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Wheelchair Curling Instructional Manual



A Beginner's Guide

Wheelchair Curling Instructional Manual

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Introduction to Wheelchair Curling

Curling in this country has the long and distinct pride of being the best in the world and it is by no means different when speaking of Wheelchair curling. Wheelchair curling in Canada started in the year 2001, with a dream. This dream was that Canada could once again become a prominent force in a brand new Wheelchair sport. Curling was first adapted in Europe in 1999, when a hand full of countries got together to have a “bonspiel” and after several years of development the World Curling Federation held the first World Wheelchair curling championships in Sursee, Switzerland. Canada was invited to attend this Championship and accepted the challenge with pride. There was only one small problem! Canada had no wheelchair curlers. After a call for athletes; approximately 15 athletes were invited to the Oakville Curling Club to attend an open try out for what would become the first Canadian wheelchair curling team. From this 5 distinct and dedicated athletes answered the call.

With only a few months training, they were sent off with best wishes to attend the first world championships. Canada answered the call and found itself at the end of the round robin in first place. A couple of days later this same group of dedicated athletes found themselves in the gold medal match. After a very close battle, that came down to the last stone in the last end, Canada received the Silver medal, missing Gold by only 1 point. Since this first outing team Canada has captured Silver and Bronze at the Worlds and of course the historic Gold medal at the 2006 Paralympic games in Torino, Italy. It is with this momentum that we have begun the dream towards bring home Paralympic Gold at the next Winter Olympics.

Only through training and competition combined with positive coaching methodologies can Canada continue to forge as the precedence setter in wheelchair curling. Since the initial stages, Canada has come a long way. This includes establishing the Canadian wheelchair championship each year, the selection of the Canadian national athlete pool for consideration and selection to team Canada in conjunction with the CCA’s partnership with the TSX to create, standardizing and developing wheelchair curling at the grass roots level.

This manual shall be your guide to the establishment of basic implementation of a grass roots development wheelchair program for your community with the essential tools for implementation and maintenance.

Introduction to Disability

The greatest ground work that you need to understand is the type of athlete with which you will be dealing. Athletes with a disability are far too often generalized or referred to as special Olympic athlete. This is by far what they are or who they are. The questions concerning the definition of "person with a disability" and how persons with disabilities perceive themselves are complex. It is no accident that these questions are emerging at the same time that the status of persons with disabilities in society is changing dramatically. Questions of status and identity are at the heart of disability policy, these being the central goals of the disability rights movement.

Most common dictionaries define disability as....

1. Lack of adequate power, strength, or physical or mental ability; incapacity.
2. A physical or mental handicap, esp. one that prevents a person from living a full, normal life or from holding a gainful job.
3. Anything that disables or puts one at a disadvantage
4. The state or condition of being disabled.
5. Legal incapacity; legal disqualification.

However DISABILITY POLICY SCHOLARS describe four different historical and social models of disability:

A **moral model** of disability that regards disability as the result of sin is historically the oldest and is less prevalent today.

A **medical model** came about as "modern" medicine began to develop in the 19th Century, along with the enhanced role of the physician in society. Since many disabilities have medical origins, people with disabilities were expected to benefit from coming under the direction of the medical profession. This model refers to disability as a defect or sickness that must be cured through medical intervention;

A **rehabilitation model**, is similar to the medical model; it regards the person with a disability as in need of services from a rehabilitation professional who can provide training, therapy, counseling or other services to make up for the deficiency caused by the disability. Historically, it gained acceptance after World War II when many disabled veterans needed to be re-introduced into society. The current Vocational Rehabilitation system is designed according to this model.

The **disability model**, under which *"the problem is defined as a dominating attitude by professionals and others, inadequate support services when compared with society generally, as well as attitudinal, architectural, sensory, cognitive, and economic barriers, and the strong tendency for people to generalize about all persons with disabilities overlooking the large variations within the disability community."* It has taken hold as the disability rights and independent living movements have gained strength. This model regards disability as a normal aspect of life, not as a deviance and rejects the notion that persons with disabilities are in some inherent way "defective". The question centers on normalcy. What, it is

asked, is the normal way to be mobile over a distance of a mile? Is it to walk, drive one's own car, take a taxicab, ride a bicycle, use a wheelchair, roller skate, or use a skate board, or some other means? Most people will experience some form of disability, either permanent or temporary, over the course of their lives. Given this reality, if disability were more commonly recognized and expected in the way that we design our environments or our systems, it would not seem so abnormal. The disability model recognizes social discrimination as the most significant problem experienced by persons with disabilities and as the cause of many of the problems that are regarded as intrinsic to the disability under the other models.

The United Nations uses a definition of disability that is different from the above:

Impairment: Any loss of abnormality of psychological or anatomical structure or function.

Disability: Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.

Handicap: A disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfillment of a role that is normal, depending on age, sex, social and cultural factors, for that individual. Handicap is therefore a function of the relationship between disabled persons and their environment. It occurs when they encounter cultural, physical or social barriers that prevent their access to the various systems of society that are available to other citizens. Thus, handicap is the loss or limitation of opportunities to take part in the life of the community on an equal level with others.

These definitions reflect the idea that to a large extent, disability is a social construct. Most people believe they know what is and is not a disability. If you imagine "the disabled" at one end of a spectrum and people who are extremely physically and mentally capable at the other, the distinction appears to be clear. However, there is a tremendous amount of middle ground in this construct, and it's in the middle that the scheme falls apart. What distinguishes a socially "invisible" impairment - such as the need for corrective eyeglasses - from a less acceptable one - such as the need for a corrective hearing aid, or the need for a wheelchair? Functionally, there may be little difference. Socially, some impairment creates great disadvantage or social stigma for the individual, while others do not.

THE TRUTH BEHIND DISABILITY IS.....

Disability in reality is what the individual who has the disability determines it to be.

Each person will share their functionality as they progress.

When preparing to deal with athletes with a disability one must remember that disability itself is wide ranging. Disabilities can include but are not limited to; Visual Impairments, Hearing Impairments, Seizure disorders, Mental/Emotional Disabilities, Age-Related Impairments, and of course Mobility Impairments. This can also include any and all combinations of disabilities together. When dealing with wheelchair curling; in particular; we need to concentrate our efforts in dealing with mobility impairments. There are five basic types of mobility impairment that you will encounter; **Quadriplegic, Hemiplegics, Paraplegic, Amputee, and Les Autres***.

To give you a very brief summary of what each of these terms mean we ask you to refer to the following;

Quadriplegic

- Will affect four (4) limbs
- Lower cervical lesions between C4 and C6 with involvement of all four limbs.
- Non-functional triceps. Lower cervical lesions (up to C7) with involvement of all four limbs.
- Triceps good or normal.
- Poor flexion and extension of the wrist.
- Lower cervical lesions (up to C8) with involvement of all four limbs.
- Good or normal function of wrist extensors and flexors.
- Poor functioning of the small muscles of the hand.
- Thoracic lesions from T1 to T5.
- Involvement of the trunk and lower extremities.
- No use of abdominal muscles.
- No or limited sitting balance.

Hemiplegics

- Will affect three (3) or more limbs
- Thoracic lesions from T6 to T10.
- Involvement of the abdomen and lower extremities.
- Good upper abdominal muscles.
- No or limited use of lower abdominal muscles.
- No use of lower trunk extensors.
- Capacity to maintain sitting balance.
- Good spinal dorsal abdominal muscles and extensors.
- Fair hip flexors and abductors.
- Good sitting balance.

Paraplegic

- Will affect only two (2) limbs
- Thoracic and lumbar lesions from T6 to T10.
- Involvement of the lower extremities.
- Good spinal dorsal abdominal muscles and extensors.
- Fair hip flexors and abductors.
- Lumbar lesion at L4 or L5.
- Good sitting balance.
- Good abdominal muscles.

Amputee

- Amputation of one or two lower limbs.
- Excellent sitting balance.
- Excellent abdominal muscles.
- Excellent to Good sitting balance.
- Excellent to Good abdominal muscles.
- Sacrum lesion from S1 to S3, involvement of one lower extremity or slight involvement of both lower extremities.
- Limited involvement of one lower extremity or slight involvement of both lower extremities.

Les Autres

- An impairment or group which includes all those that do not fit into the aforementioned groups (les Autres). Eligibility is determined by a variety of processes that may include a physical and technical assessment and observation in and out of competition. Les Autres also includes age related disabilities including stroke victims, degenerative disability, etc.

Eligibility

Eligibility judgments depend very much in part upon muscle function. Athletes **MUST** have at least 7% loss of lower limb function or a below the knee amputation to be eligible for competition otherwise they are excluded from competitive play.

What Determines viable disability for wheelchair curling?

This is a question which is ever evolving and will continue to do so as the sport develops. However, there are three primary questions that must be asked when trying to determine if a disability is a viable one for the sport of curling.

- **What is the nature of the disability?**
- **How and when was this diagnosed/documentated?**
- **What type of accommodations might they require?**

What is the nature of the disability?

Disability is the inability to engage in any substantial gainful activity by reason of any medically determinable physical impairment(s), which can be expected to result in a continuous period of not less than 12 months.

How and when was this diagnosed/documentated?

Simply; when, how and who was this permanent disability diagnosed by. Can the individual provide some form of documentation to endorse this disability?

What type of accommodations might they require?

It must be asked at some point, what types of accommodation will the individual athlete require to participate with in not only the program but within the facility the program is being facilitated in? Individual accommodations are different from facility accommodations or more commonly referred to as accessibility issues. When speaking of individual accommodations this directly relates to the personal requirements one needs to be inclusive or integrated such as bathroom related needs and facility accommodations refers to general accessibility issues such as facility ramp access.

What is accessibility?

“Accessibility” is the combination of various elements in a building or area, which allows access, circulation, and the full use of the building and facilities by persons with disabilities.

The CCA has developed a wheelchair accessibility survey to act as a resource material to assist in determining whether a facility could serve as a “credible functional accessible” wheelchair facility for possible usage for events or recreational participation, which would include individuals with a disability and the elderly. This particular survey has been modified to deal specially with functional accessibility for facilities regarding CURLING USAGE ONLY. A copy of the check list is available at the Canadian Curling Association office.

Goals of wheelchair curling

The CCA has developed three common goals as we work towards the grass roots development of wheelchair curling. These goals are as follows;

1. To provide curling clubs with a checklist of requirements for wheelchair-bound athletes to enable them to curl at recreational and competitive levels
2. To provide development information and expertise to manage/coaches a team of wheelchair-bound athletes wishing to participate in the sport.
3. To develop resource materials and hands on instruction for curling clubs, such that initiators at clubs can easily utilize this information for their target group

These goals are set as a primary guideline as we evolve our program both at the grass roots and the high performance levels.

Coaching and Coaches Etiquette

When dealing with athletes with a disability we need to remember a few small things, one they are athletes first and two the disability must always come second. Coaches need empathy, patience, and consistency. Coaches should understand that each athlete has a specific set of circumstances that led him/her to use a wheelchair - recent illness, hereditary conditions, Multiple Sclerosis, or stroke. The wheelchair curlers may be former able-bodied athletes, or wheelchair athletes who have excelled in other sports for paraplegics and quadriplegics.

Athletes may be looking for a mainly social experience. Athletes will not necessarily be aware that they are cold or their muscles are overexerted. Coaches should watch the athletes arrive, assess their posture and balance and perhaps determine whether or not each athlete will allow a 'hands on' approach. Ideally, good control of one arm and one hand is preferable. The more the athletes can do for themselves, the more they enjoy the game

Do talk to them and others in a conversational grouping in front, not behind, the wheelchair athlete. When doing this it's always best to bend or lower your body to the height of the athlete. This prevents any resemblance to talking down to the athlete. Ask the athlete if it is okay for you to move his/her wheelchair. Some athletes may be more fiercely independent than others. Most will prefer to do it themselves, so you just indicate where they should be located.

Remember as coaches, you should wear curling shoes and grippers. This shows the athlete that you are instructing them as just that, and athlete. They may require assistance both on and off the ice and remember an "ask first" mentality must be implemented.

General Equipment

Wheelchair curling in comparison to all other wheelchair sports will be found to be the cheapest and most economical wheelchair based sport that exists for the recreation player today. There is of course the option for players to invest greater amounts of monies if they wish to become more competitive.

Be sure to involve the club's ice technician in your orientation. This will be your greatest source of information as it relates to your athletes seamlessly participating within the club environment. It will also educate the ice technician about the care taken by wheelchair curlers to protect the playing surface.

Clean cloth

For the recreational player you will however require some basic tools for each person to be able to get started. Because over 98% of all wheelchair curlers will use their everyday wheelchair, we will tend to find that a large amount of dirt or debris will be tracked in on both the front and back wheels of the wheelchair. So before any wheelchair bound athlete heads out on the ice you will require clean rag(s) for the athletes to use to clean their wheels. Remember both the front and the back wheels need to be cleaned. In reality the front wheels of the wheelchair will tend to track more dirt than the back wheels. Paper towels are somewhat effective for drying off the wheels if they are wet but a cloth is highly recommended.

Extra blankets

A couple of extra blankets or mitts in case someone is not dressed appropriately would be good to have on hand due to the fact that over 60% of wheelchair curlers will not be able to tell accurately when they are getting cold. It is your task as a coach to ensure the warmth of your athletes and as you begin each on ice session we recommend on an ice instruction session of no

greater than 50 minutes. After 50 minutes you should take a break for 15-20 minutes before continuing on to your next 50 minute on ice session. This will allow for each athlete to warm themselves when necessary. Another key element to remember is to provide opportunity and time for washroom breaks. The average wheelchair user will require approximately 8-15 minutes to use the washroom, due to the nature of the varying disabilities.

Delivery stick

Although not required it is highly recommended that delivery sticks, or cue sticks are used as the primary delivery method of the stone. We will cover delivery methods later in this manual giving full explanation as to why one method is preferred over the other.

Wheelchair ramps

Because of the nature of the sport and the fact that over 80% of all curling clubs will have some sort of accessibility issue, it is likely you will require some type of ramp for your athlete to gain access to the ice. In almost every club the ice maintenance equipment ramp can be used for this purpose. In all other cases ramps can be as simple as a piece of plywood that bends as the curler wheels to the ice surface. This is the least satisfactory method, but it will work. Assistance with holding the board in place and with pushing up the ramp is necessary where the board is not thick enough to be stable. The top of the ramp needs to be flush with the backboard however. It is highly recommended that as a coach you remain close by as your athletes gain access both on and off the ice in case they need assistance. An improvement on a piece of plywood is a sturdier ramp with wooden braces that does not bend under the weight of the wheelchair. Assistance may be needed to hold the ramp flush to the backboard.

Portable Ramp



Ideally, ramps could be attached to the backboard edge during league play and removed afterwards.

Cool down period

Once the athletes have gained access to the ice they will require approximately 5 minutes for both the front and back wheels to cool down to the same surface temperature as the ice. This will prevent any front wheel marks showing on the ice surface. In fact, wheelchair curlers will

do less damage to the ice surface than able bodied curlers. Backboards or other off-ice areas should be spacious enough to allow the wheelchairs to cool down. Without this cooling down period, the tires could leave marks on the ice.

This time could be used to talk about strategy or other aspects of the game as part of the lesson plan. During league play, use this time to make announcements, organize teams, identify spares, etc. Clinic coaches can use the time for ice and game orientation.

The Mat

Although NOT PERMITTED in competitive play (WCF, CCA sanctioned competitions) a mat is a useful tool for development, single practice or recreational play. Mats placed at the hog line will anchor a wheelchair sufficiently to allow the athlete to deliver the stone. They must have a rubber underlay or other gripping surface to adhere somewhat to the ice. Carpets squares are adequate, but usually not long or wide enough to support the tires not to mention that they do tend to leave small amount of debris on the ice. Mats should be placed to the right or left of the target line and angled so that a stone doesn't hit it during any backward motion.

Wheelchairs

Due to each athlete's individual requirements and disability you will experience a wide range of wheelchairs. Each athlete's wheelchair varies greatly both from a technological level as well as an economical level based on their individual circumstances.

Sport wheelchairs with cantilevered wheels or regular wheelchairs in various stages of wear and tear may be used. All wheelchairs will require some type of wheel lock more commonly referred to as a brake. All brakes should be in good operating condition with full contact to the tire. Wheel locks when engaged should not allow the tire or wheel to move. If it does, they need to be adjusted. Wheelchairs can be equipped with or without foot holders or seatbelts and this will vary again on each athlete's individual requirements.

As explained before, both the front and back tires should be cleaned thoroughly to remove much /all grit and dirt. Arrival time should be half an hour before play begins to allow wet wheels to dry, brushing to be done, and tires to be cooled down. Although not required there should be some type of tread on the tires. As a coach you experience two basic types of wheelchair tires, those which are air filled and those which are solid. In either case, the tires need to be in good condition and those which are air filled having at least 50 psi of air in order to prevent any etching of the ice from the wheelchair rim.

Clothing

With each athlete their clothing preferences or requirements will vary. These requirements as you will experience will range from short sleeves to snow suits! The athlete will be the best judge of his/her needs. However, it is recommended athletes wear warm jackets and/or layered sweaters and shirts. It's also a good idea that each athlete wears gloves and warm foot wear.

Some athletes will have some foot mobility. Although not permitted in competitive play, the athletes may position or guide rocks on the ice-surface using their feet. Proper footwear should be worn (grippers). An athlete without foot mobility may wish to guide rocks to other curlers or into position using the foot pedals.

Transportation

Both as an athlete and coach, probably your biggest hurdle will be issues surrounding transportation to and from the curling facility. For athletes who drive this does not pose a major problem however, for those who do not, public transportation systems for the disabled will vary vastly from community to community.

Due to this fact, when having a practice or hosting an event which may have athletes using public/social service supplied transportation, appropriate accommodations should be made in case the athletes are late and **at no time during an event should they be penalized for any type of transportation issue.**

Wheelchair Curling

Is it the same game?

Wheelchair curling is an adaptation of curling for athletes with a disability. It is actually very similar to "ordinary" or (Able-bodied) curling. The rules are close to the same but do have differences. For greater explanation you can find a full list of the current rules (2007) in appendix 1 of this manual.

Wheelchair curling is played with the same rocks and on the same ice as regular curling, though the rocks are delivered from a stationary wheelchair and there is no brushing. Rocks may be delivered by hand while leaning over the side of the wheelchair, or pushed by a delivery stick. A stick with a bracket that fits over the rock handle, (see photo) allowing the rock to be pushed while applying correct rotation is also permitted. The rock must be touching the center-line at delivery, and be released before reaching the hog-line.



The Cue head

National and international competitions are played under rules devised by the World Curling Federation. These rules mandate that teams be of mixed gender, and that games be six ends in duration. Wheelchair curling can be played by individuals with a wide range of disabilities. All that is needed is the co-ordination to exert a measured pushing force, and a tolerance for cold. It is not an aerobic activity.

Eligibility

To be eligible to play in the World Wheelchair Curling Championship (WWCC) and qualifying events, a player must have significant impairments in lower leg/gait function (e.g. spinal injury, cerebral palsy, multiple sclerosis, double leg amputation, etc.), so that a wheelchair is used for daily mobility – more specifically, those who are non-ambulant or can walk only very short distances. Determination of minimum disability and appropriate classification is made by authorized international sports classifiers.

Eligibility is an ongoing and evolving process.

Positioning

The wheelchair should be set parallel to the target line for athletes using their arm to deliver the stone. If the athlete is using a curling delivery stick then the wheelchair should be centered on the target line. The feet and wheelchair are completely behind the hog line and the rock must be released prior to the leading edge of the stone crossing the near side of the hog line.

Angling the wheelchair to allow cue sticks to be used either from a centre body position or with a shoulder and arm motion at the side of the wheelchair (this is an incomplete sentence that requires a conclusion (i.e. angling is or is not permitted [I assume angling IS permitted])). At present, curling sticks are limited in allowing for rocks to be pulled back from a 'forward press' position to generate momentum. By angling the wheelchair this allows for a reduction in an angle of attack regarding the position of the brush. Other key elements of the reduction of the angle of attack include; the movement of the stone from left to right within its 11 inch space requirement so that the stone remains touching the centre line. This can be done in conjunction with the actual position of the athlete on the ice. You will find that it is generally recommended that an athlete's standard position is approximately 2.5 meters behind the hog line for delivery.

However, experimenting with athlete positioning by moving back towards the hack (which is permitted) the athlete will find the angle of attack greatly reduced. Remember, that as the athlete moves further back, that adjustments to the placement of the brush and the weight required to deliver the stone will be required.

Anchoring the Delivery or “The Buddy System”

“The buddy system” is when one wheelchair curler grabs the shooter's wheelchair from behind, stabilizing the shooter significantly (see photo). It also provides additional activity and role responsibility for the curlers, increases safety, and increases the confidence of the strong

shooter whose wheelchair can move around during the throwing action. Another way to stabilize the shooter is with curling-brush against the back wheel. It is stable for the shooter and holder (usually an able-bodied person) alike. The disadvantage could include the coaches having to hold the device all the time as the other wheelchair athletes might have difficulty with it. The player anchoring should avoid trying to look over the shoulder of the shooter to view the result of the shot as this tends to pull the shooter off line. This is commonly referred to as the “peek-a-boo” affect. In conjunction with this, when at all possible the player anchoring should place his/her hands on the inside of the wheel to avoid interfere with the shooter’s delivery.

“The Buddy System”



Line of Delivery

When dealing with line of delivery in wheelchair curling three primary elements must be remembered; the angle of the wheelchair, the angle of the body and the angle of the delivery stick (if they are using one). The angle of the wheelchair should be towards the target beside the line of delivery of the delivery arm. It should be pointed towards the target on the line of delivery if using a curling stick from a centre-body and chest position. The front wheelchair forks should be in a straight of a position towards the target and square to the brush.

Use coloured yarn to demonstrate the line of delivery and familiarize your team with the sharper angle of the line of delivery from the hog line to the 12-foot for example.

Hand to Rock Delivery

Hand to rock delivery, although permitted by WCF rules is not recommended for wheelchair curlers for a number of reasons mostly due to safety concerns. From the arm and hand delivery it appears that the usual curling release with hand in a cocked position, lifted directly from the handle, and with fingers aimed at the target and down the line of delivery is a reasonable expectation. The line of delivery from the hog line, as opposed to the hack position, is at a sharper angle.

Avoid a 'C' curve from the delivery arm (see photo). The athlete may be trying to avoid the wheelchair tires. Momentum is generated by a pendulum-like motion from the shoulder to the hand and rock and is dependent on the following factors:



To apply a counter clockwise rotation start by holding the handle at a 10 o'clock position. As the rock is being slid forwards rotate the handle and release the rock when the handle reaches a 12 o'clock position (as in conventional able bodied curling).

To apply a clock wise rotation starting start with the handle in a 2 o'clock position. During the forward motion rotate the handle and release the rock when the handle reaches 12 o'clock (as in conventional able bodied curling).

Two Arm Delivery (with stick)

In dealing with two arm delivery, it usually requires equal strength and mobility in each arm to hold the cue stick centered at the upper chest, below the chin, or at the belly button in a level position. Hands must be strong enough to rotate to initiate rock rotation. The handle of the rock needs to be placed at a 12 o'clock position and rotated at the end of the delivery slightly clockwise or counterclockwise to apply rotation. This is similar to opening a standard door knob. The rotation either clockwise or counterclockwise only need be slight.

If possible, lowering the upper body will generate additional momentum. The cue stick does not allow any forward press motion, so bringing the rock backward is not an option. Momentum tends to be generated suddenly with little weight control by the athlete initially.

Two Arm Delivery 1

To target the line of delivery generally requires that the wheelchair be centered on the target line. (See photo)Two arm deliveries are very difficult for most wheelchair curlers and are not often recommended.



One Arm Delivery

One arm delivery is the most commonly recommended and used delivery when we refer to wheelchair curling and the use of the delivery stick. Over 90% of all wheelchair curlers use this delivery method.

The one arm delivery can often be referenced as being similar to shooting a free throw in basketball. Generating momentum with a fluid motion and establishing a follow through are the keys to the success with this delivery. Follow-through needs to be examined for straight wrist, straight elbow and holding the stick in a follow through position after the shot is released to ensure clean release. Often if the shooter uses his/her index finger as a means of assisting in keeping the wrist straight it can reduce minor flicking of the wrist. No backward motion is required to generate forward momentum. The key to preventing rock freezing to the ice is timing and the athlete should take no longer 15-20 seconds to deliver once the head of the delivery stick has been placed on the rock. Developments are still undergoing to aid in the breaking of the surface tension. Varying the length of the stick will allow for the curler to develop more consistent delivery methods and should be based on individual body type. A sound guideline for determining the correct length of stick is to have the athlete hold the end of the stick in one hand and then extend the arms from side to side, holding the stick in one hand the head of the delivery stick should then be extended across the body until the tip of the head is in the crease of the opposing elbow.

As outlined in the photo, with the stick is positioned in rock handle, the eye, the hand, wrist, arm, and shoulder should be aligned towards target and parallel to wheel along the Line of Delivery. Successful delivery is dramatically increased by verbal confirmation from both 'the Buddy' and 'Skip' as they can assist in alignment. Generating 'push' and a smooth follow-through along the line of delivery as outlined in the photo are also keys to success. Releasing the rock with a 'Palm Up' for clockwise turn or 'Palm Down' for counterclockwise turn will allow for rotation as outlined in the photo the index finger should be placed along the top of the delivery cue to prevent 'flicking' or 'floating' during delivery.

One arm delivery



Release in stick delivery

The handle of the rock needs to be placed at a 12 o'clock position and rotated at the end of the delivery slightly clockwise or counterclockwise to apply rotation. This is similar to opening a standard door knob. The rotation either clockwise or counterclockwise only need be slight. Releasing the rock with this method is sometimes referred to as a 'Palm Up' for clockwise turn or 'Palm Down' for counterclockwise.

Clinic checklist

In order to host a wheelchair clinic standard steps need to be taken and these are often no different than if you were going to host an able bodied clinic. The following list is a suggestion of items which should be referred to in the planning stages of a clinic:

- Ice time reserved
- Facility checklist for disabled athletes,
- Orientation office including upper body warm ups
- Orientation on-ice
- Wheel cool down area
- Movement paths between the back line and boards, and down the sides of the sheet next to the boards

During the clinic demonstrators should be in wheelchairs, though although coaches need not be in a wheelchair. When tires are cooled down, have athletes move into position along sideboards to get a better view. Always talk to them in a conversational grouping in front, not behind, the wheelchair athlete. When doing this it's always best to bend or lower yourself to the height of your athlete, this prevents any resemblance to talking down to the athlete. Ask the athlete if it is okay for you to move their wheelchair if required

Inclusion to league play

A wheelchair curling league can be easily established like any able-bodied league once there are enough players. The major problem is that in most communities there are never enough wheelchair curlers. Simple integration into able-bodied leagues does occur in most curling clubs across Canada with wheelchair curlers in it.

Most wheelchair curlers on able-bodied teams (based on ability and experience) play either in a lead or a skips position in order to permit speed of the game to progress.

Practice Drills

Currently there are no specific practices for wheelchair curlers that differ from able bodied curling practice drills. However, to make the practice more effective have the curlers deliver more than one rock when it is their turn, eliminating wheelchair maneuvering on ice.

Having extra able-bodied curlers available to position to place rocks in appropriate positions for the shooters until the athlete becomes familiar with both delivery and using equipment.

Bring coaches in prior to practice to allow them to try all methods, positions, and equipment for themselves.

Having the athletes start close to the far house, and moving back after every successful three or four deliveries will allow the athletes to gain confidence and strength. Moving three meters or so each time until athletes are able to deliver rocks from the near hog line is a good starting guideline. The intent is to familiarize the athletes with the strength needed to perform the task as expectations and ability will vary significantly.

Play the short game from the near hog line to the near house to allow athletes to gain experience with strategy and to give most-disabled curlers experience with on-ice success.

Warm Ups

Like every sport warming up is the key to having a successful practice and preventing injuries. Wheelchair curling is no different. Due to prolonged exposure to the cold warming up prior to the game and proper stretching becomes vital. Warm up should include the following;

- Triceps and biceps stretches
- Upper back and shoulder stretches
- Waist stretches for those with some mobility in that area
- Hand and wrist stretches
- Athletes who need to develop more upper body strength should be encouraged to work with weights

A complete list of specific wheelchair curling warm up exercises is available through the Canadian Curling Association office.

Safety Points

Wheelchair curling differs only slightly when we speak of safety points to be considered. The primary safety point for consideration that each coaches needs to address will deal with getting on and off the ice. Careful observation and assistance needs to be given as wheelchair ramps will often slip as the athlete move on and off the ice. Another point of consideration is that wheelchair athletes may not be aware of the cold and or of strained muscles. When first starting your program session should last no longer than 50 minutes with a mandatory warming session lasting no less than 10 minutes

Seatbelts may be required by wheelchair athletes using a lot of upper body forward motion to generate momentum and should be used by quadriplegics. Coaches should also be aware of safety for themselves and should wear proper curling shoes with two grippers.

LTAD (Long Term Athlete Development)

LTAD when referring to wheelchair curling is easily understood if we know where we are today. Today wheelchair curlers are often under-trained, over-competed with small grass-roots pool of athletes from which to draw. There is a low competition-to-training ratios and high performance competition superimposed on unprepared athletes and under-developed athletes.

There are often limited resources for Athlete Development Model (ADM). ADM principles as related to the athlete need to maintain an athlete-centred approach with focus on the need to develop PHYSICAL LITERACY in all potential athletes. We need to recognise training to competition to recovery ratios all the while recognizing that athletes need a life.

We also need to use DADI (Disabled Athlete Development Identifiers). We do not need to create a new model. We simply have to identify the common basic principals as it relates to athletes with a disability. We must remember that the average age of a potential athlete is 24 years (including rehabilitation) and the average age of a wheelchair curler is in the range of 42 to 50 years.

With these two primary DADI's we have to remember that family circumstances (husband, wife, and children) and fiscal circumstance may play very strong role in the athlete's ability to participate.

Also because we are dealing with athletes with a disability we must consider disability regression as another DADI. Disability regression refers to whether or not an athlete's disability will continue or become worse with in time (for example, multiple sclerosis)?

With advancement in medicine we must also consider disability progression or will the athlete become well and ultimately ineligible for playing wheelchair curling? Other DADI's to consider can include defined disability, classification, and physical capability.

All in all there can be a number of factors which could need to be considered when dealing with LTAD.

RGK Reimbursement Policy

In a landmark deal the Canadian Curling Association along with RGK Wheelchairs Inc Canada have created a policy to which eligible athletes shall be entitled to a defined contribution amount, with participation in any wheelchair program at either a National Sport Organization (NSO) or Provincial Sport Organization (PSO) level. This contribution is contingent on the purchase of any wheelchair, as set forth in this policy, purchased directly through RGK Wheelchairs, Inc.

Appendix 1



World Curling Federation

Rules for Wheelchair Curling

Sheet

For wheelchair events, at each end of the sheet, 2 thin (i.e. – wool) wheelchair lines are placed parallel to and on opposite sides of the centre line, extending from the hog line to the outermost edge of the nearest circle, with the outside edge of each line being 0.457 m. (18 in.) from the centre line.

Equipment

The use of a delivery stick shall be restricted as follows:

- (i) The delivery stick may not be used in any WCF competition or qualifying event, except wheelchair events.
- (ii) Players choosing to deliver with a delivery stick must use that device for the delivery of all their stones during the entire game.
- (iii) The stone must be delivered along a straight line from the hack to the intended target.
- (iv) The stone must be clearly released from the delivery stick before either foot of the player delivering the stone has reached the tee line at the delivering end.
- (v) A delivery stick shall not convey any mechanical advantage other than acting as an extension of the arm/hand.

RULES Specific to Wheelchair Curling

- (a) Stones are delivered from a stationary wheelchair.
- (b) When the stone is delivered between the hack and the outermost edge of the top of the house at the delivering end, the chair must be positioned so that at the start of the delivery the stone is positioned on the centre line. When the stone is delivered between the outermost edge of the top of the house and the hog line at the delivering end, the chair must be positioned so that at the start of the delivery the entire width of the stone is within the wheelchair lines.
- (c) During delivery, the feet of the player delivering the stone must not touch the ice surface and the wheels of the chair must be in direct contact with the ice.

(d) The delivery of the stone is undertaken by the conventional arm/hand release or by the use of an approved delivery stick. Stones must be clearly released from the hand or stick before the stone reaches the hog line at the delivering end.

(e) A stone is in play when it reaches the hog line at the delivering end. A stone that has not reached the hog line at the delivering end may be returned to the player and redelivered.

(f) Sweeping is not permitted.

(g) For WCF wheelchair competitions, each on-ice team must have four players delivering stones and must be comprised of both genders for all games.

(h) All games will be scheduled for 8 ends.

(i) Each team shall receive 68 minutes of playing time. When a team delays the start of a game, the playing time allotted to each team is reduced by 8 minutes for each end which was considered completed (Rules of Curling 11 (i) apply).

(j) When extra ends are required, the clocks will be reset, and each team shall receive 10 minutes of playing time for each extra end.

Participating teams

To be eligible to play in the World Wheelchair Curling Championship (WWCC) and qualifying events, a player must have significant impairments in lower leg/gait function (e.g. spinal injury, cerebral palsy, multiple sclerosis, double leg amputation, etc.), so that a wheelchair is used for daily mobility – more specifically, those who are non-ambulant or can walk only very short distances. Determination of minimum disability and appropriate classification is made by authorized international sports classifiers.

Team Time-outs

Each team may call one 60 second time-out during each game scheduled for 8 ends, and one 60 second time-out in each extra end.