WORKSHOP TWO: DEVELOPING INTERDISCIPLINARY SERVICES (CASE STUDY)

COUNTRY	APPROACH	ISSUES/CHALLENGES/ BARRIERS	WHY HAS THIS APPROACH WORKED WELL	PLANS FOR FUTURE IMPROVEMENTS
NORTHERN IRELAND GAELIC FOOTBALL	Aim 1: To develop young talent to Elite level (Senior County Teams) Aim 2: To develop the coaches understanding of High Performance ✓ Indigenous National Sport ✓ Strong cultural values played across four provinces ✓ Initial approach to recruit squad from 9 regions within the province of Ulster ✓ Two players recruited from each region	▪ Embryonic stage of the sports Institute ▪ NGB drove the recruitment process – to be fair and equitable the recruitment was as above ▪ Players are not full time athletes – students with no transport and little money ▪ Squad was split over the province – regionally based players was a challenge ▪ Cultural issues – club is the focus – teams based in communities ▪ Performance pathways evolving but SINI not yet established in this ▪ Players continue to play at all levels, club, county and provincial ▪ Problems with avoiding over training, too much competition and burnout	▪ New Institute Driven Initiatives: ➢ Coach Education: NGB Award in association with a CPD programme for coaches ➢ Educate the coaches working with the Elite Athletes ▪ Provincial coaching conference ▪ Management of the SINI squad ➢ Regionally, decentralized squads difficult to manage ➢ Residential programmes were positive and fruitful ➢ Services of Sports Institute used in an irregular fashion	✓ Institute squad members will locate close to the Institute to allow regular access ✓ Recruitment from the Higher Education Environment ✓ Talent not in higher education catered for through emerging regional squads ✓ Level of service will initially not be of the same quality ✓ Need to build capacity and support systems locally ✓ Need to establish facilities in the regions – fallout to the clubs at grassroots ✓ Quality of Grassroots development improved ✓ Running of Master Classes for elite coaches and tie this into Level 3 and Degree in Coaching
AUSTRALIA GYMNASTICS – WOMEN'S ARTISTIC	▪ Provide safe positive learning environment for young elite and potential elite female gymnasts ▪ Staff- program director, coaches (6), psychologist, career and education counsellor, physiologist, nutritionist, doctor, physiotherapist, strength and conditioning	▪ Age of athletes ▪ Education ▪ Body shape – parents and perception ▪ Injuries	▪ Regular communication ▪ Combined interaction by service providers with athletes ▪ Education of Parents	▪ Foreign coaches more integrated into Australian culture

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SPAIN WOMEN'S WATER POLO	▪ Team is composed of: Coach, Physiologist, Psychologist, Biomechanist, Medical Doctor, Physiotherapist	Specific Objectives for shooting training by discipline: ▪ Coach ➢ Training plan ➢ Specific strength training ➢ Stretching and recovery ▪ Psychology ➢ Attentional cues Shooting: ▪ Catching the ball ▪ Looking for a hole ▪ Executing the shot ▪ Medicine ➢ Muscle overload prevention ➢ Injury diagnostics and physiotherapy treatment ▪ Physiology ➢ Arm muscle strength ➢ Nutritional supplements ➢ Functional evaluation ▪ Biomechanics ➢ Efficacy key points ▪ Contact surface ▪ Driving propulsion ▪ Alternative/ simultaneous kick ▪ Grabbing the ball ▪ Muscle pre-stretching ➢ Technique drills	▪ Clear and common target from all the disciplines involved	▪ Adjust objectives based on crossing evaluated parameters
SCOTLAND SWIMMING	▪ To integrate land based and pool training to best effect ▪ Swim Coach → S&C Coach → Athlete (→Physiotherapist) ▪ Aims: ➢ Improved postural control ➢ Starts and turns ➢ Force production	▪ Body mass increases ▪ Sprinters v. endurance swimmers ▪ Tests and measures	▪ Off set or accommodating workloads – swimming/strength training ▪ Focus on aims ▪ Openness – no baggage	▪ Review approach for endurance swimmers ▪ Adapt plan for the sprinters due to individual athlete development ▪ Seek and try out postural measures or assessment

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HONG KONG RACQUET	▪ Involved Sports Medicine and Sports Science, and Strength and Conditioning, Coach and Athlete ▪ Shoulder injury case: Recurrent Structural Alignment Problem: Initial response – Surgery ▪ Task force set up to facilitate the rehab and conditioning programme post surgery, and to answer the question of "why?"	▪ Co-ordinating the response ▪ Preventing the reoccurrence ▪ Challenges include effectively coordinating the team response, collaborative approach without "ownership" of the athlete ▪ Challenging the initial traditional medical (surgery) approach as the first option rather than last option	▪ Team effectively identified a muscle imbalance problem, and inability to tolerate intensity ▪ Instigated a Cybex training programme to correct the imbalance ▪ Initiated a closely monitored S&C programme to gradually increase muscular tolerance of intensity ▪ Inclusion of coach and athlete in the briefings ▪ Use of multi-disciplinary approach	▪ Inability to intercept the decision to operate ▪ Power disparity between consulting medics and SMD staff ▪ Communication
PR of CHINA RHYTHMIC GYMNASTICS	▪ Set up at Beijing Sport University 1980s, Asian and National Champions, 9 senior gymnasts, 35 junior, 6 coaches (most are members of Chinese National Team). Gymnasts from across the country ▪ Academic study in the morning, sports training in the afternoon ▪ Sports Med., Ex Physiology, Biomechanics, Psychology, Chinese Medicine involved in: Talent ID, training plans, preparation for competition, sports injury treatment ▪ Fitness & training centre, and clinic are specially put in place for team	▪ How to balance academic study and gymnastic training- parental objection to specialised training- long hours may negatively impact academic study ▪ Need to reduce injury rates whilst maintaining intensive training- injury often sustained by intensive training.	▪ High-level coaches ▪ Financial support from the national and provincial sports governing bodies and the university ▪ Technical support from other disciplines such as sports medicine, psychology, physiology, and biomechanics ▪ Easy access to school, training venues and hospital ▪ Opportunities for gymnasts to learn, compete and communicate with each other	▪ Coach's quality and further education ▪ Pay more attention to rhythmic gymnasts' academic education and overall development ▪ Strengthen cooperation between coaches and sports scientists in daily training and reduce the frequency of injuries

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NEW ZEALAND TRIATHLON	▪ To address the high occurrence of "stress-fractures" ▪ Staff involved: HP Management, Physio, Medical, Podiatry, Mechanics, Biomechanics, Conditioning, Coaching	▪ Develop a comprehensive assessment protocols for: muscle-balance, podiatry, bike set-up ▪ Conducted twice per annum ▪ Follow-up with biomechanics and conditioning support as required ▪ 35 athletes and 22 coaches in the programme ▪ 22 athletes based in Auckland area ▪ Range of providers involved ▪ Communication between regional operations		
JAPAN SWIMMING	▪ To improve fitness and skill ▪ Control of training and conditioning at altitude ▪ Personnel: Physiology, Biomechanics, Strength Trainer	▪ Key issue was collaboration of our staff and coach, Biomechanic staff of swimming federation ▪ We sent a sports physiologist with athletes during altitude training	▪ One of our researchers (sports physiologist) was former high level swimmer and had a good relationship with the coach ▪ His research theme was swimming	▪ We will continue our support until Athens Olympic
NETHERLANDS OLYMPIC TEAM ATHENS	*Optimize preparation and innovation (qualifying and performing)* <u>Services</u> ▪ Sports Science – "Athens" conditions ▪ Nutrition ▪ Sport 4 – "Olympic" conditioning ▪ Technology – Video Analysis; Innovation Clothing ▪ Strength and Conditioning – Specialist coaches ▪ Coordination from 1 delivery point	▪ Culture – changing behaviour ▪ Fragmentation – shopping ▪ Overkill – details Ok! Basics forgotten! ▪ Quality of personnel	▪ Coach Driven (e.g. mental training) ▪ Coach accountable ▪ 1 delivery point (expert-team)	▪ Weaknesses/Improvements ▪ level of coaching ▪ More accountability ▪ Matching with measuring of: ➢ Performance Programme ➢ Athletes ➢ Coaches

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KOREA WRESTLING	*Maximising athlete performance* <u>Disciplines</u> ▪ Exercise physiology (2 personnel), biochemistry (1), Exercise Psychology (1), Biomechanics (1), rehabilitation (1) <u>Services (funding from NGB)</u> ▪ Evaluating and diagnosing individualised physical fitness, designing training plan, providing specific concern required from athletes and coaches <u>Comprehensive coordinating approach</u> ▪ Team support system; there are three teams according to the categories of events; a record game, ball game and match game. One team is composed of 5-6 researchers and one researcher is responsible for at least one sport event	▪ Strong gap between sport scientists and coaches. a big issue is that researchers give valuable information to coach, but coaches don't apply it! ▪ Sport scientists always try to apply scientific training methods for elite athletes while coaches stick to traditional training methods for them. ▪ If this work is conducted in close collaboration with coaches, it will provide a synergic effect for promoting elite performance. ▪ To solve most pertinent issue is the relationship between sport scientists and coaches of the national team ▪ KSSI has coach education programmes in which top-level coaches take sport science courses and experiment on the application of sport science to the field with sport scientists. This education programme provides a good relationship between them	▪ Centralized model at KSSI- easy access and communication to athletes and coaches ▪ Comprehensive coordinating approach or team support approach provides interaction between researchers of different disciplines to reach a common goal and increases understanding	▪ National Olympic Committee and National Sports Council has weak perception towards sports science, but they need an application of sport science knowledge to maximise elite performance ▪ KSSI should provide information by conducting specific research projects concerning questions within the process of optimising performance and enhance an educational programme
LOUGHBOROUGH UNIVERSITY	World Class → University Athletes ▪ Coaching ▪ Sport Science ▪ Sport Medicine ▪ Research	▪ Team Leadership- skills sets ▪ Personal perspectives – critical reflection	▪ Altered thinking: creativity	▪ System to develop reflection? ▪ Managing conflict within the team

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WALES ALL SPORTS	▪ To endure elite welsh competitors achieve their full potential ▪ Elite Cymru competitors, Olympic/Paralympic and CWG sports ▪ Funding- NGBs, Elite Cymru ▪ Coaching- Coach Education ▪ Sports Science- Physiology, Psychology, Strength and Conditioning, Biomechanics, performance analysis, nutrition ▪ Sports medicine- doctor, physiotherapy coordinator *High priority sports get all services, others get limited approach. Judged on the impact that is likely – e.g. physiology for swimming over snooker*	▪ Resources to service all athletes ▪ Available expertise in some specialist skills in Wales – finding time they can meet with athletes ▪ Willingness to work as part of interdisciplinary team ▪ Confidentiality- and staff that are willing to work within that ▪ Coaches- old school attitudes ▪ Competitors- old dog, new tricks! ▪ Time constraints for part time staff and competing athletes	▪ One Stop Shop- helped because it is a small country. One phone number for anyone on Elite Cymru ▪ Full time dedicated staff (8) ▪ Evolved with demand- not an institute building as such. Services have grown with the demand.	▪ Development of sports medicine network through the sports medicine doctor and physiotherapy coordinator posts ▪ Development of strength and conditioning network for athletes to tap into
JAPAN SYNCHRONI-SED SWIMMING	▪ Overall support to synchronised swimming team and individuals ▪ Biomechanical analysis, video feedback at the competition, nutrition support and medical support ▪ Biomechanics researchers (2-4), sports information researchers (2-4), dietician (2), and medical support (2). ▪ Coaches have priority to decide support provided ▪ *Synchro is one of target sports, tend to be top 2 in the world* ▪ *Squad size- 1 team and few individuals- less than 20 athletes* ▪ *Researchers communicate with coach to suggest next steps but coach has their own plan. Can be difficult to know what coaches are thinking!*	<u>Biomechanical analysis</u> ▪ 3D form analysis is used, but the underwater 3D analysis was difficult because of camera position and clearness of the water. We use waterproofed camera with remote control ▪ For video feedback at the competition, we use video-on-demand (VOD) system to help several athletes view their performance at the same time	▪ Synchronised swimming team used my Institute as training centre, so there is good communication between researchers and coaches ▪ Because of Institute has developed recently, it was possible to use newer technology equipments for support, such as under water camera with remote control, and VOD system	▪ Biomechanical analysis under water was difficult. We need to develop a good and fast method to display athlete's 3D movement underwater ▪ The video taken at the competition, which includes underwater movement, will be archived and put into video database system at my institute ▪ We don't support anything concerning choreographical analysis, which is very important for synchronised swimming

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SOUTH AFRICA NETBALL (STELLENBOSCH NETBALL INSTITUTE)	<u>Disciplines</u> ▪ Sport Science (fitness & skill evaluation, programme design and implementation) ▪ Sport Technology (games analysis for evaluation of tactics/strategies) ▪ Sport Psychology (mental skills training) ▪ Biokinetics (injury rehabilitation) <u>Aims</u> ▪ To provide integrated and customised sport science support that will allow each player to achieve her potential ▪ To provide information for decisions about training and competition through performance evaluation	▪ Access to players ▪ Coach involvement ▪ Financial viability ▪ Stellenbosch Netball Institute is private academy (not part of the University) ▪ Expertise in netball ▪ Access to training facilities in general ▪ Facilities for training camps	▪ Access to players: it is a residential academy, so players are easily accessed at prime times ▪ Coach involvement: it is intense and productive ▪ Financial viability: amount is modest, but accounting is reliable and cost effective ▪ Stellenbosch Netball Institute is private academy: Stellenbosch University netball club has pitched its efforts toward other kinds of projects ▪ Expertise in netball: there is considerable expertise in all aspects of netball ▪ Facilities for training and training camps: Discounted gym membership; local schools used for training camps	▪ Emphasize netball research, especially in decision-making ▪ Share knowledge through coaching education efforts (a cooperative effort to build bridge to University netball club) ➢ Encourage games analysis at grass roots level to promote its effective implementation at elite level ➢ Build link between coaching education qualification in Department of Sport Science and Stellenbosch Netball Institute ▪ Generate publicity for Stellenbosch as a training destination for netball
SINGAPORE BADMINTON	▪ To get coaches and athletes to maximise use of different expertise ▪ To increase the quality of training and competition performance	▪ Coaches from different backgrounds with different training models ▪ Sports science viewed as “optional enrichment” rather than “fundamental” ▪ Lack of central umbrella coordination ▪ Developing sports specific expertise and athlete centric solutions		▪ Look towards centralised coordination ▪ Implementation of basic training principles and guidelines ▪ Coach education and agreement on interdisciplinary training model

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CANADA CANOE/KAYAK	▪ 35 athletes at the senior, junior and developmental athlete level ▪ Priority service is coaching with two full-time national team coaches ▪ Service providers in physiotherapy, massage and chiropractic services for onsite training, during competitions or offsite depending on the needs of the athletes ▪ Designated sport physician who is conducting annual sport assessments and will provide services when required ▪ Performance Enhancement Team is coordinated by physiologist on all sport science initiatives	▪ Communications through coaches with athletes ▪ Support for athletes in winter training camps ▪ Communication between national coaches and personal coaches ▪ Complete coordination between sport medicine service providers ▪ Lack of support for sport science innovations (funding partners, National Sport Federation)	▪ Developing base of canoe/kayak specialists across disciplines ▪ Accessibility and familiarity with athletes ▪ Progressively increases expectations of training environment ▪ Lead for country – protocols, data collection, coordination	▪ Meet as collective unit (coaches, sport medicine, and sport science support) more often ▪ Development on water sport science support to assist coaches through training ▪ Build a facility specifically for national team programs ▪ Being involved in hosting more competitions ▪ Host more international athletes for training ▪ Hire other coaches in the canoe discipline and with the developmental national team athletes ▪ Bring together athletes/coaches of different levels (world medallists/junior worlds)
CANADA DIVING	▪ To create a team supporting the team ▪ The information provided by each service provider (specialist) will not only help the head coach but also the other specialists	▪ The head coach must “buy in” the project and be the leader of the project ▪ The specialists must accept to exchange information with other specialists	▪ The commitment of the specialists is outstanding ▪ The energy, the enthusiasm developed during the work sessions is contagious	▪ The sessions must be better documented

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MALAYSIA INSITUT SUKAN NEGARA (ISN) MALYASIA	<u>Disciplines, Service, Personnel</u> ▪ Sports Medicine- screening, medical, injury, field coverage, antidoping ▪ Sports Science – annual coach workshop, training programme development, testing and monitoring ▪ Secretariat- administration, integration, liaison, education, public relations ▪ Unit heads – developed to masters level (4/5), aim for PhD ▪ Personnel – from Malaysian university sports science schools ▪ Expat. consultants – 3 full-time- general, conditioning, physiology, 2 <u>Overall Priorities and objectives</u> ▪ Elite level – Olympic gold, "Gemilang 2006": Selected sport- 21 sports, 26 disciplines ➢ Traditional sport, skill sport, WT-Classification sport, selected team sport ▪ Olympic/Asian games gold medal performance level ▪ Partnership with international preparation division, NSC Malaysia ➢ Proper planning and implementation of training programme ➢ Effective sport medicine and scientific support ➢ Effective anti-doping programme ▪ Sports Science Integration – high performance teams 1-5 consisting of members from all disciplines ▪ Medical injury coordination	▪ Constraints of Foreign coaches ▪ Development of Malaysian Coaches ▪ Funding issues – ISN & International Prep. Div. apply for funding ➢ NSC Board – annual Budget, supplemental budget ➢ NSC Support Committee (JKB) Disbursement of funds ▪ Development of ISN Service – Efficiency and effectiveness: Making a difference ➢ Work culture and pace of action ➢ Personnel Training ▪ Evolution and revolution of ISN ➢ Development of training programme – Periodization ➢ Annual ISN coach workshop ➢ ISN support service provision – systems and processes ➢ ISN integration – sports science, medical ▪ Training programme monitoring ➢ Testing programme – training progress and effectiveness ▪ Performance progress ➢ Competition grading – proposed during ISN coach workshop ➢ Performance report – coach report, observation by HPT ▪ Achievement/outcomes – results and performance review	▪ Integration of ISN device elements, systems and processes ▪ Personnel – quality and quantity, commitment ▪ Support of coaches and athletes ▪ Organisational support – finance, programmes	▪ Further improve ISN service ▪ Further improve ISN staff – training opportunities, career development ▪ Improve collaboration with IPD, NSC, communication ▪ Improve Malaysian coaches – quality & quantity ▪ Financial support for sports science infra-structure, equipment, programmes

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AUSTRALIA (ACTAS) CYCLING	▪ Coach Driven ▪ Disciplines involved – Physiology, Nutrition, Psychology, Medicine, Strength and Conditioning, Biomechanics, ACE and program management ▪ Integrated delivery of program ▪ Responsible athlete monitoring ▪ Operational approach – 3 monthly meeting of all service providers with squad coach	▪ Three disciplines in the sport – road, track, MTB – men and women ▪ Planning for a 12 month period across disciplines difficult ▪ Success of this approach based on ability of coach to manage and negotiate with all the service providers ▪ In a small organisation like ACTAS a very successful approach	▪ Quality coach – who can manage the interaction and relationships with service providers ▪ Integrated/holistic philosophy embraced by coach, athletes and service providers ▪ ACT- Canberra- Geographically small – not difficult to get coach and service providers together regularly	▪ Review the process and format of regular support service (SS) meetings ▪ Better integrate meetings into 12 month plan e.g. 1st meeting planning for months – 2nd/3rd meetings monitor program, 4th review of 12 month period ▪ Exposure of process to assistant coaches – succession planning, coach education
USA GENERIC PET	▪ To build a long-term coach driven, athlete centred, NGB partnered, integrated program that monitors competition performance, training, injuries, and any other issues relating to performance. ▪ The team is made up of people from various disciplines in sports science, sports medicine, and other area specific to the coaches' needs and goals. ▪ The team must meet regularly to discuss topical issues relating to each athlete's needs and issues	<u>Issues</u> ▪ Centralised or decentralized programs create various logistical issues specific to the situation ▪ Coaches interest level ▪ NGBs commitment to the Coach's plan ▪ If the National Coach and Athletes determined far enough in advance to service properly and then are they accessible? ▪ Challenges ▪ Unorganized coach ▪ Coach's education or exposure to sport science and medicine. See it as 'fitting it in' as opposed to being essential	▪ Services have more impact ▪ Providers are a part of the process thus can offer more productive information ▪ All parties can hold each other accountable with a common plan ▪ Coach has more complete picture of each athlete, given the data is integrated from providers	<u>Weaknesses</u> ▪ Coach's commitment to PET is personally based (as opposed to professionally) ▪ Coach turnover can upset process in our independent system ▪ Difficult to serve decentralized programs <u>Plans for the future</u> ▪ Complete PET plan requires for Performance Funding ▪ Continue implementing process with more NGB's ▪ Find better ways to serve decentralized programs ▪ Build plans through NGB pipeline

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ENGLAND (NORTH WEST) SQUASH	▪ Sustained international success for England through the delivery of World Class, integrated and innovative services ▪ Priority 1 Sport ▪ Access to all primary services – medicine, physio, S&C, physiology, ACE ▪ Access to two supplementary services – performance analysis ▪ Provided from main regional centre	▪ Taking responsibility for existing service delivery ▪ Coach and athlete education ▪ National Centre (camps) versus regional distribution of athletes ▪ Communication	▪ Driven by Performance Director and national coaches ▪ Led from national centre ▪ Athlete service manager ▪ Integrated approach to service delivery	▪ Communication ▪ Delivery of additional supplementary services ▪ Deliver excellence programme
SOUTH AFRICA (EASTERN CAPE) RUGBY, SOCCER, CRICKET, NETBALL, HOCKEY, BOXING & GOLF	▪ Vision of the eastern cape academy of sports is to provide a professional support service to assist with the development of athletes, coaches, officials and administrators at all levels of the sports development continuum, but in particularly those with elite potential within the province ▪ Performance squads and individual athlete support ▪ Athlete support, sport science and medicine and holistic life skills ▪ Quality coaches, funding support (transport, etc), education and training	▪ Finance ▪ Transformation – challenges ▪ Large resource of people ▪ Lack of properly trained coaches ▪ Management technique of academy programmes ▪ Sport science, coaches, athletes (no knowledge of benefit and protocols) ▪ No physical education in school – no discipline in some athletes	▪ Some provincial federations well established ▪ School performers – large base ▪ Home of black sportsmen and women in South Africa ▪ Academy concept strong synergy with university ▪ Link with sport science centre of excellence – to deliver service through academy programme	▪ Coaches, education and training must increase knowledge, i.e. current trends, technical, etc ▪ Development – feeding into programme via federations, club, talent selection ▪ Finance (sustainability) ▪ Volunteers – skills development, ongoing training programmes, appropriate coach education courses, coach education (generic), survey to be conducted of administrators and technical officials to identify training needs

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HUNGARY NATIONAL INSTITUTE FOR SPORT TALENT CARE (NUPI)	• The main task of the Institute: in 19 Olympic sport events supervising the development of young sport talent • Division of the Ministry of Child, Youth and Sport • NUPI departments • Scientific – Diagnostics (total analysis of holistic picture of athletes), Pedagogical Research (special education programme to fit round sports training – special schools), Social Environment • Care Programmes – Elementary- Secondary School, Basic Program (6-14), Champion Program (14-19), Star Program (19-23) • Staff – 167 (full time), 76 (part time) • Champion Program: 1247 athletes (aged between 14-19)	• Money to support athletes between this programme and Olympic programme • Age of development is different for different sports – e.g. gymnasts finish their sporting career around 19	▪ The well defined role of the Institute in the system ▪ Centralised work ▪ Multiple care, managing ▪ Have historical data to be able to predict future performance of athletes ▪ Tailor education programme to fit around required sport training ▪ Scientific measures: We can estimate around puberty the body mass composition etc that will estimate the athlete's potential for strength training etc. Estimate biological age- can be 4 or 5 years difference between biological and chronological age. VO2 Max capacity can be estimated at an early age	
INDIA ANTI-DOPING COMMISSION	• National Anti-Doping Policy and Anti-Doping Commission of India was established in 2000 to "curb the drug menace in elite sports" in India • Covers all disciplines • Responsible for random checks/tests, but also works as an integral dept. of Sports Sciences to provide scientific back-up to athletes • Promote fair play and drug free sport through pedagogical and practical approach	• Large population coupled with low socio-economy and literacy rate. • Lack of knowledge amongst athletes/ coaches/parents re. drug abuse Diverse culture and range of languages therefore difficult to disseminate information • Financial constraints- impacting on research and development, accreditation of practitioners, and lack of testing equipment • Alternative medicine used- can contain IOC and WADA banned substances	• Anti-doping included in the National Sports Policy • Commission disseminating anti-doping awareness through workshops, clinics and seminars • Educational website created (www.adcoi.org) with details of banned substances and side effects • Website accredited by WADA	• Introduce doping tests at all levels of sports competitions in country • Education aimed at grass roots level • Education through PE teachers in school • Research and Development strengthened and collaboration with developed countries • Website translated

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RUSSIAN STATE UNIVERSITY OF PHYSICAL TRAINING, SPORTS AND TOURISM	• Decline in morality within sport due to athletes, doctors, coaches and scientists turning to dangerous and/or forbidden substances in order to keep up with the huge volumes and intensities needed to succeed on the world stage ▪ Natural-science substantiation of development of High Technologies of Elite Athletes' training ▪ Disciplines: Thermodynamics, physiological, kinesiological, pedagogical, legal and moral	• The minimisation of mistakes and omissions in the preparation • Minimise the pedagogical mistakes • Ensuring the training programme is individualised correctly • Continuous control of kinesiological systems • Continual monitoring of athlete • Optimisation of training volumisation with the tendency to minimise loadings (as opposed to previous theory to maximise load) but must still be enough • Creating very sharp, specific loadings – think individual muscle or part of a muscle. Not the entire leg when developing training load • Optimising the adaptation process and monitoring continually to ensure its success • Developing new health-saving technologies to use in training – protecting the athlete as the main resource • Use of non traditional methodologies to study skill acquisition in tandem with psychology and physical systems • Using the new concepts to replace former drug dependent technologies	▪ Methods to make legs strong, but flexible and fast at the same time ▪ Specificity of training programmes for sport or event ▪ Individualisation of programme for each athlete ▪ Monitoring of athletes to be able to change programme accordingly ▪ E.g. use of force-velocity curves on computer screen for monitoring of squats	▪ Lots of ideas and projects, but don't have the money to realise them. ▪ Plan to seek international collaboration to share funding and results

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SOUTH AFRICA (EXAMPLE OF APPROACH)	▪ Former talent ID manager at AIS for 10 years ▪ 45 million population – 80% in townships ▪ 220 athletes in the academy at the moment ▪ Seeking to put 18 year old basketball player on scholarship ▪ Does full screening programme on entry into institute. He is malnourished, decision is to fund his food. Reassessed in 3 months time and no difference as SA culture is to spread among family. So arrange with to have his meals elsewhere. Both parents die of aids so he is now head of family and wants to leave programme. Have to consult with community leader to convince him to stay with sport as way out of problem. Offered a professional scholarship, but community leader says he has to be initiated as a man first – 6 weeks in the bush – postpone scholarship. Before taking up scholarship, needs a visa so has to have a chest x-ray – he contracted tuberculosis. 6 month treatment- no improvement because the witch doctor has advised him against the treatment – have to find an African doc to provide advice for the medication.	▪ Lessons: we can be very conservative in view of inter-disciplinary support. Every athlete is an individual and should provide for them holistically ▪ Flexibility to support each athlete ▪ Different approach to sport by population – sport is not seen as the way out for many – no TV and community spirit is so strong ▪ Athlete is now on scholarship in Holland – have to ensure that cultural difference is not too large		