M E M O R A N D U M

DATE: May 7 2013

TO: Interested parties

FROM: Tom Waddell Health Center transgender team

We are happy to give you the most recent revision of our protocols. We are currently working under these protocols and have found them useful. Please review them. We would greatly appreciate your feedback as they are under regular review and revision. Please pass on this memo and protocols to others who are interested, and feel free to contact us if you have questions or comments.

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We would like to acknowledge the support of the Tom Waddell Health Center Administrative Team and Community Advisory Board, the San Francisco Department of Public Health, our collaborators in the community, and our patients.

For more information, please feel free to contact us at the Transgender Team information number: (415) 355-7588.

Tom Waddell Health Center
Protocols for Hormonal Reassignment of Gender

Revised 05/0713

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Introduction

Patients presenting to medical care with gender identity issues may require hormonal treatment to effect physical and physiological changes to make their bodies more congruent with their self-image. Standards for who is appropriate for treatment are outside of the scope of this document. In the last decade, the stringent (and for many, impossible) criteria that dominated the access to hormonal therapy has evolved to less rigid standards to reflect the social and economic realities of transgender individuals. The approach at TWHC has been to attempt to find a balance to address patients' health needs by providing excellent health care informed by harm reduction principles.

The purpose for writing these protocols is to share our experience with health providers and their patients on the best practices for prescribing hormones for patients with gender identity issues. These guidelines are based on the available evidence and our experience in treating over 1200 patients over the past 19 years. Unfortunately, studies of hormonal reassignment of gender have been few, and there is significant uncertainty in medical practice. It is therefore of utmost importance that we inform our patients of the risks and benefits of treatment, and of the aspects of treatment in which uncertainty exists.

Background

Tom Waddell Health Center (TWHC) is a large community health center and health care for the homeless program operated by the San Francisco Department of Public Health (SFDPH). The mission of TWHC is to provide comprehensive health care for homeless people and other severely underserved individuals in our community. TWHC and the SFDPH operate under a harm reduction philosophy of care. Our aim is to optimize our patients' health and functioning and assist them in reducing harm in their lives. Health care is delivered using a comprehensive interdisciplinary team.

In November of 1993 TWHC established Transgender Tuesdays. The San Francisco Health Department acted in response to a combination of eagerness on the part of Tom Waddell Health Center and the concurrent urging of several allied community organizations (including the Tenderloin AIDS Resource Center, Brothers' Network, Asian AIDS Project—now API Wellness Center, Proyecto Contra-Sida Por Vida, FTM International) and individual community transgender activists.

The rationale that led to the creation of a clinic specifically for the transgender person: There exists a large group of individuals self-identified as transgender who are at high risk for HIV transmission, are homeless or nearly homeless, and who are also in need of general primary care services. This group has historically been averse to accessing medical services for a number of reasons, including: prior negative experience in clinic settings, expectation of discriminatory treatment, the requirement of psychiatric treatment and, in some cases, reticence to reveal illegal occupational activities or undocumented immigration status.

Yet many in this group actively pursued hormones on a regular basis. A number obtained them on the street (often illegally imported) or from a few unscrupulous medical providers who administered drugs but did not monitor their patients' health or provide preventive services or treatment for other serious health conditions. Invasive procedures such as silicone-like injections

were available underground, in many cases creating severe local tissue damage.

Transgender Tuesdays, our primary care transgender clinic, takes place on a weekday evening so as to be accessible to commercial sex workers and others in our inner-city Tenderloin location. Staffing includes registered nurses, nurse practitioners, physicians, eligibility workers, social workers, medical assistants, and volunteers. Our target population is underserved, self-defined transgender people (residents of San Francisco). We do not require patients to present documentation attesting to their transgender status. All prospective patients meet first with our nurse team leader who assesses health needs, identifies high-risk patients (e.g. those with immediate illness or homelessness) and orients and educates patients about how the clinic works. San Francisco residents are seen regardless of income and are placed on a low fee or free sliding scale if they meet poverty guidelines. Patients with private insurance or uninsured people from out of county may be directed to other sources of medical care. Preliminary blood tests are done as part of a standard intake and two follow up visits are scheduled—a psychosocial intake interview with a social worker and an initial medical provider visit.

We clarify that we are not a surgery clinic, nor do we provide comprehensive behavioral health care, and that hormones will not be prescribed on a first visit. Rather, that we are a Primary Care clinic, available for all general medical needs. We discourage outside hormone or "silicone" purchase or use, but do not turn patients away due to such use.

Prescribing hormones is at the discretion of the medical provider and is based on medical history, physical exam, lab test results and review of nursing and psycho-social assessments. A patient's ability to give informed consent is required prior to starting treatment. At times if there is a question of a patient's ability to give informed consent further evaluation may be necessary. Willingness to enter into comprehensive primary health care and keeping appointments is also required.

In addition to regular visits with a Primary Care provider, clients may take advantage of on-site auxiliary services including: urgent care, acupuncture, massage therapy, the transgender library and an ongoing peer support group with supervision by our social worker. At times, researchers are on-site providing an opportunity for patients to participate in research studies. The expertise and cultural competency gained in our Tuesday evening clinic has expanded to all aspects of our health center. Professional and support staff report a high level of comfort working with transgender patients and patients report high satisfaction with services.

Our Practice After Nineteen Years

In the early 1990s we knew of no other public-funded transgender care clinic. This has thankfully changed. In the 19 years since its inception, our transgender clinic has seen nearly 1200 patients, with over 400 currently active. Of these, 80% are male-to-female; nearly 20% are female-to-male.

Originally targeted to the MTF homeless transgender population, our clinic also attracts transgender people from different socioeconomic backgrounds. Most patients, although originally attracted primarily to the hormone prescription, discover early the importance of having a place where their medical needs are a priority and the staff is sensitive to their gender status.

The clinic is providing a main essential service: we attempt to decrease HIV transmission and its health consequences by increasing the access to care.
The doctors who prescribed hormones in our community without monitoring are no longer here, having retired or lost their market. Unfortunately, silicone injections in the underground still occur; the providers of the service travel through different cities, where there is always a demand. *(See p. 31)*
As transgender issues have become better known across the nation—though not yet seen as mainstream—Primary Care increasingly comes to include gender issues. Our team meets and collaborates with a number of other public and non-profit local clinics as well as private practice providers, who now provide hormonal reassignment of gender therapy and communicate with similar agencies nationally. Based on our experience, we feel that any medical practice offering Primary Care can provide these basic services to reach this underserved and still somewhat hidden community.

While media attention is increasingly focused on visible transgendered members of various communities, the amount of social support, legal resources, medical research and, most seriously, legitimate employment opportunities, remain severely limited

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Transgender Health: Primary Care Treatment Principles

Understanding Patients' Perspectives

The term "transgender" is not a pathological one, but one of self-identification, describing a number of identities that do not conform to the anatomical gender of birth. The term gender dysphoria refers to individuals who live with a high degree of distress/disconnection toward their gender image and can be diagnosed within the realm of gender identity disorders. Of note, the fact that there exists a psychiatric diagnosis of gender identity disorder / gender dysphoria is a contentious issue within the professional and transgender community.
Patients request hormone therapy in order to:

- Reaffirm their individual sense of gender (gender identity), and
- Develop physical characteristics that enable the demonstration of that identity (gender expression) to the world at large.

For each patient, the decision to come to our TG clinic is a major and possibly life-changing event.

- Many patients have done research about the therapies or already know other transgender persons using hormones. Most are definitive in their decision and have thought about it for years. Usually they are very specific in what they want or need from therapy.
- Many present with the desire of a full transition, hoping for maximum doses of hormonal treatment as fast as possible.
- Others want to proceed slowly in order to have more control of the effects.
- Some MTF (male to female) want to maintain erections, while others want to eliminate them.
- Some people want to express an androgynous or gender queer identity; others' goals are to develop a strong male or female identity.
- Some patients have access and choose from different surgical interventions.
- Some patients want surgery but don't have the access.
- Some patients don't want surgery.

Exploring needs or desires helps medical providers to individualize treatment and identify the patient's perceptions of the possibilities and limitations of treatment. Patients often have unrealistic expectations; education about what to expect from treatment is imperative in the first visits.

Each patient needs to understand the effects and the potential risk of therapy and must be able to make informed decisions.

Health Care Providers' Perspectives

Overall, the clinicians desire optimal health and good quality of life for their patients. Like other marginalized groups, transgender patients may present with history of trauma, with histories of negative experiences with institutions, and with multiple vulnerabilities.
With a non-judgmental approach, the medical provider works with a patient in order to achieve the following desired outcomes:

- Increased trust and ability to overcome previous negative experiences in medical systems.
- Adherence to advice regarding lab tests, office visits etc.

- Discussion of harm reduction regarding substance use, sexual practices, occupational sex work and destructive unhealthy relationships.
- HIV testing and access to treatment.
- Patient benefits from supportive comprehensive primary care.
- Linkage between the patient and social, medical, psychological and educational opportunities of mainstream society.

Initial Visits

Initial visits include:

- All prospective patients meet first with a nurse or social worker who assesses health needs, identifies high risk patients (e.g. those with immediate illness, psychiatric crisis, homelessness) and orients and educates patients about how the clinic works.
- Psychosocial intake. We discuss psychological issues and the psychosocial intake in the psychosocial section of these protocols.
- Baseline labs: CBC with differential, liver panel, renal panel, glucose, hepatitis A antibody, hepatitis B total core antibody, hepatitis B surface antibody and antigen, hepatitis C antibody, VDRL, lipid profile, prolactin level (for MTF), HIV antibody, quantiferon (TB blood test), additional labs may be ordered for specific health problems identified at the initial visit.
- Review health maintenance needs according to standard criteria
- Address medical problems as needed
- Discuss patient's goals and expectations for therapy
- Review side effects, risks and benefits of hormone therapy and obtain informed consent
- Prescribe medications and follow patients per protocols

Follow-Up Visits

- In our population we see patients on average quarterly. Visit intervals are individualized to patient need. At every visit:
- Assess for desired and adverse effects of medication
- Check weight, blood pressure
- Directed physical exam as needed
- Review health care maintenance including: immunizations, TB screening, safety and safer sex counseling. Every 3-6 mos.
- STD screening for sexually active patients every 3-6 mo.,
    - including HIV AB, VDRL,

    - pharyngeal, urethral and rectal GC and Chlamydia for MTF pharyngeal,
    - rectal and vaginal GC and Chlamydia screening for FTM
- See also the lab monitoring guidelines for specific hormonal therapies.

Consent

In addition to our standard consent for treatment a specific consent is required if a patient is to be prescribed medications for reassignment of gender. The use of medications for gender reassignment is off-label. There are potentially life-threatening complications. The medical provider should obtain and document consent by the patient indicating agreement to and understanding of treatment. . The medical provider may decrease or hold therapy when she/he decides that the risk exceeds the benefits

HIV Disease

After the initiation of our clinic in 1994, multiple epidemiological studies had been published reaffirming the high prevalence of the disease in the MTF transgender population in different geographical areas around the globe. HIV is not a contraindication or precaution for any of our protocols. While drug-drug interactions may occur, we know of no specific dangerous interactions. Treatment with hormones is frequently an incentive for patients to address their HIV disease. As providers of care for transgender people we have enhanced our HIV expertise and educated our HIV team and other HIV providers in our community on Transgender issues. Every visit should be an opportunity to assess for risks and review with the patient prevention strategies.

Treatment Modalities for Gender Transitioning

Hormones such as estrogen, progesterone and testosterone are steroids produced by the following endocrine glands: ovaries, testes and adrenals, under the direction of the hypothalamus/pituitary system in the brain. During pubescence these increasing hormone levels circulate in the bloodstream and attach to receptor sites on target cells of tissue/organs. All three of these sex hormones are present in men and women in varying level. If target cells are activated by these increased hormone levels secondary sexual characteristics are expressed such as beard growth and breast development. Tissue that is not activated remains latent. The basis of transgender hormone therapy is the manipulation of these hormones to create the desired body effect by activating target cells of latent yet responsive tissue/organs resulting in feminization or masculinization of the individual. In addition to the female hormones estrogen and progesterone (which in very high doses possess anti-androgen [anti-testosterone effect]), anti-androgen therapy is often added to the feminizing medical regimen to reduce the need/risks of such high doses of female hormone. Anti-androgen therapy will decrease testosterone to normal or lower than normal female levels. Testosterone is the agent for masculinizing hormonal transition.
More is not necessarily better and may lead to complications. Most of our patients reach maximum possible feminization or masculinization without recourse to maximum doses of medications.

Feminizing Hormonal Therapy

May include either one or combination of anti-androgen and female hormonal therapy.

Antiandrogen Therapy:

- antiandrogen drugs,
- GnRN (gonadotropin-releasing hormone) agonists,
- bilateral orchiectomy.

Antiandrogen Drugs

	Dose	Adverse Effects	Contraindications	Interactions	Notes
Spironolactone	Starting: 25-50mg BID Typical: 50mg BID Max: 200mg BID	Mild diuretic Hyperkalemia Excretion of Na, Ca, Cl	Renal insuff K > 5.5	Digoxin ACEi ARB K-sparing diuretics	Baseline labs: Lytes, BUN, SCr Follow up labs 2 mo. after starting dose or increasing dose, every 6mo when stable: Lytes, BUN, SCr Testosterone level not routinely checked, but may be appropriate if not showing expected demasculinization Avoid after orchiectomy
Finasteride	Low: 1mg daily High: 5-10mg daily				Prescribe if pt. unable to take spironolactone Can use in combo w spironolactone for rare patients not achieving gender-related effects May be appropriate after orchiectomy if continued hirsutism, male pattern baldness progression.
GnRH Agonists • Nafarelin • Goserelin • Leunrorelin	See reference for dosing (Hembree et al., 2009)				Fully reversible in adolescents No thromboembolic risk

Spironolactone

Spironolactone is our treatment of choice due to safety and availability.

Dosing

- Typical spironolactone starting dose: 25mg-50mg twice a day
- Typical spironolactone dose: 50mg twice a day
- Maximum dose spironolactone: 200mg twice a day

Gender-Related Effects

- Suppression of testosterone production/activity
- Decreased facial and body hair growth
- Decreased progression of male pattern baldness
- Decreased libido
- Decreased erections
- Mild breast growth
- Decreased BPH

Contraindications

- Renal insufficiency
- Serum potassium greater than 5.5 meq/L

Adverse Effects

Adverse effects have been very rare in our experience.

- Mild diuretic
- Hyperkalemia
- Increased excretion of sodium, calcium, chloride
- Impotence/decreased libido

Drug Interactions

Avoid using concomitantly with digoxin, ACE inhibitors, potassium-sparing diuretics, AT II receptor antagonists.

Monitoring Labs

Baseline: Electrolytes, BUN, and creatinine
Follow up: 2 months after starting or increasing dose, and every 6 months after establishing stable dose. Testosterone level Optional 6 mo. after starting if not showing expected demasculinization

Finasteride
Finasteride is an agent which inhibits the intracellular enzyme responsible for converting testosterone to its potent form DHT (5 alpha-dihydrotestosterone). It may be used alone or in combination with spironolactone. In larger doses (Proscar 5-10 mg) we use this drug as a second line therapy for patients intolerant to spironolactone. In smaller doses (Propecia 1mg), finasteride is used for improving male pattern baldness.
Finasteride is used to treat BPH by causing the prostate to reduce in size, and because of this it can reduce PSA levels by 50% even if there is underlying prostate cancer. It is therefore very important to monitor with biopsy and/or not use this agent if underlying cancer is suspected.

Other Agents
Other anti-androgen drugs include cyproterone acetate (Androcur) and flutamide. Cyproterone is widely used in Europe but is not available in the United States. Flutamide appears to have more toxicity and is useful only in selected clinical situations.

GnRN Agonists
GnRN agonists include nafarelin acetate, goserelin acetate, and leunrorelin acetate. These agents reduce gonadal androgen production by desensitizing the pituitary with GnRN. The principal advantage with these agents is that they are generally fully reversible in their effect in adolescents (making them useful where there is desire to stall changes of puberty), and they do not carry risk of thromboembolic disease.

Bilateral Orchiectomy
Bilateral orchiectomy might be beneficial for those intolerant of other anti-androgen therapy. Advantages include a much-reduced need for anti-androgen therapy since approximately 90% of testosterone comes from testicular source. Disadvantages include: irreversibility and potential scarring of scrotal tissue, which could pose problems for the SRS surgeon since scrotal tissue is used to create labia and give depth to the neovagina.
There are differences of opinion whether anti-androgen drugs (including spironolactone and other above agents) should be used after bilateral orchiectomy and/or male to female SRS. Adrenal androgens, about 10% of total testosterone, left postop may be needed for normal body function. After orchiectomy or SRS, usually a maintenance dose of estrogen is needed for maintenance of feminization and, in particular, to prevent osteoporosis.

Estrogen Therapy
Estrogens are the primary hormones used for feminization. Adverse effects from estrogen therapy including increased risk of death are well-documented, and patients should be fully informed of possible risk. Nevertheless, these drugs are extremely useful and have been used with relative safety. Despite our high-risk population, we have rarely seen severe adverse effects. Numerous classes of estrogens have been used for gender reassignment. There is a thriving illicit market for these drugs and many patients have been taking them on the streets without medical monitoring. Patients frequently take estrogens from several classes and have a misconception that "more is better." Education is essential to avoid adverse outcomes and optimize effect.
Common prescribed estrogens we use for reassignment of gender include:

- estradiol valerate tablets (Estradiol)

- estrogen transdermal (Estroderm, Climara, Alora, Vivelle)
- estradiol valerate injection (Delestrogen)
- conjugated equine estrogens (Premarin)

General Concepts when Prescribing Estrogens

- All estrogens increase the risk of thromboembolism and prolactinoma. These risks are dependent on the form of estrogen and are dose-dependent, controlling for other risk factors.
- All estrogens work on the same receptors and should have similar effects at equipotent doses. Nevertheless, there are patient-specific variations and preferences in response to dose and type of estrogen.
- Non-oral forms, including sublingual, transdermal and injectable, have the advantage of avoiding first pass through liver metabolism and may be the preferred form for all especially patients who are older, have underlying liver disease or have elevated lipids.
- Oral preparations have the advantage of being easy to titrate or stop in case of adverse effects; injectable forms may stay present in the body for four weeks or longer.
- Ethinyl estradiol is no longer considered a safe medication for feminizing hormone therapy
- Response to treatment is extremely variable. Younger age and less body hair are predictable factors of a more satisfactory outcome.
- Estrogen doses can be reduced to a lower dose after Gender Reassignment Surgery (GRS) or after maximum feminization is evident, which is usually after two years of high-dose treatment.
- Stop all estrogens two weeks (4 weeks for estradiol valerate injection) prior to any major surgery or other immobilizing event, and resume one week after or upon resumption of mobility.
- Add aspirin 81-325 mg for all patients at risk of thromboembolism (cigarette smoker, age greater than 40, obese, highly sedentary, cardiac risk factors) and consider aspirin for all patients without contraindication.

Estrogens all in one place table

	Dose	Adverse Effects	Contraindications	Interactions
		Common ↑weight, emotional changes, increased risk of deep vein thrombosis and pulmonary embolism (especially in those over age 40, cigarette smokers, highly sedentary, obese, and those with underlying thrombophyllic disorders, and those using oral estrogens especially ethinyl estradiol), adverse changes in lipid levels, increased insulin resistance, increase in prolactin levels, decrease in sexually stimulated erections, nausea / vomiting, migraine / headache, melasma (skin darkening), skin irritation from estradiol patches **Less Common** increased risk of cardiovascular events in those over age 50 with other cardiovascular risk factors (especially those taking progesterones in addition to estrogens), increase in triglyceride to high levels in users of oral estrogens (increasing risk of pancreatitis and cardiovascular disease), transient liver enzyme abnormalities, increasing risk of gallbladder stones, increased risk of diabetes mellitus (particularly in those with family history or other risk factors), increase in blood pressure (note spironolactone reduces blood pressure), hyperkalemia (in spironolactone users) **rare or plausible but have not been observed** liver damage, prolactinoma, increased risk of breast cancer (compared to men never exposed to estrogen)	Absolute Estrogen-dependent cancer *Precautions:* H/o thromboembolism CAD, HLD, DM Cigarette smoking Highly sedentary life style Migraine Seizure d/o Retinopathy CHF, valvular heart dz Thrombosis risk for any reason Family h/o estrogen dependent tumor	CYP 3A4, 1A2 inhibitors/ inducers
Estradiol	Starting: 2-3mg daily Typical: 4mg daily Max: 8mg daily			
Estradiol valerate (Progynova)	Starting: 2-3mg daily Typical: 4mg daily Max: 8mg daily			
Estradiol SL (estradiol micronized, Estrace)	Starting: 0.5-1mg Typical: 2mg daily Max: 4mg daily			
Estradiol valerate (Delestrogen)	Starting: 20-40mg IM Q2wk Average: 40mg IM Q2wk Max: 40-80mg IM Q2wk			
Estradiol cypionate (Depo-estradiol)	Starting: 20-40mg IM Q2wk Average: 40mg IM Q2wk Max: 40-80mg IM Q2wk			
Estradiol patch (Climara, Estraderm, Alora, Vivelle-dot)	Starting: 0.1mg/24hr Average: 0.2mg/24hr Max: 0.4mg/24hr			
Estradiol gel (Divigel, Elestrin, Estrasorb, Estrogel)	Dosing unclear from anecdotal reports			
Conjugated equine estrogens (Premarin)	Starting: 1.25-2.5mg daily Typical: 5mg daily Max: 10mg daily *This is less preferred In our clinic due to ethical concerns regarding the source of raw materials and theoretical concerns that this medication may be more thrombogenic than other options*			

Estrogens: Contraindications

- Presence of estrogen-dependent cancer

Estrogens: Precautions

History of thromboembolism or severe thrombophlebitis, Hyperlipidemia, diabetes, cigarette smoking, hepatitis, alcoholic liver disease, renal insufficiency, migraine, seizure disorder, retinopathy, obesity, coronary artery disease, valvular heart disease, congestive heart failure or other cardiac dysfunction, any condition causing tendency to thrombosis, strong family history of breast cancer or other estrogen dependent tumor.

Note: Attempt to control all above conditions prior to starting estrogen therapy. Starting hormone therapy may be strong incentive for patients to stabilize their medical condition. In many cases we start at lower doses for these patients and increase contingent on medical conditions stabilizing.

Estrogens: Expected Gender-Related Effects

- Breast development
- Redistribution of body fat
- Softening of skin
- Suppression of testosterone production
- Possible improved mood/improved impulse control
- Shrinkage of testes/testicular atrophy
- Decreased libido

Estrogens: Adverse Effects

See table above

Estrogens: Drug Interactions

Theoretical interactions with CYP 3A4, 1A2 inhibitors / inducers. No dangerous interactions have been noted between estradiol and other medications.

See Section VI.

Estrogens: Lab Monitoring

Baseline: lipid profile, prolactin level*, glucose.

Follow up: lipid profile, glucose 3 mo. after starting or increasing dose, 1 year after starting or increasing dose. Prolactin* optional 1 year after starting. LFT's optional 1 year after starting if pt. has high risks for liver disease (e.g. excessive wt. gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use)

* Prolactin levels: Baseline prolactin is obtained for patients with previous unmonitored estrogen

use, previously elevated prolactin level, previous or current exposure to phenothiazines. Follow up prolactin is done 1 year after starting hormones for patients on high dose estrogen, pts. suspected of taking doses above prescribed amount, and for patients also on phenothiazine. Serum prolactin level correlates well with pituitary activity and prolactin is likely to be significantly increased for a long period (greater than 1 year) prior to an adenoma enlarging. Elevated prolactin levels frequently decrease spontaneously. Therefore:

- If prolactin is less than 25, continue to monitor per protocol.
- If prolactin is 25-40, ask patient about outside sources of extra estrogen (usually injections) and encourage patient to cease these. Continue to monitor per protocol.
- If prolactin is greater than 40, decrease estrogen dose by 1/2 or ask patient to stop** estrogens, recheck 6-8 weeks.
- If prolactin is greater than 100, stop** all estrogens and retest in 6-8 weeks.
- If continues high consider MRI of pituitary. If prolactin level is falling, restart estrogen at lower dose and monitor every 6-8 weeks.
- Be aware that typical and atypical antipsychotics can increase prolactin levels.

**When stopping estrogens it is always advisable to taper over several weeks when medically possible to avoid emotional effects.

Testosterone level: used selectively and rarely but may be appropriate for patient not showing expected demasculinization after 6-12 months on maximum anti-androgen.

Estrogen levels have not been useful.in our setting

Estrogens: Other Clinical Monitoring/Considerations

- Nicotine/cigarettes increase degradation of estrogens and increase DVT risks.
- Some HIV protease inhibitors increase metabolism of ethinyl estradiol.
- Many other drugs increase or decrease metabolism of ethinyl estradiol.
- Breast symptoms and breast exam every 6 months; BSE education.
- Prostate exam as in the general population. PSA may not be reliable for cancer screening. Prostate gland is not removed with SRS.
- Check for signs and symptoms of DVT at each follow up visit

Review history and teach warning signs of DVT/PE.

Progesterone Therapy

Medroxyprogesterone has a demonstrated anti-androgen effect at high doses but has no advantage over spironolactone. Its physiological effect is primarily on the uterus and effects on feminization are unclear. Some patients report a potentiating effect on breast growth or fat redistribution. There are also reports of androgenic effect in some patients and an adverse effect on mood (PMS-like effect) in some patients. There is concern for increased cardiovascular risk.

Medroxyprogesterone is not a routine part of our hormonal reassignment regimen but may be used in the following situations:

- As adjunct for patients on maximum estrogen doses with unsatisfactory effects.
- In patients intolerant of other drugs.

Dosing

- Typical starting doses: 2.5mg/day
- Typical dose: 5-10mg/day
- Maximum dose: 20mg/day

Other oral and injectable forms of progesterone are available

Consider cycling progesterone (i.e. 1st 10 days of the month)—patients seem to like this approach and it reduces the amount of progesterone prescribed.

Progesterone: Contraindications

Same as estrogens.

Progesterone: Precautions

Same as estrogens. Carefully review use in any patient with underlying psychiatric or cardiovascular disorders.

Progesterone: Expected Gender-Related Effects

Enhanced estrogen feminization effects.

Progesterone: Adverse Effects

Lipid abnormalities, weight gain, edema, mood disorders depression/irritability, facial and body hair growth and coarsening.

Progesterone: Drug Interactions

Unknown.

Progesterone: Lab Monitoring

Same as estrogens.

Lab Monitoring for Patients on Feminizing Hormone Therapy
(these are in addition to labs appropriate for pts. age and medical conditions)

	CBC	Fasting glucose	Fasting lipids	Testosterone level	LFT's	Prolactin	BUN / SCr	Lytes
On estrogen		Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Optional 6 mo. after starting if not showing expected demasculinization	Optional 1 year after starting if pt. has risks for liver disease (e.g. excessive wt. gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use)	Baseline for patients with prev. unmonitored estrogen therapy, previous elevated prolactin level, previous or current exposure to phenothiazines Optional after 1 year (patients on high dose estrogen, pts. suspected of taking doses above prescribed, pt. also on phenothiazine)		
On Spironolactone				Optional 6 mo. after starting if not showing expected demasculinization			Baseline 2 mo. after starting or increasing dose every 6 mo. when on stable dose	Baseline 2 mo. after starting or increasing dose every 6 mo. when on stable dose

Bone Health
Endogenous estrogens and androgens protect against osteoporosis. Patients who are not at physiological levels or stop hormonal therapy are at risk of osteoporosis. Consider BMD study for these patients, for post orchiectomy patients not on hormones and in all patients with other risk factors.

Mammograms
Mammograms for transwomen have no clear evidence of benefits; there is no evidence that transwomen on estrogen are at high risk for breast cancer. Mammographic changes are dependent on time of estrogen exposure. We follow standard guidelines for woman for our transwomen patients and begin screening with mammograms for patients over age 40 or 50 who have been on estrogen for 20 years or more, or earlier if abnormal findings or family history of breast cancer.

Masculinizing Treatment Protocol

The main available masculinizing hormone therapy are androgens, which usually produce satisfactory masculinizing results. The entire process of masculinization can take years to complete. However, in many patients, changes in voice pitch, muscle mass, and hair growth become apparent after just a few months of a regular hormonal treatment regimen.

Testosterone all in one place table

	Dose	Adverse Effects	Contraindications	Interactions
Testosterone cypionate Testosterone enanthate * Cypionate in cottonseed oil; enanthate in sesame oil	Starting: 50-100mg Q2wk or 25-50mg/wk Typical: 200mg Q2wk or 100mg/wk Max: 400mg Q2wk or 200mg/wk	**Common** ↑weight, oily skin, acne, vaginal atrophy, male pattern baldness, emotional changes, ↓ HDL cholesterol level, skin irritation with patch, risk of exposing partners or children to testosterone with topicals **Less Common** peripheral edema ↑blood pressure, erythrocytosis, transiently abnormal hepatic transaminases, dyslipidemia, obstructive sleep apnea, increased aggressiveness, skin irritation with gels, skin ulceration with patch **rare or plausible but have not been observed** HTN, liver dysfunction, ↑risk of cardiovascular disease, ↑risk of breast cancer, ↑risk of endometrial hyperplasia, ↑risk of ovarian cancer	*Absolute* Pregnancy h/o testosterone responsive cancers *Precautions:* Erythrocytosis Cardiac, hepatic, renal, or vascular disease with edema or risk of edema Sleep apnea or high risk of sleep apnea due to obesity or chronic lung disease dyslipidemia HLD	Warfarin Cyclosporine Insulin
Testosterone propionate	Typical: 100-200mg IM 1-2x/wk Max: 200mg IM 2x/wk			
Testosterone patch (available strengths 2mg, 2.5mg, 4mg, and 5mg patches)	Starting: 2-2.5mg/24hr Typical 5mg/d Max 7.5mg/d			
Testosterone gel (Testim 1%)	Starting: 2.5mg every morning Typical 5mg every morning Max 10mg every morning			
Testosterone gel (Androgel 1%)	Starting: 2.5mg every morning Typical 5mg every morning Max 10mg every morning			
Testosterone gel (Androgel 1.62%)	No published or anecdotal experience with this preparation			
Testosterone solution (Axiron axillary solution)	No published or anecdotal experience with this preparation			

Compounded Testosterone ointment, cream gel or DHT cream	Available in various strengths from compounding pharmacies				.

Available Forms of Testosterone and Dosing

Intramuscular Route

- testosterone cypionate: 100-400 mg IM every 2 weeks (range every 1-4 weeks)
- testosterone enanthate: 100-400 mg IM every 2 weeks (range every 1-4 weeks)
- testosterone propionate: 100-200 mg IM 1-2 times/wk.

IM testosterone is released slowly from the muscle. There are variations in the plasma concentration through injection cycles, causing symptoms that may require dose or frequency changes.

Transdermal System

- Androderm patch: This is a non-scrotal patch. It has the advantage of avoiding peak ups and downs in testosterone levels, thus delivering a constant dose of hormone. This form can be an effective alternative in patients who are more sensitive to variable testosterone levels.
- Androgel, Testim: Needs to be used with caution at the possibility of exposing partners.
- Testosterone ointment in petrolatum base 2-4%. (available from compounding pharmacies) Used as an adjuvant to increase concentration in local areas (face, clitoral area). Mixed results in terms of effectiveness.

Oral Preparations

(Methyl/testosterone; Oxandrolone) These are not used in our clinic. PO preparations undergo extensive liver metabolism, increasing the possibility of liver complications.

Testosterone: Contraindications

pregnancy, breast cancer

Testosterone: Precautions
Erythrocytosis, Cardiac, hepatic, renal, or vascular disease with edema or risk of edema, Sleep apnea or high risk of sleep apnea due to obesity or chronic lung disease, dyslipidemia

Testosterone: Expected Gender-Related Effects

- Cessation of menses
- Voice change to a male range
- Increased hair growth on face, chest, and extremities
- Increased muscular mass and strength
- Redistribution of body fat to an android (apple) shape
- Clitoral enlargement

Testosterone: Other Effects

- Protection against osteoporosis

- Increased libido
- Increased physical energy

Note: Changes in voice range, hair follicles, and clitoral size are permanent. Other effects are reversible at the cessation of hormonal therapy.

Testosterone: Possible Adverse Effects

See table above

Testosterone: Drug Interactions

- Potentiation of warfarin
- In diabetic patients, blood sugar decreases, requiring adjustments in dose of hypoglycemic agents

Testosterone: Lab Monitoring
Baseline: CBC, lipids, urine HCG if pregnancy is a possibility. Glucose, LFTs optional of PCOS is suspected
Follow up: CBC, lipids 3 mo. after starting or dose increase and 1 year after starting or dose increase. LFTs optional 1 year after starting if pt has risks for liver disease (e.g. excessive wt gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use) Testosterone level optional 3-6 mo. after starting or dose increase. May be particularly appropriate if not showing expected masculinization, showing signs of adverse effects.

Testosterone: Special Considerations

There is no evidence that screening with ultrasound will decrease mortality or morbidity of endometrial cancer. Patients at increased risk tend to present with symptoms at an early stage, therefore it is important for the patient to be educated and report the early symptoms (vaginal bleeding, or thin clear discharge, pelvic pain, dyspareunia).

Obtain pregnancy test before starting therapy if there is any possibility of pregnancy. Patients will be ovulating at the initiation of treatment and possibly at other times throughout treatment. Stress the use contraception if sexually active with biological men.

Smoking cessation should be strongly encouraged to decrease cardiac risk factors.

Breast exams and mammograms are essential. Any post-surgical residual axillary breast tissue requires regular examination as well.

Pap smears are still important follow-up in patients with a cervix.
Assess for hypersexual behavior and safe sex practices. Risky sexual behavior has been found to be common in FTM patients. Addressing safe practices and screening for HIV and STD is necessary.

Bone Health
Endogenous estrogens and androgens protect against osteoporosis. Patients who are not at physiological levels or stop hormonal therapy are at risk of osteoporosis. Consider BMD study for these patients, for post oophorectomy patients not on hormones and in all patients with other risk factors.

Lab Monitoring for Patients on Masculinizing Hormone Therapy
(these are in addition to labs appropriate for pts. age and medical conditions)

	CBC	Fasting glucose	Fasting lipids	Testosterone level	LFT's	Urine HCG
On testosterone	Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Baseline if PCOS is suspected	Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Optional 3-6 mo. after starting or dose increase	Baseline if PCOS is suspected Optional 1 year after starting if pt. has risks for liver disease (e.g. excessive wt. gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use)	Baseline if pregnancy is a possibility

Psychosocial Issues

Tom Waddell Health Center serves primarily poor and medically indigent patients. The subpopulation of transgender patients that we serve (homeless, poor and often without family support) accounts for the nature of the psychosocial issues that we frequently address. Our experience does not necessarily reflect the range of concerns of all individuals who identify as transgender.

Addressing basic healthcare needs is difficult for transgender individuals, as many have had negative experiences seeking both medical care and mental health treatment in the past. In order for patients to feel comfortable enough to actively engage in healthcare, all clinic staff must be committed to creating a trans-friendly, warm and nurturing environment. Staff must approach their work with the understanding that transgender patients, especially at the onset of treatment, often feel fearful of not being believed about their gender identity. Some worry that they will be dismissed as mentally ill and are bracing themselves for disrespectful comments or of having the novelty of their presence be used as a training opportunity of some sort. Consequently, transgender patients may present initially as more anxious or guarded than might otherwise be the case. By being sensitive to these issues, good working relationships with providers can be readily established. Eventually a positive institutional transference will develop and there is a much greater likelihood that patients will commit to the clinic and their own healthcare.

In our intake process, patients are seen initially by either a social worker or a nurse who performs a brief, pre-screening interview to address any immediate needs. Upon completion of the pre-screening, we schedule patients to come back to meet with a social worker who takes an in-depth psychosocial history. This interview allows us to form an understanding of our patient's gender identification and to better appreciate the context in which they have formed their identity.

At the point at which an individual begins to live their gender identity more fully and begin transition, they are often doing so with the understanding that this may lead to the loss of significant relationships, societal status, employment, financial security and stable housing. When seeing patients for the first time at our clinic often they are both very happy to finally be pursuing medical care to support their transition, but at the same time grieving these multiple losses. Patients will often benefit from mental health treatment if their own internal coping mechanisms have become exhausted in this process. Our intake assessment helps us to identify the need to refer to various social services including substance abuse counseling, psychotherapy, support groups, domestic violence advocacy and legal advocacy, including political asylum related resources. We have found it important to gather information on the
following topics:

Trauma/History of abuse: It is common for our patients to present with histories of trauma ranging from family and or peer rejection and bullying throughout childhood and adolescence, to physical, emotional and sexual abuse by family and or outsiders. When patients have histories of sex work or currently engage in sex to support themselves financially, they may have experienced trauma associated with this. Many of our

immigrant patients have trauma histories due to being victimized in their countries of origin because of being transgendered.

Homelessness: Because of the stigma associated with being transgendered, as youths many transgendered individuals are given ultimatums, to either conform to gender norms or be ostracized from their families of origin, rendering them homeless. Early experiences of homelessness result in a greater likelihood of missing out on an education, needing to engage in survival sex work, developing addictions and being physically and/or sexually victimized. These risk factors along with higher rates of poverty due to employment discrimination (regardless of educational background), lead transgendered people to be far more vulnerable to becoming homeless than members of the general population.

Degree of family acceptance vs. rejection of patient gender issues: The degree of family acceptance of an individual's gender identification has a significant affect on identity development and sense of self worth. In the absence of family acceptance, it is important to identify if the patient has built a support network outside of their family.

Substance abuse: Many patients have long term patterns of problematic substance use, which they have employed as a means of coping with their gender issues in an unsupportive family or community. Many benefit from harm reduction education, support groups or substance abuse treatment. In order to best support transgendered individuals seeking assistance in addressing problematic relationships with substances, best practices necessitate offering services from providers who approach their work from a place of cultural humility/trans-sensitivity.

Lack of psychosocial support: Some of our patients live in isolation, without family or friends and only have superficial relationships with other people. For others, their only experience of being with other trans-identified people is in settings where drugs and alcohol are being used and they and their peers are negotiating sex work.

Social Support Function of Transgender Tuesdays: We have had wonderful, unforeseen outcomes as a result of having a separate clinic for our transgendered patients. The hallway that functions as our waiting room has developed organically into a meeting place where informal support networks have been created. This has been a unique experience for many of our patients to socialize in a safe, trans-friendly space. For patients that are shy, we have found it helpful to offer to introduce them to other patients (if all parties are agreeable) so they too can benefit from this sense of community and belonging. We are currently offering a drop-in Wellness Group, facilitated by our clinical social workers, that takes place during clinic hours. The group allows patients to define wellness and what that would look like in their lives. By allowing the opportunity for our patients to express themselves and exchange ideas on this topic, they can reflect on, set and work toward achievable steps toward their goals. In addition, group members learn new methods for relaxation and creative expression. At the same time, they have the opportunity to develop mutual support networks among their peers and develop a greater sense of self acceptance in a safe, positive environment.

History of domestic violence: Patients may be in violent relationships. Many fear leaving because of threats of increased violence, because they believe that they are unlovable or will be unable to find another partner who will accept them as they are.

Because of employment discrimination, many transgendered individuals may be financially dependent on an abusive partner. Additionally the violent partner may be threatening to "out" the patient to friends, family or in the workplace which may render them homeless. Our undocumented patients are extremely vulnerable, as many are threatened with contacting ICE, or just fear calling the police at all due to fear of deportation.

Employment: Even for individuals who have great prior employment records, many transgender people find it difficult to find work due to discrimination. The obstacle of claiming a work history in a prior name and gender identity can feel insurmountable, but even apart from this; employment discrimination is real and pervasive. In San Francisco, almost 60% of transgender people earned less than $15,300 in 2006. The median income in SF the same year was just over $65,000. Transgender people with a Bachelor's degree earned 40% less than non-transgendered (also referred to as cisgendered) people (NCTE http://www.thetaskforce.org/downloads/reports/reports/reports/ntds_full.pdf). In SF, we are fortunate to have the Transgender Economic Empowerment Initiative, an organization that helps transgendered individuals connect with employers who are trans-friendly.

Mental health: Many patients present with psychiatric disorders such as: anxiety, PTSD, depression, histories of suicide attempts and sometimes may have a thought disorder in which their gender issue is entrenched in their delusional thought process. Patients may also have psychological issues due to the impact of trauma experienced during their identity formation in early childhood. Although many of our transgender patients have had negative experiences with mental health practitioners, we may encourage patients to seek treatment with transgender-friendly therapists to assist them in working through their mental health or situational issues related to transition. We are very selective in the referrals we provide. By creating a supportive relationship with our patients, we are able to facilitate linkage to other providers and provide our patients the best chance of successful therapeutic outcomes.

Suicide Risk: An October 2010 study done by the National Center for Transgender Equality found that 41% of transgender people in the US have attempted suicide, compared to a rate of 1.6% for the general population. Anecdotally, we have found transgendered people's suicide attempt rates to be even higher. Because of the discrimination and in some cases daily harassment experienced by transgender people, they may experience depression and become quite isolated. It is important for medical and psychosocial providers to thoroughly assess patients who present with depressive symptoms for suicidal ideation.

Neurodiversity: In addition, we regularly work with patients who have neurodiverse presentations, most commonly Asperger's disorder, which has often gone undiagnosed. Neurodiverse transgender patients may appear to, but in reality may not truly appreciate the multiple, nuanced, social challenges that gender transition frequently presents. These patients benefit from additional support in order to better anticipate and problem solve around difficult situations which may arise in the course of their transition.

Intellectual disabilities: Transgender patients with intellectual disabilities may have been raised in settings where their gender identification has been largely dismissed or pathologized. Even as adults, patients if living with family or in group settings, may be

discouraged from living their gender identity as well as expressing themselves sexually. They may also be denied access to a safe space in which to better negotiate safer sex. Risk reduction counseling is important to offset the high risk of STDs and unplanned pregnancy.

Gender identity: Each patient may have their own ideas and language on how to define and own their gender identity. It is important to meet patients where they are in their gender identity at each point of contact. The gender continuum can be fluid, or evolve for each patient in different ways.

Sexuality: Historically, transgender people have been denied access to hormones and surgeries to support their transitions unless they stated that their goal was to transition (usually from male to female), so that they could go on to pursue a heterosexual relationship in accordance to societal norms. Although this is no longer the case, there are unforeseen risks associated with the lack of appreciation of how transpeople's sexual orientation may evolve once they have begun transition.

Body Image and sexual orientation: In the same way that each patient identifies differently on the gender continuum, each patient will have a different degree of self-acceptance of their own sexual identity. Dating histories are important as well as comfort levels with sexual self-expression at the current stage in transition. Many patients experience changes in their sexual orientation in transition which may be confusing. Patients also have varying degrees of body acceptance. It is important to discuss these issues to normalize the patient experience. Psychotherapy may be helpful and necessary around this issue.

Gender Queer: Some people do not feel that they identify anywhere in the gender binary system, which reduces gender to male and female. In some cases, these individuals may choose not to identify at all or may identify as "gender queer" also sometimes referred to as "third gender" or "non-binary." People who identify outside the binary system may be either male or female bodied and may present as androgynous or express themselves in different ways at different times in terms of their gender, sometimes referred to as gender fluidity. Although it may feel less familiar to providers, gender queer individuals' presentation must be respected and validated in the provision of services at gender clinics. Patients who identify in this manner may desire hormones or surgical modifications to reduce the sense of incongruence they feel with their bodies. These requests must be evaluated in the same way that any other transgender person who identifies within the binary gender system would be considered for transgender care.

Female to Male sexuality: People who identify on the FTM spectrum may identify in any way in terms of sexual orientation, from gay, queer or bi, to heterosexual (with female identified partners), or choose not to identify at all. This can also change. In addition to the anticipated development of male secondary sex characteristics and an increase in libido, FTM trans people can also experience changes in sexual orientation upon beginning testosterone therapy, which can be confusing. For example, some FTM people who may have had primarily female sexual partners may begin becoming sexually attracted to men, sometimes exclusively. Some FTM individuals in early transition report struggling to adjust to an increased libido. FTM individuals newer to testosterone treatment may sometimes exhibit compulsive behaviors, seeking out sexual

partners to the extent that it interferes with work or school. This presents unforeseen risks with regard to STD transmission. Counseling or support groups can be very helpful in providing additional support through these aspects of transition. It is necessary for the providers in the primary care clinic to provide ongoing risk assessments.

MTF Sexuality: Male to Female Transgender people may, like their FTM or genderqueer counterparts may identify in any way in terms of their sexual orientation, from gay, lesbian or bisexual or heterosexual (with male identified partners), to asexual or they may choose not to identify at all. Although patients may begin their transition with a sense of sexual orientation that has long since been defined, once transition has begun, this can change, which can be surprising. Many MTF patients report decreased libido upon taking testosterone blockers and estrogen. Many patients report body image issues, particularly in the case of patients who want breast implants or who do not want a working penis. Some patients report that their body images get in the way of their expressing themselves sexually, while others experience a sense of validation of their female identity when having sex with someone who they feel sees and responds to them as a woman. For some patients, particularly those who do not have much in the way of trans positive social support, sex can become a means of seeking this type of validation of their female identity which can sometimes take on a compulsive quality. MTF trans patients may struggle with feelings of inadequacy due to body image issues. Negotiations around safer sexual practices may be subordinated to immediate needs for acceptance and validation. It is vital to assess patients' understanding of risks associated with STD transmission and any cognitions which may underlie their unsafe sexual practices to ensure that patients are as empowered as possible to negotiate safer sexual practices for themselves.

Surgeries/Silicone: It is important to provide information to patients on the dangers of silicone injections and explore patients' interest in pursuing this. Many times it is during their initial contact with us that patients are considering silicone injections, as it is one means of altering their bodies to better reflect their gender identities. By discussing this in a non-judgmental way, we are able to create an open dialogue in which accurate information can be provided. We also are interested in getting information on what surgeries patients have had, what surgeries they would like to have and what changes they are perceived to make in the individual's life. Exploring reasons behind the desire for surgery can help patients think through the significance of these changes for themselves. Patients often aren't sure at what point in their transition they will feel comfortable. Sometimes this might be different than what they anticipate.

Support through transition: We have found that gender transition can be quite stressful for patients. We try to monitor both how family and society is responding to the patient's transition, and the patient's time frame and expectations of passing in their new gender.

Political Asylum: We regularly see patients from other countries. At the initial point of contact and on an ongoing basis we talk about the benefits of applying for political asylum if the patient has experienced harassment and abuse in their native country. We refer people to the National Center for Lesbian Rights or the Lawyer's Committee for Civil Rights, where they can get advice on how to proceed. Due to the time limits in applying for asylum, some patients may feel they have been here too long to pursue this option, but we have been able to make strong cases for those who have been isolated or

mentally incapacitated. Whether it can be pursued depends on whether an attorney feels that the case is strong enough. Applying for asylum is also quite difficult and can trigger many trauma responses due to patients needing to recount various stories of abuse, assault and torture. We strongly advise all patients going through this process to seek psychological support.

Harassment: Due to the nature of societal perceptions of transgendered people, we have found that patients may not feel safe to dress in the gender in which they identify. Daily, consistent overt harassment, questioning outwardly or with looks if they belong in the bathroom, etc. are regular stories our patients tell. Many patients go through the world bracing themselves against these assaults and it is important to find a means for patients to get support around these experiences, through counseling or LGBT advocacy groups, such as Communities United Against Violence.

Sex Work: As a result of many complex reasons including employment discrimination, the unconscious re-enactment of previous sexual trauma, and the need for validation, some trans people engage in sex work and survival sex/sex drug exchanges in an attempt to meet their financial and unconscious psychological needs. Some trans people feel they have no other options but to be sex workers after transition. As sex workers, trans people are placed at greater risk of violence and experiencing additional traumas which can lead to or perpetuate problematic relationships with substances, all of which increases trans people's risk of STD transmission. Referrals for employment assistance, substance abuse treatment and psychological counseling can be helpful as well as ongoing risk reduction interventions.

STD Risk Reduction for transwomen: It is known both anecdotally and has been substantiated in research (Clements- Noelle, 2008) that trans women in San Francisco (and other urban areas) frequently engage in unprotected, anal receptive sex with men despite knowing the risks involved for STD transmission. It is also a fact that men will pay more for sex workers who don't use condoms. In addition, some trans people will use condoms with clientele, but not with a primary sexual partner, who may still place them at risk. It is extremely difficult to engage to trans patients' boyfriends, or primary sexual partners to educate them about risk reduction. Consequently, ongoing risk reduction counseling is vital to address the high risks for STDs in this population.

STD Risk Reduction for transmen: Some FTMs who have had female sexual partners primarily prior to transition, may not be knowledgeable about or see themselves at risk for STDs, nor may their medical providers, due their identification as part of a lower risk group at the onset of treatment. FTM individuals may be knowledgeable about STD transmission and employing safer sex practices, but behaviorally may place themselves at high risk for contracting STDs. Some attributions for not using condoms or latex barriers may include fearing a lack of acceptance by sexual partners (be they women, gay or bi men), as means of compensating for body image issues they fear may make others reject them, and in some cases in response to survivor guilt for not being exposed to HIV/AIDS due to not being out in the gay community in the earlier periods of the AIDS pandemic. As testosterone causes increased vaginal dryness, intercourse can create a more viable host for HIV/STD transmission. Ongoing check-ins with FTMs new to testosterone may help to better support them to decrease their risks for STD

transmission. Many FTMs benefit from gender therapists, FTM specific groups, be they in-person or online in order to have a safe place to get support around sexuality issues. For clinicians it is important to recognize that FTMs may tend to be isolative, both in the world and with other FTMs. They may need encouragement to find safe places in which to get needed support regardless of how high functioning they may be in other areas of their lives.

Resilience: Despite remarkable challenges many of our patients demonstrate amazing resilience. Resilience is recognized as the counterbalancing force to risk and vulnerability. Components of increased resilience include family and relationship supportiveness, peer support, identity pride, and autonomy. We foster resilience by facilitating patient autonomy. Our informed consent model encourages patients to be able to be responsible for their health. We can also support resilience by making our patient provider relationships supportive, facilitating peer support, and taking our patient's identities seriously. Not least is the constant process of communicating to our patients how meaningful their courage in facing severe social discrimination and being their true selves is.

Additional Issues

Surgical Options

For MTF patients this may include breast augmentation, vaginoplasty, orchiectomy, adam's apple shaving, vocal cord surgery, facial feminization surgery, etc. We encourage our patients to wait until their breasts grow to a maximum with the use of medications before deciding upon breast augmentation surgery, as breast growth without surgical intervention can achieve a satisfactory result. After orchiectomy, estrogens are still required to prevent osteoporosis and other physiological functions. Doses are generally lower than doses required for transition.

For FTM patients this may include mastectomy and chest re-contouring, hysterectomy, salpingectomy, and oopherectomy, metoidioplasty, phalloplasty, scrotoplasty. etc. Continued testosterone is required to prevent osteoporosis and other physiological functions. Lower than physiological replacement doses increase risk of osteoporosis especially in patients who have ovaries removed. .

We assist our patients in their surgical decisions by offering education about the procedures and their effects, providing a directory of different surgical groups within the country and abroad, and facilitating pre-op requirements. Usually, our clinic follows the medical care after surgery.

Silicone and Injectable Body Molding Substances

In light of the paucity of research on this subject and the complete lack of treatment information in print, we offer our observations over the past 12 years.

In our practice we address the dangers to our patients of injecting silicone or other preparations, in their efforts to cheaply and inexpensively mold feminine body contours. We have patients who have been permanently disfigured by these injections, which often mix industrial grade silicone and/or other substances such as paraffin and oil.

Such silicone injections are easy to access and cheap. Such injections are usually performed by unlicensed practitioners who often approach male-to-female transgender individuals in bars or clubs. Lay practitioners often prey on transgendered persons' lack of funds to pay for surgery and offer injections at parties where multiple people receive injections.

The immediate dangers of these injections include: soft tissue infection, risk of contaminated needles transmitting disease such as HIV, hepatitis or MRSA and foreign substance reaction. The long term dangers include: recurrent inflammation, migration of the foreign matter from the injected site, disfigurement such as nodules, granulomata and pain syndromes. Treatment is palliative; there is no effective way to remove unencapsulated silicone from body tissue. Silicone injections into breast tissue make mammograms ineffective.

We see the damaging sequelae of silicone and other substances on an infrequent but regular basis. During periods of inflammation when the affected tissue is hot, red and tender we will often treat with a course of oral steroids along with antibiotic coverage. A typical course of treatment is a second-generation cephalosporin along with prednisone for a two week course.

Anecdotally, we have also noticed that sun tanning or tanning booth exposure may trigger tissue

inflammation over affected body areas.

We have found counseling and education in this area to be effective in reducing patients being victimized in this way.

Electrolysis and Other Permanent Hair Removal

Permanent hair removal is a common request of our MTF patients. Several options are available and we attempt to advise our patients on reliable community practitioners. EMLA or similar topical anesthetics may be prescribed.

Adolescents

We take care of a few adolescents in our practice. We require psychiatric evaluation and diagnosis, ongoing psychotherapy, and family support and involvement in the process. Emancipated teenagers are not required to have parental input. Initiating hormones at a younger age has a better outcome than starting them later, but this also creates physical and physiological changes potentially irreversible in case of future regret.

Future Directions

The original version of these protocols written in 1994 coincided with a very dark period for transgender health. Many transgender individuals were infected with HIV and were dying of AIDS in the era prior to effective anti-viral therapy. Discrimination and violence were very extreme. Virtually every patient told horror stories of poor experiences in the healthcare system. 19 years later many of the same challenges exist but there have been significant medical advances and changes in social attitudes and social acceptance of gender non-conformity and the concept of a diverse transgender spectrum. Significant research has been done and published in the areas of prevention of HIV, hormonal reassignment of gender, surgical techniques, and the benefits of treating transgender individuals with equal rights and respect. The lessons from the everyday use of these protocols have been in the exceptionally positive outcome of respecting our patients' autonomy and wisdom about their own needs. These protocols will continue to evolve as we gain further experience and as research demonstrates best practices.

Transgender people are increasingly visible and the richness they bring to our society and daily lives is increasingly recognized. Increasingly transition related services including surgery are covered by health insurance. Efforts to end discrimination are underway in settings from prisons to universities. We hope these protocols and future versions will help to make healthcare of transgender individuals more routine and continue to increase the health of patients and the satisfaction or the health care team

Acknowledgement

Thank you to all of the staff of Tom Waddell Health Center who have worked on our transgender team over the past 19 years. Thank you to our community allies and advocates. Thank you to our patients who have taught us in more ways than we or they ever imagined.