (32.3)
No hydroxychloroquine	84/565 (14.9)
Crude analysis — hazard ratio (95% CI)	2.37 (1.84–3.02)
Multivariable analysis — hazard ratio (95% CI)*	1.00 (0.76–1.32)
Propensity-score analyses — hazard ratio (95% CI)	
With inverse probability weighting†	1.04 (0.82–1.32)
With matching‡	0.98 (0.73–1.31)
Adjusted for propensity score§	0.97 (0.74–1.28)

* Shown is the hazard ratio from the multivariable Cox proportional-hazards model, with stratification according to sex, chronic lung disease, and body-mass index, and with additional adjustment for age, race and ethnic group, insurance, current smoking, past diagnoses, current medications, vital statistics, and laboratory tests on presentation. The analysis included all 1376 patients.

† Shown is the primary analysis with a hazard ratio from the multivariable Cox proportional-hazards model with the same strata and covariates with inverse probability weighting according to the propensity score. The analysis included all the patients.

‡ Shown is the hazard ratio from a multivariable Cox proportional-hazards model with the same strata and covariates with matching according to the propensity score. The analysis included 1085 patients (811 who received hydroxychloroquine and 274 who did not).

§ Shown is the hazard ratio from a multivariable Cox proportional-hazards model with the same strata and covariates, with additional adjustment for the propensity score. The analysis included all the patients.

tients. Nonetheless, we used contemporary methods to deal with missing data to minimize bias. Finally, the single-center design may limit the generalizability of these results.

Clinical guidance at our medical center has been updated to remove the suggestion that patients with Covid-19 be treated with hydroxychloroquine. In our analysis involving a large sample of consecutive patients who had been hospitalized with Covid-19, hydroxychloroquine use was not associated with a significantly higher or lower risk of intubation or death (hazard ratio, 1.04; 95% CI, 0.82 to 1.32). The study results should not be taken to rule out either benefit or harm of hydroxychloroquine treatment, given the observational design and the 95% confidence interval, but the results do not support the use of hydroxychloroquine at present, outside randomized clinical trials testing its efficacy.

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